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27-28 November, 2014

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Second
National Seminar on
*Relevance of Modern Methods of
Studies in Unani Medicine*

27-28 November, 2014

&

Pre-Conference Workshop on
*Proficiency in Advanced
Instrumental Method of Analysis*

26 November, 2014

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Faculty of Unani Medicine
Aligarh Muslim University
Aligarh-202002 (U.P) INDIA**

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(Under the auspices of UGC, DRS-I Programme)
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(27-28 November, 2014)

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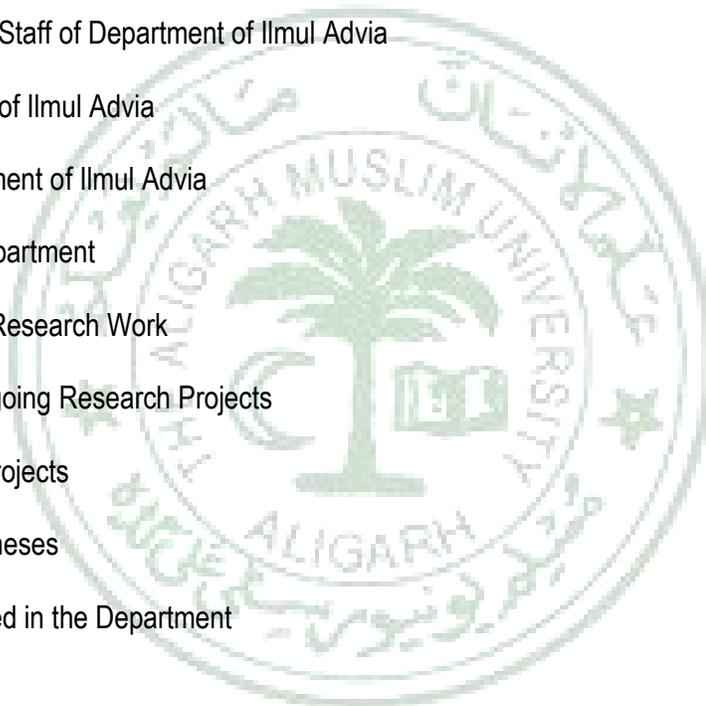
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Acknowledgement

Automation (c. 1206)

Al-Jazari creates the automation that anticipates today's industrial robots.

Most people think of Self-operating machines as Twentieth-century inventions. Although Isaac Asimov coined the word “robotics” in 1942, and Grey Walter built the first electronic autonomous robots in 1948, the first automation for which we have good evidence was a boat with four mechanical musicians. It was built more than eight hundred years ago by Islamic scholar Al-Jazari (1150-1220).

Al Jazari, considered by some to be the father of robotics, wrote his *Kitáb fima rifat al-hiyal al-handasiyya* (Book of knowledge of Ingenious Mechanical Devices) in about 1206, while he was the place chief engineer in Diyarbakir (located in the southeast of present day Turkey). The book describes a boat he constructed that floated on the palace lake and entertained guests at parties with music from a flute, harp, and two drums played by automatons. The drummers contained rotating cylinders with movable pegs. As the cylinder rotated, the pegs would strike levers that caused the drums to be played. Changing the number and location of the pegs produced different rhythms, and so the automation was entirely programmable.

Automatons created in subsequent centuries, mainly for entertainment purposes, continued to play musical instruments, along with other activities that could be recreated in a sufficiently realistic manner.

Today, factories increasingly use robots-essentially automatons powered by electricity-for jobs that require speed, precision strength, and/or endurance, Robots build cars, package goods, manufacture circuit boards, and perform many other tasks. Almost a million robots were in operation Federation of Robotics expects this number to reach 1.2 million by the end of 2010. ES

**ROBOT, INDUSTRIAL ROBOT, BIPEDAL ROBOT,
SURGICAL ROBOT**





डॉ. हर्ष वर्धन

Dr. Harsh Vardhan



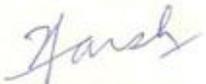
स्वास्थ्य एवं परिवार कल्याण मंत्री
भारत सरकार
Minister of Health & Family Welfare
Government of India

MESSAGE

It gives me pleasure to know that the DRS-I Programme of UGC in Department of Ilmul Advia, Faculty of Unani Medicine, Aligarh Muslim University, Aligarh has taken the initiative to hold a National Seminar on "Relevance of Modern Methods of Studies in Unani Medicine" and a Pre-conference Workshop on "Proficiency in Advanced Instrumental Methods of Analysis".

I am happy to know that Department of Ilmul Advia is the first Institution of its kind in India and abroad, and is associated with interdisciplinary research work on Unani drug and formulations. This conference is a significant step towards sustaining and expanding the advancements regarding use of Unani Medicine in the last decade. I congratulate the Department for developing the theoretical sophistication in modern techniques which will help in advancing Unani Medicine in its traditional character.

I congratulate the Department for the comprehensive and advanced theoretical and practical achievements that have allowed it to emerge as a nodal agency for working towards a high degree of up-gradation of research, teaching and practice of Unani Medicine.


(Dr. Harsh Vardhan)

Place: New Delhi.

Date: 04.08.2014

नितिन अग्रवाल
राज्य मंत्री
चिकित्सा एवं स्वास्थ्य,
उत्तर प्रदेश



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उ० प्र० सचिवालय,
लखनऊ

दूरभाष : 0522-2238058 (O)
CH - 2213404

0522-2321797-98 (R)

संख्या 322 / (अ.)वी.आई.पी. / रा.मं.वि.स्वा. / 2014
दिनांक 22.07.14

17-07-14

Message

I am happy to learn that the Department of Ilmul Advia (Unani Pharmacology & Pharmaceutical Sciences) Faculty of Unani Medicine, Aligarh Muslim University is organizing Second National Seminar on 'Relevance of Modern Methods of in Unani Medicine' on November 27-28,2014.

Unani system of medicine is a very ancient system of treatment and cure and its relevance is still intact in treatment of various diseases including chronic ones. What is needed in current times is to introduce modern methods of treatment and cure in this discipline in order to make it more effective and popular among the masses. I hope that this seminar will go a long way in modernising this ancient system of medicine.

My best wishes for the success of the seminar.

(Nitin agrawal)



ALIGARH MUSLIM UNIVERSITY

Aligarh - 202 002, U.P., India.

LT. GEN. ZAMEER UDDIN SHAH (RETD)

PVSM, SM, VSM

Former Deputy Chief of Army Staff &
Member, Armed Forces Tribunal

Vice-Chancellor

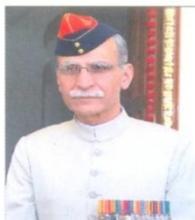
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05 August 2014

MESSAGE

1. I am delighted to know that DRS-I Programme of UGC in Department of Ilmul Advia, Faculty of Unani Medicine is going to organize the Second National Seminar on "Relevance of Modern Methods of Studies in Unani Medicine" on 27-28 November, 2014. This is preceded by a Pre-Conference Workshop on "Proficiency in Advanced Instrumental Methods of Analysis" on 26 November, 2014.
2. Modern methods and technologies, appropriate to Unani Medicine, are the need of the hour. We must work towards global acceptance of Unani System of Medicine. The Department of Ilmul Advia, with its long and unique inter-disciplinary character, has been able to adopt modern methods and techniques suited to Unani Medicine. The Seminar will provide a wonderful opportunity to the Unani fraternity, and other scientists devoted to research in Unani Medicine, to deliberate over a wide range of advanced methods to usher in cutting edge technology in Unani studies. This will be a significant step in the upgradation of Unani Medicine while preserving its basic principles. It will help in sustaining and advancing the tremendous interest in Unani medicine over the last decade.
3. It is also a matter of great pleasures that DRS-I is making steady progress in the Department. The first Seminar organized by the DRS-I "Scope of emerging technologies in Unani Medicine" on 23 March, 2013 has also achieved worthwhile success.
4. I extend my warm greetings to all delegates, participants and organizers of the Seminar and am sure that their deliberations will be fruitful.

Zameer Uddin Shah
VC



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PROF. (DR.) K.C. SINGHAL

M.D., Ph.D. (Med.), D.Sc.

FIAMS, FIAN, FIPS

VICE - CHANCELLOR



Message

The drugs of Unani and other system of Indian Medicine are considered safe and meet the requirements of a very large section of society. Promotion by successive governments and efforts by institutions and individuals has resulted in reemergence of drugs of ISM and has increased their acceptability.

Most of the individual ingredients have been studied for their Pharmacognosy, Phyto-Chemistry and pharmacology, for single drugs and compound formulations known since centuries have become part of Unani Pharmacopeia and formulary.

There is need to establish efficacy and safety of these drug formulations in comparison with drugs of other systems of medicine. Pharmacopoeial standards and good manufacturing practices need to be revised and reestablished to compete with modern synthetic drugs.

The National Seminar on Relevance of modern methods of studies in Unani Medicine encompasses important aspect of chemical and pharmacological testing, new drugs or formulation development on the basis of nano and other technologies, clinical trials and related aspects.

I am confident that the efforts of entire Unani Faculty especially those of Prof. Abdul Latif and associates will be able to not only create awareness but provide useful information for utilizing existing tools for modernization of Unani System of medicine and for creating new ones.

I wish the seminar a great success.

K.C. Singhal
Prof. K.C. Singhal



ALIGARH MUSLIM UNIVERSITY

Aligarh - 202 002, U.P.

Brigadier (Retd) S Ahmad Ali, SM

Pro Vice-Chancellor



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Email: pvcamu@amu.ac.in

12 November, 2014

Message

1. I am happy to know that under the DRS Programme of UGC, Department of Ilmu Advia, Faculty of Unani Medicine of Aligarh Muslim University is organising Second National Seminar on "Relevance of Modern Methods of Studies in Unani Medicine" on 27-28 November, 2014. The Department of Ilmu Advia is amongst the torchbearers of the University where research activity is being pursued under Interdisciplinary approach in a very authentic way.
2. I hope that the forthcoming Seminar will reflect innovation and state of inclusion of recent research technologies in the field of Unani Medicine. This Seminar will not only provide a platform for sharing knowledge but also a place where teachers, researchers, scholars and specialists will interact with each other to deliberate and discuss the way forward. We earnestly hope that the delegates will avail this opportunity to benefit from this event and also get familiarised with the unique traditional culture of Aligarh Muslim University.
4. I want to extend my greetings to all the members of the Organising Committee for their stupendous efforts. I hope that the sharing of ideas and innovations will be very useful for the participants.
5. I wish the Seminar a grand success.

Brigadier S Ahmad Ali (Retd)



Ibn Sina Academy of Medieval Medicine & Sciences (Trust)
TIJARA HOUSE, DODHPUR, ALIGARH - 202002, INDIA

Ref. No.



Dated 7.11.2014

Dr. Abdul Latif
Chairman Organizing Committee
National Seminar on Relevance of Modern Methods of Studies in Unani Medicine
Dept. of Ilmul Advia, Tibbiya College, AMU, Aligarh

Dear Dr. Abdul Latif,

Thank you very much for your invitation to send a message for the Souvenir. It is a pleasure for me to contribute to it by way of a message.

I am extremely happy that the Dept. of Ilmul Advia, Ajmal Khan Tibbiya College is organizing this National Seminar for the second time. There are no two opinions about this Department, i.e., its unique role in furthering the cause of research work on Unani drugs and their formulations by using modern methods of medicinal chemistry etc. to the maximum possible. I am sure that this Seminar will contribute further to the promotion of this basic objective of the Department in general and motivate the young Unani physicians and students particularly.

I wish its grand success, and look forward to the Proceeding of the Seminar in the near future.

With my heart-felt wishes again,

Sincerely,

Prof. Syed Zillur Rahman



المملكة العربية السعودية
وزارة التعليم العالي
جامعة تبوك
كلية العلوم



Message

I am pleased to write this Message that Department of Ilmul Advia, Faculty of Unani Medicine, Aligarh Muslim University, Aligarh (India) is going to organize Pre-Conference workshop on 26 November, 2014 followed by National seminar on "Relevance of Modern Methods of Studies in Unani Medicine" on 27-28 November, 2014. This conference also became very important due to the reason that thrust area of this conference is 'Nano-particles and its applications in Unani Medicine'. Now a day's syntheses of nano-drugs have many applications for the treatment of patients to cure many diseases through Unani Medicine.

I congratulate organizer to for this great event.

Omar

Dr. Omar Abdullah Al-Hartomy

Dean, Faculty of Science

University of Tabuk (KSA)

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الرقم : Ref.
التاريخ : Date
المرفقات : Encl.



प्रो० (डा०) रईस-उर-रहमान

Prof. (Dr.) Rais-Ur-Rahman

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E-mai : advu-ayush@nic.in
drrahman002@gmail.com



आयुर्वेद, योग व प्राकृतिक चिकित्सा
यूनानी सिद्ध एवं होम्योपैथी (आयुष) विभाग
DEPTT. OF AYURVEDA, YOGA & NATUROPATHY
UNANI, SIDHA AND HOMOEOPATHY (AYUSH)
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
MINISTRY OF HEALTH & FAMILY WELFARE
भारत सरकार
GOVERNMENT OF INDIA
आयुष भवन, बी-ब्लॉक, जी.पी.ओ. कॉम्प्लेक्स,
आई.एन.ए., नई दिल्ली-110023
Ayush Bhawan, B-Block, GPO Complex,
INA, New Delhi - 110023

Dated: 11.07.2014

Message

Indeed it is a matter of great pleasure to know that Department of Ilmu Advia (Unani Pharmacology and Pharmaceutical Sciences) is going to organize second National Seminar on "Relevance of Modern Methods of studies un Unani Medicine" in the Faculty of Unani Medicine, Aligarh Muslim University, Aligarh on 27-28th November 2014.

Department of Ilmu Advia, AMU, Aligarh is the first ever Post Graduate department of Unani Medicine in the country and abroad. It has been very actively involved in teaching and research training of students at Under Graduate and Post Graduate level for more than four decades.

The ancient scholars of Unani Medicine have set norms and standards for cultivation, collection, purity and manufacturing of Unani Herbal drugs since very beginning, but it is based mainly on observations and experience. In current scenario WHO needs evidence based support on scientific parameters especially in terms of purity and safety of the drugs being used in the system. Hence, the National Seminar on Relevance of Modern Methods of studies in Unani Medicine being organized by Faculty of Unani Medicine, AMU, Aligarh is the need of time. I am sure this endeavor of the department will popularize the Unani System of Medicine as Science of Health & Healing across the globe.

I extend my all best wishes and greetings to the Patron, Co-patron, Chairman and Secretary of Organizing Committee and all the members of various committees associated with National Seminar for organizing such a historical event.

I wish the National Seminar on Relevance of Modern Methods of studies in Unani Medicine a grand success.

With Sincere Thanks and Warm Regards.

Rais-Ur-Rahman
(PROF. RAIS-UR-RAHMAN)

केन्द्रीय यूनानी चिकित्सा अनुसंधान परिषद



مرکزی کونسل برائے تحقیقات طب یونانی

CENTRAL COUNCIL FOR RESEARCH IN UNANI MEDICINE

An Autonomous Organisation of Ministry of Health & Family Welfare, Government of India
Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)

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Prof. S. Shakir Jamil

MD (U)

Director General

Dated: 16 July, 2014

MESSAGE

I am very happy to know that Department of Ilmu Advia, Faculty of Unani Medicine, Ajmal Khan Tibbiya College, Aligarh Muslim University, Aligarh is organizing a National Seminar on Relevance of Modern Methods of Studies in Unani Medicine on 27-28 November 2014 and a pre-seminar Workshop on Proficiency in Advanced Instrumental Methods of Analysis on 26 November 2014.

The Department of Ilmu Advia is engaged in interdisciplinary research on Unani drugs and formulations and has earned wide recognition for its progress in the field of Unani pharmacology and pharmaceutical sciences. In fact, Ajmal Khan Tibbiya College at the Aligarh Muslim University, Aligarh has over the past nine decades of its existence developed into a leading institution of Unani medical education and research.

In view of the global resurgence of interest in the good elements of Unani Medicine for preservation and promotion of health, it has become essential to scientifically validate various strengths of Unani Medicine for its wider acceptance and use. The Government of India has since Independence been attaching greater importance to multi-dimensional development of Unani Medicine as well as other native health systems. The Central Council for Research in Unani Medicine has over the years emerged as an apex organization of scientific research in various fundamental and applied aspects of Unani Medicine. Besides developing its research programme, the Council has developed research collaborations with leading scientific institutions in the country, and has played an important role in establishing international linkages for the promotion of Unani Medicine.

I hope and pray that the National Seminar on Relevance of Modern Methods of Studies in Unani Medicine and the pre-seminar Workshop on Proficiency in Advanced Instrumental Methods of Analysis being held at Aligarh will help develop better understanding of the subject and will come up with sound strategies for further advancement of Unani Medicine through using modern technologies. I wish the seminar, the workshop, and the organizers great success.


PROF. SYED SHAKIR JAMIL



सीएसआईआर-केन्द्रीय औषधीय एवं सगंध पौधा संस्थान

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्)

कुकरैल पिकनिक स्पॉट रोड, पी.ओ.-सीमैप, लखनऊ-226 015, उ.प्र., भारत

CSIR-Central Institute of Medicinal and Aromatic Plants

(Council of Scientific & Industrial Research)

Kukrail Picnic Spot Road, P.O. CIMAP, Lucknow-226 015, U.P., India

प्रो. अनिल कुमार त्रिपाठी

निदेशक

Prof. Anil K. Tripathi

Director

July 16, 2014



Message

I am very happy to learn that Department of Ilmul Advia, AMU, Aligarh is organising second National Seminar on 'Relevance of Modern Methods of Studies in Unani Medicine' on 27-28 November, 2014. This national seminar will be providing the opportunity to the students, researchers and practitioners alike to deliberate on the various issues involved in scientific studies and authentication in the field of Unani Medicine. I am sure that the ongoing efforts at various levels for affordable health care using our precious bioresource will be further strengthened with the incorporation of modern methods in Unani Medicine.

I wish the National Seminar a great success.

(Anil Kumar Tripathi)

18-07-2014

**DR. C. UMA MAHESWARA REDDY,
M.PHARM., Ph.D.
PROFESSOR AND HEAD,
DEPARTMENT OF PHARMACOLOGY,
FACULTY OF PHARMACY,
SRI RAMACHANDRA UNIVERSITY,
PORUR, CHENNAI – 600 116. TAMIL NADU.**



MESSAGE

I am happy to know that, DRS – I (UGC), Department of Ilmul Advia (Unani Pharmacology & Pharmaceutical Sciences), is going to organize Second National Seminar on “Relevance of Modern methods of Studies in Unani Medicine”, in Faculty of Unani Medicine, Aligarh Muslim University, Aligarh, Sponsored by UGC on 27-28 November, 2014 & a Pre -conference workshop is also going to organize on 26 November, 2014 on Proficiency in Advanced Instrumental Methods of Analysis.

I am sure that the conference would be an opportunity to acquire recent development in the field of Unani medicine for the students, research scholars and the faculty.

On this occasion, I extend my best wishes to the organizers and participants and wish the function a grand success.

**DR. ABDUL LATIF
CHAIRMAN
ORGANIZING COMMITTEE**

DR. C. UMA MAHESWARA REDDY



JAMIA HAMDARD

(HAMDARD UNIVERSITY)

(Declared as Deemed-to-be University under Section 3 of the UGC Act, 1956 vide Notification No. F.9-18/85-U.3 dated 10.5.1989 of the Government of India)

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HAMDARD NAGAR
NEW DELHI - 110062

Dr. S.H. Ansari

M.Pharm., Ph.D., D.Sc., FIC

Prof. and Head

Deptt. of Pharmacognosy and Phytochemistry

Ex-Dean, Faculty of Pharmacy & Ex-DSW



Message

14 July, 2104

It is a matter of immense pleasure that Department of Ilmul Advia, Faculty of Unani Medicine Aligarh Muslim University, Aligarh under the auspices of UGC DRS-I (SAP-II) Programme has put in their finest efforts and taken an initiative to hold the National Seminar on "Relevance of Modern Methods of studies in Unani Medicine from 27-28 November, 2014.

This type of activity would nurture and provide opportunity to the delegates to interact with some of the best brains in the area of Unani Medicine in this country. The event would provide a technical insight on latest developments in the modern methods of Unani Medicine

I extend my good wishes to all the delegates and wish them to have fruitful deliberations for the professional development for their future endeavours.

I wish the event all the success.

PROF. (DR.) S. H. ANSARI

Director



UGC Academic Staff College
Aligarh Muslim University
Aligarh – 202002 UP (India)



Dated: 16 August 2014

MESSAGE

It is indeed gratifying that the Department of Ilmul Advia, Faculty of Unani Medicine, Aligarh Muslim University, Aligarh, which enjoys the coveted status of the UGC DRS-1 (SAP-2), programme, will organize National Seminar on Relevance of Modern Methods of Studies in Unani Medicine on 27-28 November 2014.

In our time alternative medicine has assumed greater importance and relevance. I am sure the deliberations of the Seminar will go a long way in providing relief to the suffering humanity.

Dr. Abdul Latif, the energetic Chairman, Dept of Ilmul Advia deserves credit for organizing this valuable Seminar.

Professor Abdur Raheem Kidwai
Professor of English
Director, UGC Academic Staff College,
Aligarh Muslim University
Honorary Visiting Fellow,
Department of English,
University of Leicester, UK

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मोहान, जिला- अल्मोड़ा (वाया रामनगर), उत्तराखण्ड - 244715

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(A GOVT OF INDIA ENTERPRISE)
MOHAN, DISTT - ALMORA (VIA RAMNAGAR), UTTARAKHAND - 244715



Message

Dear Dr Abdul Latif

I am delighted to know that a National Seminar on "Relevance of Modern Methods of studies in Unani Medicines" is going to organise by Dept of ILMUL ADVIA, Faculty of Unani Medicines, Ajmal Khan Tibbiya Collage & Hospital, Aligarh Muslim University, Aligarh.

It is really appreciable to organise such a knowledge sharing workshop and I feel it is also required in the current scenario, when we are going to standardize the medicines of AYUSH system.

I hope that the deliberations of the seminar will result as Road map in Advance Instrumental Methods of Analysis.

I am sure this platform will encourage the intellectual genius of the nation and motivate it to come forward and contribute for national resurrection

I wish all success for organizing this event.


(V.K. SAXENA)
Managing Director

आयुर्वेदिक एवं यूनानी औषधियों के निर्माता एवं आपूर्तक / MANUFACTURER AND SUPPLIER OF AYURVEDIC & UNANI MEDICINES
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e-mail: impclmohan@sancharnet.in, www.impclmohan.nic.in

(यदि आप हिन्दी में पत्र लिखेंगे तो हम सहर्ष उत्तर हिन्दी में देंगे।)

Dr. Abdul Kabir Dar
Director General/CEO
Indian Systems of Medicine (AYUSH)
/State Medicinal Plants Board J&K



Message

*I*t gives me colossal pleasure that the Department of Ilmul Advia (Unani Pharmacology and Pharmaceutical sciences) is going to organize 2nd National seminar on “*Relevance of Modern methods of studies in Unani Medicine*” and will release a Souvenir on this occasion.

Unani may have disappeared from the country of its origin, but it has found roots in India, thanks to the efforts put in by the great Unani Physicians like Hakeem Ajmal Khan, and above all the institutions which patronized this alternative treatment and propagated it among the masses. At present Unani system of medicine with its own recognized practitioners, hospitals, educational and research institutions, forms an integral part of the National Health Care delivery system.

Ajmal Khan Tibbiya college Aligarh Muslim University boasts of being one of the oldest Unani colleges established in 1927, with its Department of Ilmul Advia one of the first to offer Post graduate courses in Unani Pharmacology and Pharmaceutical Sciences, apart from introducing Research methodology for the formulations of Unani Drugs. If there seems to be any lacunae in Unani treatment, it lies with the modern research on its pharmacological formulations of drugs. Department of Ilmul Advia, Faculty of Unani Medicine, Aligarh Muslim University has shouldered the responsibility for effective research, innovative formulations, Quality control, and standardization of Unani drugs substantiating with the emerging trends of the modern health care delivery system, therefore deserves appreciation.

I wish all those concerned with organizing this National Seminar and publication of the Souvenir especially *Dr Abdul Latif Chairman Organizing Committee and Prof. K.M Yusuf Amin Organizing Secretary*, a great success and hope that the outcome of this seminar will help in further improving the credibility of Unani System of Medicine and its acceptance worldwide.

Dr Abdul Kabir Dar

Telephone : (O) 2401585 (R) 2906005
email : hkmnaeemkhan@gmail.com

Prof. (Hm.) Naeem Ahmad Khan
M.D. (Unani)
DEAN



FACULTY OF UNANI MEDICINE
ALIGARH MUSLIM UNIVERSITY
ALIGARH - 202 002 (INDIA)



Dated

8 November 2014

MESSAGE

It is indeed heartening to hear that a National Seminar on Relevance of Modern Methods of Studies in Unani Medicine is being organized by the Department of Ilmul Advia, Aligarh Muslim University, Aligarh. Traditional Medicine has evolved from different cultural origins and from different philosophical backgrounds and in India, this system of medicine has been in practice for centuries. With the advent of modern medicine and with colonization, this system has taken a backseat in our country, whereas this system of medicine is being studied and developed in Western countries. However, it is a fact that the origin of modern medicine rests in traditional system of medicine.

The purpose and rationale of a National Seminar on the relevance of modern methods of studies in Unani medicine is timely with technological advancements in the field. It is a fact that Unani system of medicine has taken a paradigm shift in recent years as new methodologies and tools are being applied more enthusiastically to make the studies specific, conclusive and reproducible. I am sure, the Seminar will provide a platform to the purists and young researchers of Unani Medicine to find a synthesis on the application of technological advancement in the ancient and traditional system of Unani Medicine.

I congratulate Chairman, Department of Ilmul Advia, for his initiatives in injecting modernism to the traditional system of medicine and hope the delegates will benefit from the deliberations of the Seminar.


(Prof. (Hm.) Naeem Ahmad Khan
DEAN



AJMAL KHAN TIBBIYA COLLEGE
ALIGARH MUSLIM UNIVERSITY
ALIGARH-202002

PRINCIPAL



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Ref. No. 448/AKTC

Dated 23rd Sept. 2014

MESSAGE

I am happy to learn that Deptt. Of Umul Advia is organizing a National Seminar on "Relevance of Modern Methods in Unani Medicine" and a Pre-Conference Workshop on "Proficiency in Advanced Instrumental Methods of Analysis" under the auspices of DRS-1 (UGC).

On this occasion, I extend my best wishes to the organizers for its grand success. I am confident that deliberations of this programme shall be much positive in the scientific research work on Unani Drugs and its formulations.

(Prof. Saud Ali Khan)
Principal

Dr. Abdul Latif,
Chairman,
Organizing Committee



Dr. Abdul Latif
Chairman, Department of Ilmul Advia
Co-ordinator, DRS-I (UGC) Programme

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DEPARTMENT OF ILMUL ADVIA
(Unani Pharmacology & Pharmaceutical Sciences)
FACULTY OF UNANI MEDICINE
AJMALKHANTIBBIYA COLLEGE & HOSPITAL
ALIGARH MUSLIM UNIVERSITY
ALIGARH-202002 (INDIA)



MESSAGE

Chairman, Organizing Committee

I, welcome every delegate who is associated with the Second National Seminar and wish warm greetings from Aligarh Muslim University, Aligarh. It is a matter of enormous gratification for us to organize Second National Seminar under the auspices of DRS I (UGC) on “Relevance of Modern Methods of Studies in Unani Medicine” in Department of Ilmul Advia, Faculty of Unani Medicine, Ajmal Khan Tibbiya College and Hospital, A.M.U, Aligarh on 27-28 November, 2014 alongwith one day Pre-Conference workshop on “Proficiency in Advanced Instrumental Method of Analysis” on 26th November 2014. I would like to share that DRS Programme is the first ever programme in India which has been given to the Department of Ilmul Advia. UGC has identified the Pharmacology, Pharmacognosy & Standardization of Unani Drugs as thrust areas in Ilmul Advia for the first time. Acquaintance of modern methods of studies in Unani Medicine are now the need of the era, as the Science is re-borning everyday with newer facts and exploring newer facts by utilizing the emerging tools of studies, we being Unani Scholars should also make use of them & utilize these techniques and advanced methods of Studies in our Unani system but should not deviate from our basic concepts.

Unani Medicine already has a century long history of modern research beginning under the aegis of Hakim Ajmal Khan in 1920s. These studies have confirmed classical Unani reports and contributed to their scientific standardization and quality enhancement of drugs & formulations. However, newer methodologies promised to take this work further ahead. So, it is the need of the hour to discuss and apply these relevant methodologies to Unani drugs to ensure latest upgrading and global acceptance.

During the past decade there is a tremendous demand of herbal medicine, due to the belief that they are safe and more dependable than synthetic drugs. Their natural chemical configurations play a vital role in the compatibility with the human body. Secondly the holistic perspective of Unani Medicine and all Traditional medicines has also been appreciated as a guarantor of efficacy and safety. That is why Unani and other traditional drugs and herbs and their products are now the centre of attraction for researchers and for application as treatment of various health problems.

In the light of these developments, it is worthwhile to discuss and promote the idea of comprehensive scientific evaluation of all traditional medicines within their traditional and holistic character. This shall also benefit the Unani System of Medicine by establishing their effectiveness in disease. In our previous – First National Seminar was held on 23 March, 2013 in the Department of Ilmul Advia was said to be one of the rare opportunities to attend very interesting, informative and outstanding talks in all programme.

Most of the lectures were very lucid and elaborate and portrayed the existing state of affairs in respect of the new technologies and given an insight in to the judicious use of emerging technologies in the field of Unani medicine. Some of the new technologies entails enormous degree of technical complexities therefore we should use them cautiously but most of the emerging technologies can be used without any hesitation to improve the quality of drugs.

The present Seminar is aimed to discuss the recent technological information regarding the methodologies and research modalities which I hope will fulfill the need.

The interactive sessions; guest lectures by expert pharmacologists, pharmacognosists, medicinal chemists and Unani Medicine experts from various institutions will pave the way for improving the current methodologies of scientific studies. It is quite evident that the medical education requires a strong research oriented approach for achieving excellence in health services.

I am indebted to the eminent and distinguished experts and resource persons, whose deliberations shall prove effective in igniting the minds of researchers, academicians and students. We are also thankful to all those who have contributed their share for making this seminar a success.



Dr. Abdul Latif



Prof. Kunwar Mohammad Yusuf Amin
M.B.B.S., M.D. (Pharmacology)
Professor in Pharmacology

DEPARTMENT OF ILMUL ADVIA
(Unani Pharmacology & Pharmaceutical Sciences)
FACULTY OF UNANI MEDICINE
AJMAL KHAN TIBBIYA COLLEGE & HOSPITAL
ALIGARH MUSLIM UNIVERSITY
ALIGARH-202002 (INDIA)



MESSAGE

Dear Friends,

We are happy to address the growing need for identifying newer research methods and scientific techniques appropriate for the unique holistic character of Unani Medicine, by holding a national seminar on “Relevance of Modern Methods of Studies in Unani Medicine” and a pre-conference workshop on “Proficiency in Advanced Instrumental Methods of Analysis”.

The Department of Ilmul Advia has led effective inter-disciplinary research for the last four decades in a wide area including Experimental Pharmacology: cardio-vascular effects, behavioural effects, anti-arthritic activity etc; Clinical Pharmacology: De-addictive Treatment, Anti-arthritic Treatment etc; Drug Identification: Botanical Morphology etc and Standardization: Extractive values, TLC etc. The findings of these and similar studies in other Unani institutions in India have helped Unani Medicine to re-emerge forcefully in contemporary times. Demonstration of Pharmacological activity has allowed focussed Clinical Trials and botanical identification and physico-chemical standardization have paved the way for contemporarily acceptable Pharmacopoeias and Formularies and the manufacture of remedies of assured purity and quality.

However, newer methods have recently emerged in all these areas which have to be adopted for continued acceptability, as well as, for finding newer and more accurate therapeutic uses and for providing drugs of higher quality. The Department of Ilmul Advia again took a lead. It first identified those techniques which are truly relevant to the unique holistic character of Unani Medicine. Secondly, many of these techniques were installed and used in the Department. In Pharmacology, computerised recording by Data Acquisition System (DAQ) of Effects on Intestinal Receptors and on BP, and specific arthritic animal models for Gout, Osteo-arthritis, Rheumatoid Arthritis etc were set up. In Drug Identification, DNA Fingerprinting etc and in Standardization, HPLC, Microbiological testing etc were started.

During the period when newer methods were being added to the wide ranging inter-disciplinary methods already established in the Department between 1972 and 2000, the departmental output was recognized at the national level and it became the first Unani department to be granted the DRS-I Programme of the UGC. This assistance increased the speed of acquiring newer techniques and equipment. For instance, DAQ recording was extended to Coronary Flow, Ventricular Pressure etc and the scale of DNA Fingerprinting and HPLC could be increased.

In the light of these recent advances made in the Department, it was considered useful to compile and integrate these experiences and put them before the Unani fraternity and other scientists devoted to Unani Medicine, both theoretically and practically. Thus, the present Seminar was planned which includes comprehensive guest lectures by authorities of the respective areas and the pre-conference Workshop will include lectures on the uses and principles of advanced equipment, as well as, practical demonstration of their use.

In light of the significant help of DRS-I in the accumulation of this knowledge and skill, it is fitting that this historical Seminar and Workshop are being undertaken on the platform of the Second National Seminar of DRS-I.

We welcome all the delegates and present these precious offerings to them with the hope that they will be appreciated, benefited from and replicated and / or strengthened in Unani institutions all over India. Unani Medicine which has been already recognized on account of being re-validated by standard research at the national level, will get global introduction and acceptance by the present up-gradation.

We are also preparing and hoping to make the Seminar a pleasant and culturally enriching experience for our guests.

We also hope to soon get an opportunity for presenting our contributions before the global community by means of an international conference.

K. Y. Yusuf Amin

(Professor Kunwar Mohammad Yusuf Amin)

Organizing Secretary

Surgical Robot (1985)

Kwoh refines robotically assisted surgery.

In 1954 George Devol created the first programmable industrial robot. It consisted of a multijointed manipulated arm and a magnetic storage device to hold and replay instructions. More advanced versions worked on assembly lines in the 1960s. In 1978 the PUMA (Programmable Universal Machine for Assembly) was introduced by Victor Scheinman and quickly became the standard for commercial robots.

Dr. Yik San Kwoh (*b.* 1946) invented the robot software interface that allowed the first robot-aided surgery in 1985. “Ole” was a modified PUMA that could perform a type of neurosurgery. In the surgery, a small probe travelled into the skull, a linked CT scanner plotted the best path to the lesion. “Ole” was used for biopsies of deeply located suspected tumors.

Before his device could be used on humans, Kwoh needed to test it. Small metal objects were inserted into four water melons. The robot quickly located the objects and inserted an instrument to remove them.

Robots have since grown more complex and can now assist and even perform surgeries. In 1998 Dr. Freidrich-Wilhelm Mohr used a Da Vinci surgical robot to perform the first robotically assisted coronary artery bypass graft (CABG) at Leipzig Germany.

In 1999 the world’s first surgical robotics “beating-heart” CABG was performed at the London Health Sciences Centre in Ontario, Canada using a Zeus surgical robot. In this type of surgery, the sternum of the patient is not opened, and the heart is not stopped as it is in conventional bypass surgeries.

**AUTOMATON, INDUSTRIAL ROBOT, BIPEDAL ROBOT,
COMPUTER-AIDED MANUFACTURING (CAM)**



Aligarh Muslim University

The Aligarh Muslim University is not just an institution of higher learning but continues to be vitally important organs of movement, initiated by its visionary founder for intellectual and cultural regeneration of the entire Indian people and particularly Muslims. University is an inspiring account of dedicated service for the community and the country.

The endeavour and commitment of a lifetime labouring towards the realization of this undying conviction became a reality when Sir Syed Ahmed Khan on May 24, 1875 founded the *Madrasatul Uloom Musalmanan-e-Hind*, in 1875 which later became Mohammedan Anglo-Oriental College (MAO College), received its character as Aligarh Muslim University (AMU) in 1920.

Spread over more than 467.6 hectares in the city of Aligarh, Uttar Pradesh, AMU offers more than 300 courses in the traditional and modern branches of education. Aligarh Muslim University (AMU) draws students from all corners of the country as well as foreign countries, especially Africa, West Asia and Southeast Asia. In some courses, seats are reserved for students from SAARC and Commonwealth Countries. The university is open to all irrespective of caste, creed, religion or gender. It ranks 8th among the top 20 research universities in India.

A.M.U. occupies a distinct position among Indian Universities and its contribution to nation building is in no way inferior to the best among the lot. This institution was included in the Union list and now is one of the institutions of “national Importance” listed in VII schedule of the Constitution of India. The Aligarh Muslim University is the realization of a vision which was broad, far-reaching and realistic.

Embodying the ideals of the founder-supremacy of reason, liberty of conscience and freedom of expression, hard work, secular approach in all spheres of human relationships and the concept of ‘One Nation’, overriding all parochial considerations. Aligarh Muslim University is an inspiring account of dedicated service for the community and the country.

UNIVERSITY HIGHLIGHTS-2014

- Aligarh Muslim University organized its 62nd Annual Convocation on 16th October 2014. Where, more than 4,000 University degrees were awarded and around 240 gold medals were given to University students.
Director General, Islamic Educational, Scientific and Cultural Organization (ISESCO), Rabat, Morocco and Secretary General of Federation of Universities of Islamic World (FUIW), Dr. Abdulaziz Othman Altwajri called upon Muslim youth in India and all over the world to come forward and project the "True, Humanitarian and Inclusive Image of Islam" to the rest of the world.
- Aligarh Muslim University was ranked 80th in Asia by Times Higher Education University Ranking 2014. It was third among the Indian Universities.
- India Today - Neilson Annual College Survey 2014 J.N. Medical College was ranked 15 best amongst 300 Medical Colleges. The Faculty of Law was 6th. Its best was 11th in 2007.
- INDCAT/INFLIBNET, the largest database of Indian Universities/ Institutions has placed AMU as the 5th 25 largest doctoral thesis producing Universities of India.
- AMU has been ranked 50th among the top 100 institutions of higher learning in BRICS nations of Brazil, Russia, India, China and South Africa.

Founder:	Sir Syed Ahmad Khan
Established:	MAO College in 1877 and became the University in 1920
First Head Master:	H.S.I. Siddon
First Visitor:	Mr. Mohendra Singh, Maharaja of Patiala
First Chancellor:	Her Highness Sultan Jahan Begum of Bhopal
First Vice Chancellor:	Mr. Mohammad Ali Mohammad Khan, Raja of Mahmoodabad
First Life Member of AMU Student Union:	Mahatma Gandhi

University Tarana (Aligarh Muslim University)

**Ye meraa chaman hai meraa chaman, maiN apne chaman kaa bulbul huuN
sarshaar-e-nigaah-e-nargis huuN, paa-bastaa-e-gesuu-sumbul huuN**

(chaman : garden; bulbul : nightingale; sarshaar : overflowing, soaked; nigaah : sight; nargis : flower, Narcissus; paa-bastaa : embedded; gesuu : tresses; sumbul : a plant of sweet odor)

**ye meraa chaman hai meraa chaman, maiN apne chaman ka bulbul huuN
jo taaq-e-haram meN roshan hai, vo shamaa yahaan bhii jaltii hai
is dasht ke goshe-goshe se, ek juu-e-hayaat ubaltii hai
ye dasht-e-junuuN diivaanoN kaa, ye bazm-e-vafaa parvaanoN kii
ye shahr-e-tarab ruumaanoN kaa, ye Khuld-e-bariiN armaanoN kii
fitrat ne sikhaii hai ham ko, uftaad yahaan parvaaz yahaan
gaaye haiN vafaa ke giit yahaan, chheRaa hai junuuN kaa saaz yahaan**

(taaQ-e-haram : vault in the sacred territory of Mecca; roshan : glowing; shamaa : flame; dasht : wilderness, desert; goshaa : corner; juu-e-hayaat : stream of life; junuuN : frenzy; bazm : gathering; vafaa : faithfulness; shahr-e-tarab : city of mirth; Khuld-e-bariiN : sublime paradise; armaan : hopes; fitrat : nature; uftaad : beginning of life; parvaaz : flight; saaz : song on an instrument)

**ye meraa chaman hai meraa chaman, maiN apne chaman ka bulbul huuN
is bazm meN teGheN khenchiiN haiN, is bazm meN saGhar toRe haiN
is bazm meN aanKh bichaa'ii hai, is bazm meN dil tak joRe haiN
har shaam hai shaam-e-Misr yahaan, har shab hai shab-e-Sheeraz yahaan
hai saare jahaan kaa soz yahaan aur saare jahaan kaa saaz yahaan
zarraat kaa bosaa lene ko, sau baar jhukaa aakaash yahaan
Khud aankh se ham ne dekhii hai, baatil kii shikast-e-faash yahaan**

(teGh : swords; saGhar : goblets; shaam-e-Misr : evenings of Egypt; shab-e-Sheeraz : nights of Sheeraz, a famous city of Iran; soz : pain; zarraat : dust; bosaa : kiss; baatil : evil; shikast-e-faash : clear defeat)

**ye mera chaman hai mera chaman, main apne chaman ka bulbul hun
jo abr yahaan se uThThega, vo saare jahaan par barsegaa
har juu-e-ravaan par barsegaa, har koh-e-garaaN par barsegaa
har sard-o-saman par barsegaa, har dasht-o-daman par barsegaa
Khud apne chaman par barsegaa, GhairoN ke chaman par barsegaa
har shahr-e-tarab par garjegaa, har qasr-e-tarab par kaRkegaa**

(abr : cloud; juu-e-ravaan : flowing streams; koh-e-garaaN : big mountains; sard-o-saman : open and shelter; dasht-o-daman : wild and subdued; qasr-e-tarab : citadel of joy)

**ye abr hameshaa barsaa hai, ye abr hameshaa barsegaa ye abr hameshaa barsaa hai, ye abr hameshaa barsegaa
ye abr hameshaa barsaa hai, ye abr hameshaa barsegaa barsegaa, barsegaa, barsegaa.**

Asrarul Haq Majaz



Lens (c. 984)

Ibn al-Haytham's treatise established optical science.

The earlier lenses were made of circular pieces of rock crystal or semiprecious stone, such as beryl and quartz, which were ground and polished so that they produced a magnified image when looked through. The oldest known lens artifact was one made of rock crystal dating from around 640 B.C.E. and excavated in Nineveh, near the modern city of Mosul, Iraq. The most common form was circular and thicker in the middle than around the edge, and having both its front and back surfaces the same shape.

The modern convex lens developed from the ancient Greek burning glass. Here a spherical vase of water would be used to concentrate the rays of the sun onto a small area, which heated up. The heat was used to ignite fires in temples or to cauterized wounds.

The Iraqi mathematician and optics engineer Ibn Sahl (c. 940-1000) wrote the treatise *On Burning Mirrors and Lenses* (984) in which he set out his understanding of how curved mirrors and lenses bend and focus light, using what is now known as Snell's law to calculate the shape of lenses. But the Iraqi Ibn al Haytham (965-1039), also known as Alhazen, is regarded as "the father of optics" for his treatise, the *Book of Optics*, (1011-1021), in which he proved that rays of light travel in straight lines, explained how the lens in the human eye forms an image on the retina, and described experiments with a pin hole camera.

In the thirteenth century convex lenses were used in spectacles to correct farsightedness. The use of concave lenses, which disperse the light as opposed to concentrating it, to correct for nearsightedness, came in the early fifteenth century. **DH**

GLASS, TELESCOPE, MICROSCOPE, SPECTACLES, BIFOCALS, EYE TEST, SPECTROSCOPE, CONTACT LENSES.



DEPARTMENT OF ILMUL ADVIA

(Estd. 1972)

This department was established in 1972 as a Post Graduate Department of Ilmul Advia (Unani Pharmacology & Pharmaceutical Sciences) of Faculty of Unani Medicine, Ajmal Khan Tibbiya College & Hospital by Ministry of Health & F.W. Govt. of India and is fully funded and upgraded by UGC. The main objective of establishing the department was to uplift the educational and research standard among the Postgraduates as well as to pave the ground for the availability of the better qualified teachers, research scholars for the pharmaceuticals of Unani Medicine. It is the first Institution of its kind in India and abroad which is associated with Interdisciplinary Research Work on Unani drugs and formulations. The department is an integrated complex which carries out teaching and multi disciplinary research activities on the system with the help and application of modern chemical, pharmaceutical and pharmacological sciences. This department offers P.G. course M.D. (Doctor of Medicine) in Ilmul Advia (Unani Pharmacology & Pharmaceutical Sciences).

The Scientific Research work on Unani Drugs and its formulations are studying regularly by PG students under the supervision of Pharmacologist (MBBS, M.D), Pharmacognist (Ph.D-Botany) and Medicinal Chemist (Ph.D-Chemistry) along with experts of Ilmul Advia (BUMS, M.D). Therefore, this department is a prime institution of India where Research on Unani drugs has been performing on scientific guidelines and authenticity. And Thrust Area in Ilmul Advia as identified by UGC are: Pharmacology, Pharmacognosy and Standardization of Unani Drugs and that is why the Department received DRS-I Programme under SAP-II of UGC.

There are various laboratories equipped with sophisticated instruments like Fully Automated Langendorff System for Cardio-Vascular Study, B.P. recording Modern, Isolated Tissue Organ Bath used with computerized Modern Data Acquisition System, ELISA Reader & Washer, PCR, Gel Doc, Laminar Air flow, BOD Incubator, Autoclave, Digital Colony Counter, Deep Freezer (-80°C), Cooling Micro-Centrifuge, UV-Vis Spectrophotometer, Refractometer, HPLC, Microtome, Stability Study Chamber, Centrifuge etc. along with the staff which comprises the experts of Unani Tibb and modern Allied sciences.

During the last 40 years the department has made significant contribution towards the research work on Unani drugs as well as its formulation.

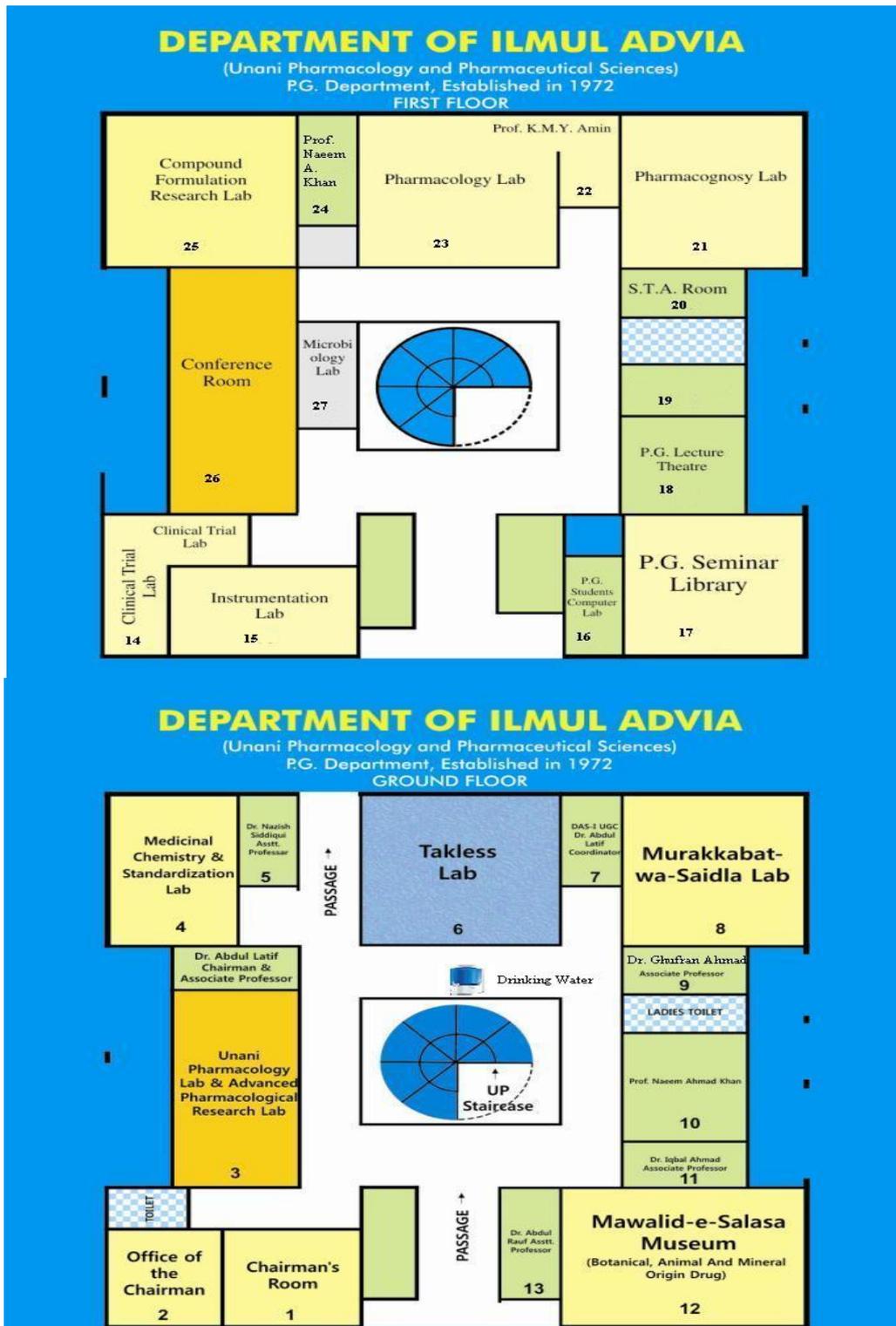
Various research projects funded by the Department of AYUSH, Ministry of Health & Family Welfare, Govt. of India and DRS programme under (SAP-II) of UGC are going on in the department. Teachers of the department have participated in various International & National conferences and presented their papers in the conferences in India as well as abroad such as Germany, Turkey, China & Uzbekistan etc. during the last five years.

The departmental thrust areas are Antimicrobial studies, Experimental Pharmacology, Nephrotoxicity, Hepatotoxicity, Anti-inflammatory, Anti-parkinson activity, CNS activity Anti-oxidant activity etc., Evaluation of Pharmacopoeial Compound Formulation, SOPs, Standardization & Quality Control of Unani Compound Formulations, Evaluation by elimination of Hepatitis B & clinical studies on various disease.



Teaching and Non-teaching Staff of Department of Ilmul Advia

LAYOUT OF THE DEPARTMENT OF ILMUL ADVIA



RESEARCH LABORATORIES OF THE DEPARTMENT

- 1. Compound Formulation Research Lab**
- 2. Murakkabat-wa-Saidla Lab**
- 3. Taklees Lab**
- 4. Unani Pharmacology & Advance Research Pharmacology Lab**
- 5. Mawalid-e-Salasa Museum**
- 6. Pharmacology Lab**
- 7. Clinical Trial Lab**
- 8. Pharmacognosy lab**
- 9. Central Instrumentation lab**
- 10. Medicinal Chemistry Lab**
- 11. Microbiology**
- 12. Computer Lab**
- 13. Seminar Library**
- 14. Animal House**

NOTABLE ALUMNI OF THE DEPARTMENT

Padam Shri Hkm. Syed Zillur Rahman

President
Ibne Sina Academy
Tijara House, Dodhpur
Aligarh.

Dr. Mufti Tahir

M.D. (Ilmul Advia)
Ex-Director
Department of ISM, Govt. of J&K
Srinagar (J&K)

Prof. Wahabur Rahman

M.D. (Ilmul Advia)
Ex-H.O.D.
Department of Ilmul Advia
Govt. Nizamia Tibbi College
Hyderabad

Prof. Ehteshamul Haque Quraishi

M.D. (Ilmul Advia)
Ex-Principal
State Takmeel-ut-Tibb College, Lucknow

Prof. Irshad Ahmad

M.D. (Ilmul Advia)
Ex-Principal
Ibn-e-Sina Tibbiya College
Azamgarh

Dr. Mushtaq Ahmad

M.D. (Ilmul Advia)
Unani Chair
University of Cape town, South Africa
Ex-Director, Central Council Institute of
Unani Medicine, (Govt. of India),
Hyderabad.

Prof. S. Maudood Ashraf

M.D. (Ilmul Advia)
Ex-Dean
Faculty of Unani Medicine
A.M.U., Aligarh

Dr. Syed Jaleel Husain

M.D. (Ilmul Advia)
Ex-Director
Central Council Institute of Unani
Medicine
(Govt. of India), Hyderabad

Prof. Shahid Akbar

M.D. (Ilmul Advia)
Former Chairman and Professor
Department of Pharmacology &
Toxicology
Qassim University, Saudi Arabia, &
Former Professor of Pharmacology
Medical University of the Americas
Nevis, West Indies

Prof. Shakil Ahmad Tamanna

M.D. (Ilmul Advia)
Faculty of Medicine (Unani)
Hamdard University, New Delhi

Prof. M.A. Jafri

M.D. (Ilmul Advia)
Dean, Faculty of Medicine (Unani)
Jamia Hamdard, New Delhi
& Ex-Director , NIUM, Bangalore

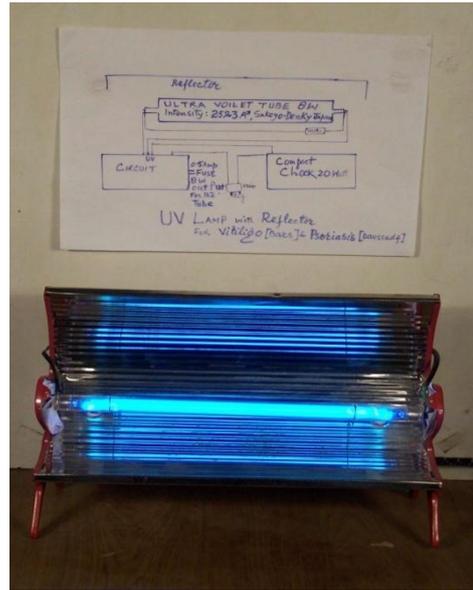
Dr. Afsar Ali

M.D. (Ilmul Advia)
IAS Allied (Batch 2011)
Patna, Bihar

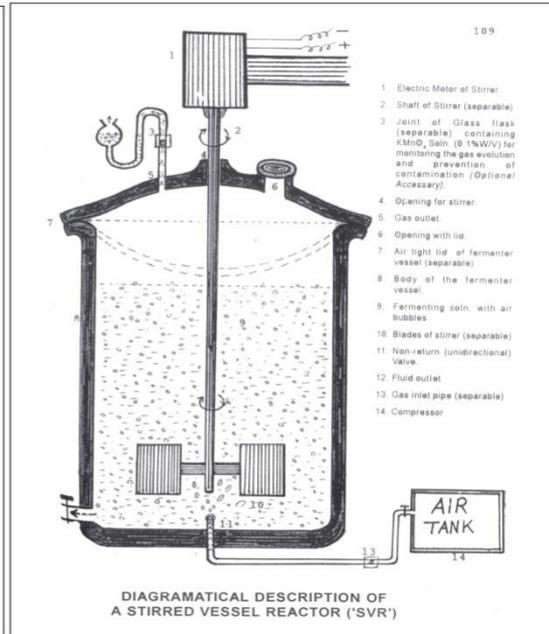
**Specialized & Innovative Research Work Done by the Faculty Member of
Department of Ilmu Advia**



Model Designed on Anasir, Akhlat wa Mizaj:
A teaching aid material “Model on Anasir, Akhlat wa Mizaj” designed by **Dr. Abdul Latif** being used in P.G. Department of Ilmu Advia, A. K. Tibbiya College, A.M.U. Aligarh.



Designed an instrument:
UV Lamp comprising of UV-C light for the treatment of vitiligo and psoriasis. (Designed by **Dr. Abdul Latif**).

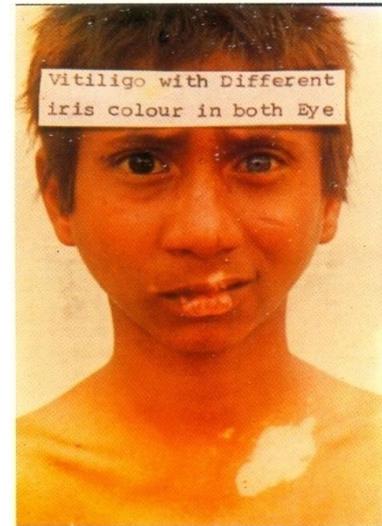


Instrument for the preparation of Nabeez [Fermented Dosage Forms]:
Nabeez is a special dosage form of medicinal and / or nutritional liquid preparation obtained by the fermentation of sweet aqueous solution of various food grains, fruits and medicinal ingredients. Guided for thesis work on Scientific Evaluation of Nabeez by Dr. Abdul Latif

Latif-Sukul Syndrome

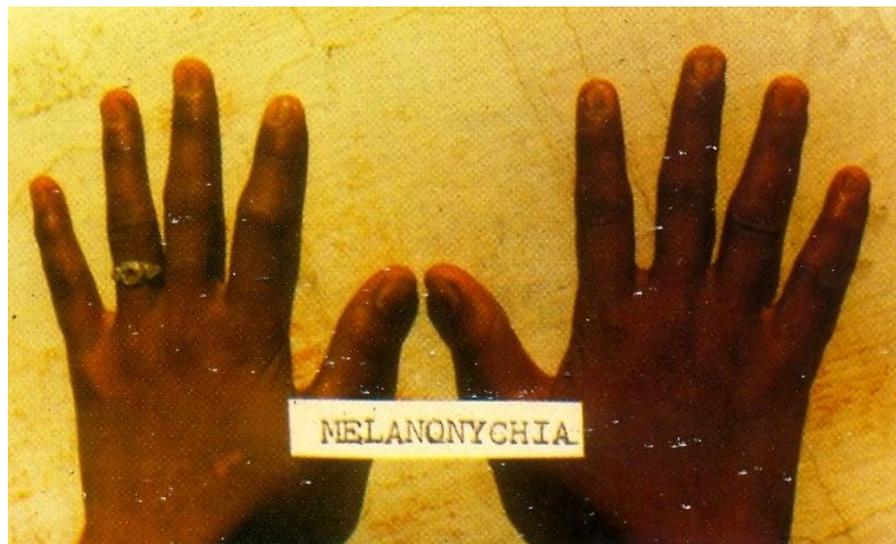
(*Iris heterochromic vitiligo -A syndrome*):

This is the first discerned case of its kind in the Asia, reported and coined by Dr. Abdul Latif. It is a rare Autosomal dominant congenital disease. This syndrome indicates that vitiligo or such pigmentary disease may be hereditary and genetic in nature and not to say acquired only. Ophthalmologist Prof. R.R. Sukul is also involved in this study. It is also presented in IX Biennial Conference of Dermatology, Lahore (Pakistan) in 1997

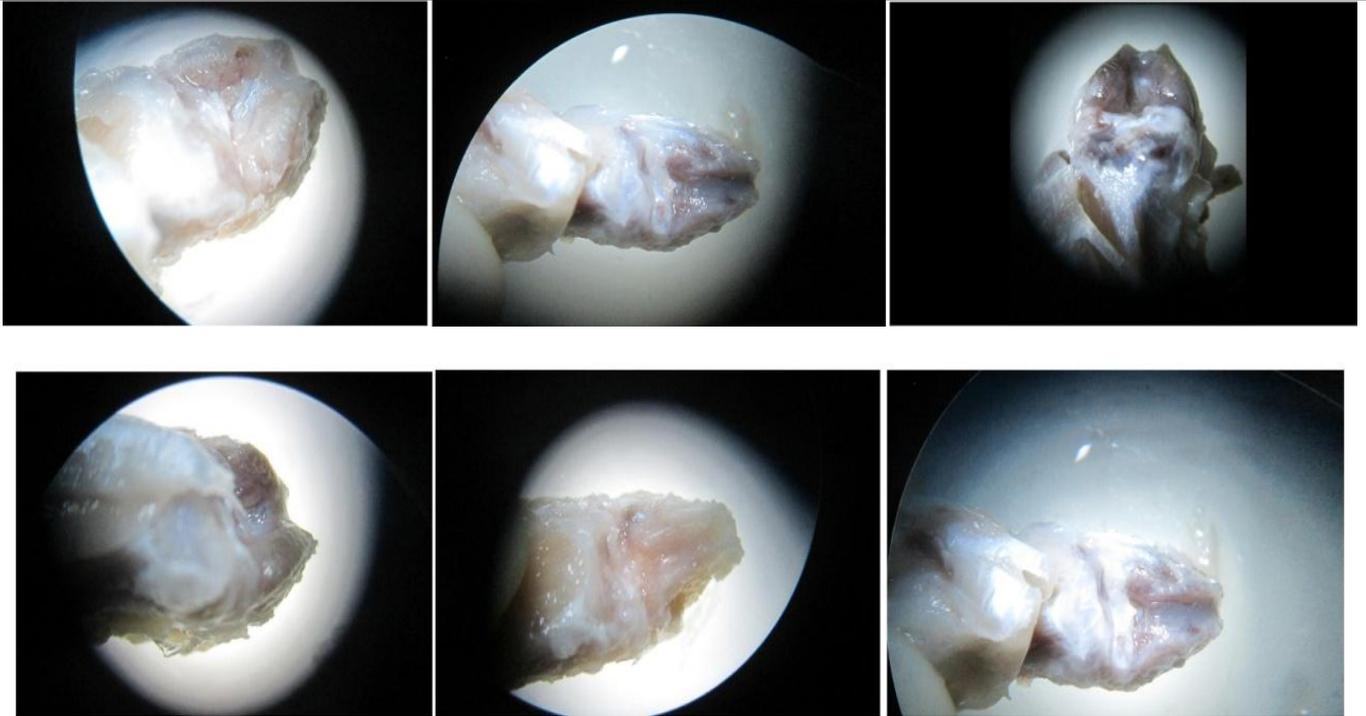


Melanonychia (Nail Pigmentation)

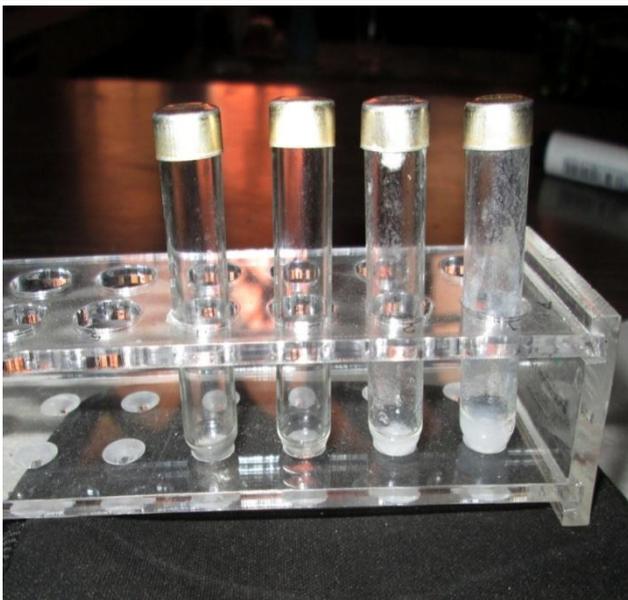
This is the first case reported as a rare unwanted effect of Atrilal (*Ammi majos* Linn.) In reference to the treatment of Vitiligo reported by Dr. Abdul Latif. It is also presented in XII world Dermatology Congress



Specific Animal Models for Osteo arthritis (MIA induced) and Gout (MSU induced) Done Under the Supervision of Prof. Kr. M. Y. Amin)



Gross Pathological Change in MIA induced Osteoarthritis in Rats

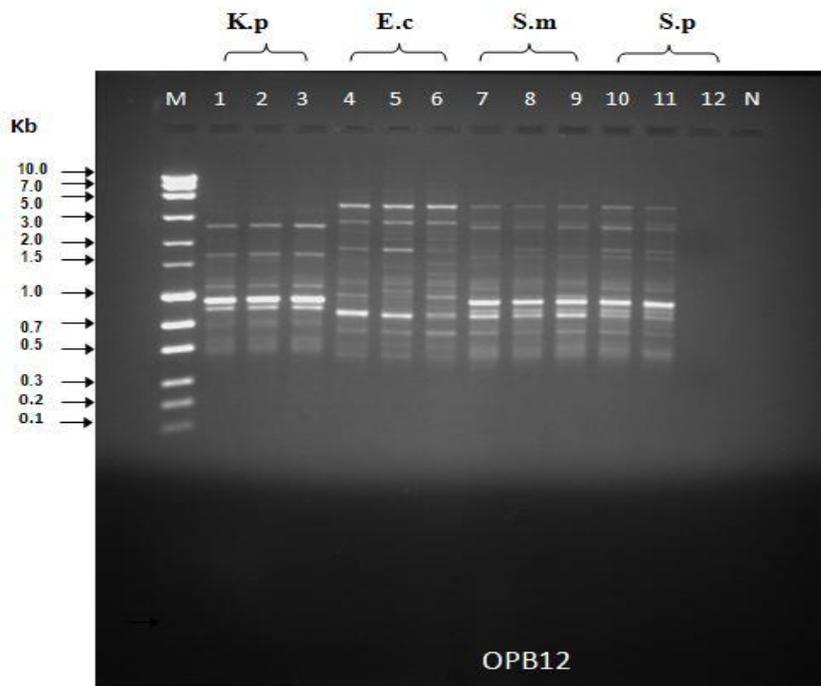
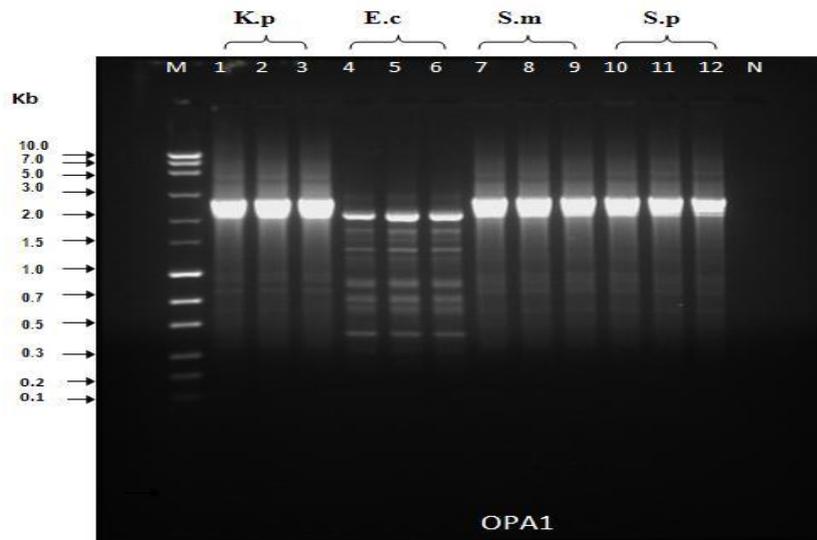


Limulus Amoebocyte Lysate (LAL) Test for endotoxin absence in MSU sample



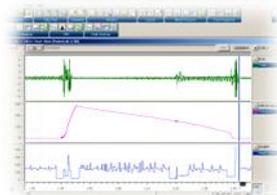
Administration of MSU Crystals in Ankle Joint of Rat

**Genetic Analysis of Pathogenic Bacterial Strains using RAPD-PCR
(Under the Supervision of Dr. Abdul Latif)**

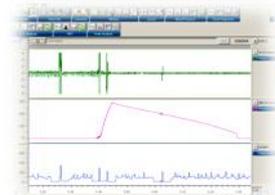


RAPD profiling of two species of Gram negative bacterial strains *Klebsella pneumoniae* (K.p) and *Escherichia coli* (E.c) and two species of Gram positive strains *Streptococcus mutans* (S.m) and *Streptococcus pyrogenes* (S.p) amplified by various primers

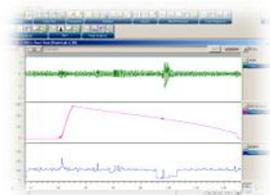
Non-Invasive Blood Pressure Studies using Data Acquisition System (Under the Supervision of Dr. Ghufran Ahmad)



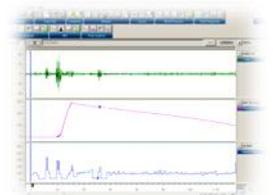
NIBP graph of a Negative control rat showing Initial SBP on 1st day



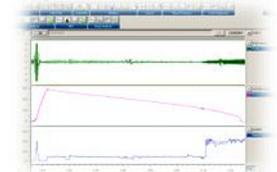
NIBP graph of a Negative control rat showing rise in SBP on 1st day



NIBP graph of a Negative control rat showing Initial SBP on 5th day



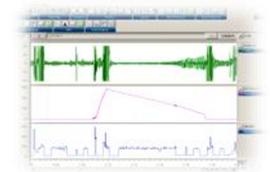
NIBP graph of a Negative control rat showing rise in SBP on 5th day



NIBP graph of a Standard group rat showing Initial SBP on 1st day



NIBP graph of a Standard group rat showing rise in SBP on 1st day



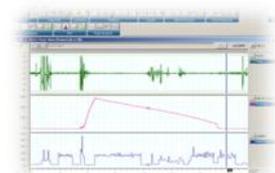
NIBP graph of a Standard group rat showing Initial SBP on 5th day



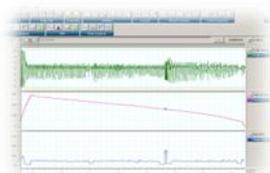
NIBP graph of a Standard group rat showing rise in SBP on 5th day



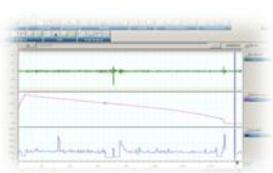
NIBP graph of a Test group (low dose) rat showing Initial SBP on 1st day



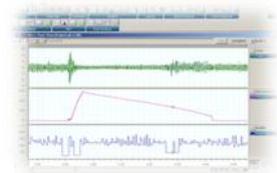
NIBP graph of a Test group (low dose) rat showing rise in SBP on 1st day



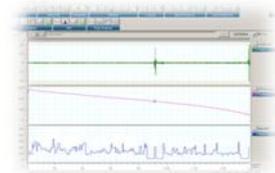
NIBP graph of a Test group (low dose) rat showing Initial SBP on 5th day



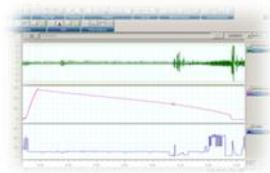
NIBP graph of a Test group (low dose) rat showing rise in SBP on 5th day



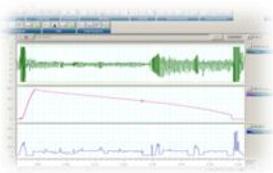
NIBP graph of a Test group (high dose) rat showing Initial SBP on 1st day



NIBP graph of a Test group (high dose) rat showing rise in SBP on 1st day



NIBP graph of a Test group (high dose) rat showing Initial SBP on 5th day



NIBP graph of a Test group (high dose) rat showing rise in SBP on 5th day

DRS PROGRAMME (UGC) AND ON GOING RESEARCH PROJECTS OF THE DEPARTMENT

Thrust Areas as identified by UGC (DRS-I) Pharmacology, Pharmacognosy and Standardization of Unani Drugs

Funding Agency	:	University Grant Commission
Duration	:	2011-2016
Funding Amount	:	Rs. 47 Lakh + Project Fellow
Co-ordinator	:	Dr. Abdul Latif
Project Fellow	:	Dr. Sumbul Rehman

Project Title: [III Phase]

**Study of some Unani Compound Drugs in experimentally-induced
Hepatitis like condition with an aim to explore their protective, curative
and regenerative potential**

Funding Agency	:	Department of AYUSH, Ministry of Health & Family Welfare, Govt. of India, New Delhi
Funding Amount	:	Rs. 21 Lacs
Principal Investigator	:	Prof. Hkm. Naeem A Khan

Project Title: Randomized Controlled Clinical Trial of Unani formulation in Chloasma/Melasma

Funding Agency	:	CCRUM, Deptt. of AYUSH Ministry of Health & Family Welfare Govt. of India, New Delhi
Funding Amount	:	Rs. 28 Lakh
Principal Investigator	:	Dr. Abdul Latif

Collaborative Research Projects of the Department of Ilmul Advia with other Departments of University

Project Title:

Editing, Translation and Chapterization of Al-Qanoon Fit-Tibb by Bu Ali Husain Ibn-e-Sina (Urdu Translation by Kintoori)

Funding Agency : CCRUM D/o of AYUSH Ministry of Health & Family Welfare Govt. of India, New Delhi
Funding Amount : Rs. 20 Lacs
Principal Investigator : Prof. Khaliduzzaman, D/o Kulliyat, F/o Unani Medicine, AMU, Aligarh
Co Investigator : Dr. Iqbal A Qasmi, Deptt. of Ilmul Advia

Project Title:

Genotyping of Unani System Based Temperament (Mizaj) by RAPD DNA fingerprinting

Funding Agency : CCRUM D/o of AYUSH Ministry of Health & Family Welfare Govt. of India, New Delhi
Funding Amount : Rs. 28 Lakh
Principal Investigator : Prof. Iqbal Parwez, D/o Zoology, F/o Life Science, AMU, Aligarh
Co Investigator : Dr. Abdul Latif, Deptt. of Ilmul Advia

Project Title:

Standardization of Pharmacopoeial Standards of Unani Drug of Mineral Origin

Funding Agency : CCRUM Deptt. of AYUSH Ministry of Health & Family Welfare Govt. of India, New Delhi
Funding Amount : Rs.30 Lakh
Principal Investigator : Dr. M. Shamim Khan, Deptt. of Geology, Faculty of Science, AMU, Aligarh
Co Investigator : Dr. Abdul Latif, Deptt. of Ilmul Advia

THESES
DEPARTMENT OF ILMUL ADVIA
A.M.U., ALIGARH

S. No.	Name Of Student	Title	Supervisor/ Co-Supervisor	Year
1	Khan Habibur Rahman	Tibb-E-Unani Main Hajariyat-Ka-Istimal Aur Unke Munafe	Prof. S.Z. Rahman / Dr. A.Q. Khan	1975
2	Husain Syed Jaleel	Screening Of Some Unani Cardiotonic Drugs	Dr. M. Tariq / Dr. M. Asif / S. Ayub Ali	1975
3	Mohd Zafarullah	Pharmacology And Pharmacognosy Of Some Anti-Inflammatory Unani Drugs	Prof. S.H. Afaq / Dr. M. Tariq /A.Q. Khan	1975
4	Tahir Mohd Mufti	Qarabadeen Azam-Ke-Imtiyazat Aur Uske Martabe Ka Taiuun	Prof. S.Z. Rahman	1975
5	Najmul Hasan	An Critical Approach To Substitutes Of Unani Drugs	Dr. S. Ayub Ali	1975
6	Khan Mohd Rafi	Antifertility Studies Of Some Unani Medicinal Plant	Dr. M. Tariq / Prof. S.H. Afaq /Dr. M. Asif	1975
7	S.Mauddod Ashraf	Contribution Of Iben-E-Baitar With Special Reference To His Jamaikul Mufredat	Prof. S.Z. Rahman	1975
8	Q.Ehteshmaul Haque	Unisvin Sadi Ke Hindustan Main Unani Ilmul Advia Ki Raftar-E-Taraqqi	Prof. S.Z. Rahman	1975
9	Afsar Jahan	Chemical,Biochemical And Biological Standardization Of Majoon-E-Flasfa	Dr. M. Asif / Dr. M. Tariq / Dr. M. Rafiquddin	1975
10	Masrroor Jahan	Chemical,Biochemical And Biological Standardization Of Khamira Abresham Hakim Arshadwala	Dr. M. Asif / Dr. M. Tariq / Dr. M. Rafiquddin	1976
11	Qadri Syed Karimullah	Chemical And Biological Standardization Of Dawa-UI-Misk Motadil	Dr. M. Asif / Dr. M. Tariq / M. Rafiquddin	1977
12	S. Rafatullah	A Study Of Pharmacology And Pharmacognosy Of Ushba	Dr. M. Tariq / Prof. S.H. Afaq / Dr.M. Asif	1977
13	Wahabur Rahman	Tukhme-Halyun Ki Mutanaza Haisiat Aur Tibbi Khawas	Prof. S.Z. Rahman	1977
14	Masoodi Abdul Rasheed	Pharmacological And Pharmacognostical Studies Of <i>Myrtus communis</i> Linn	Dr. M. Tariq / Prof. S.H. Afaq	1979
15	Mushtaq Ahmad	Pharmacological Screening Of Udesaleeb (<i>Paeonia emodi</i> Linn) - An Antiepileptic Unani Drug	Dr. M. Tariq / Prof. S.H. Afaq /Dr. M. Asif / Dr. M. Rafiquddin	1979
16	Khan Abu Bakar	Phytochemical And Pharmacological Studies Of Jadwar (Delphinium Denudatum Wall)	Dr. M. Tariq / Prof. S.H. Afaq / Dr. S. Ayub Ali / Dr. M. Asif	1979
17	Irshad Ahmad	Tukhm-E-Rehan-Ki-Mutanaza Haisiat Aur Uska Tahqiqi Mutala	Prof. S.Z. Rahman / Dr. A.Q. Khan	1981
18	Mohd Ismail	Dawa-Ke-Takleesi Asrat	Prof. S.Z. Rahman / Dr. M. Rafiquddin	1981
19	Rizvi S.Sarwar Sultan	Khaksi Ke Mutanaza Haisyat Aur Tibbi Khawas	Prof. S.Z. Rahman	1981

20	Shahid Akbar	Phytochemical And Pharmacological Studies On Behman-E-Surkh (<i>Salvia haematodes</i> Wall)	Dr. M. Tariq / Prof. S.H. Afaq / Dr.M. Asif / Dr. S. Ayub Ali	1981
21	Khan Zubair Ahmad	Pharmacognostical Studies Of Some Unani Medicinal Plant	Prof. S.H. Afaq / Dr. M. Asif	1982
22	Tamanna Shakeel Ahmad	Chemical Studies Of Jadwar (<i>Delphinium denudatum</i> Wall) With Special Reference To Standardization	Dr. M. Asif	1982
23	Ansari Anis Ahmad	Pharmacological Study Of Irsa (<i>Iris ensata</i>)	Dr. M. Asif	1982
24	Khan Latafat Ali	Chand Unani Advia Ka Jadeed Science Ki Roshni Mein Mutala	Dr. Abdul Qavi Khan / Prof. S.H. Afaq	1982
25	Ansari Abdullah	A Study Of Therapeutic And Pathophysiological Role Of Trace Elements-Kushta Jast	Dr. M. Asif / Prof. S.H. Afaq	1982
26	Khan Mohd Reshad	Jawarish Kamooni Aur Uske Ajza Ke Tahqeeq	Dr. M. Rafiquddin / Dr. S. Ayub Ali	1982
27	Zaidi Iqtadarul Hasan	Tibbe-Unani Mein Tiryag-O-Sumoom Ka Mutalea	Dr. S. Ayub Ali	1982
28	Saedi S.M. Kazim Anwar	Determination Of The Morphology And Identification Of Shooneez (<i>Nigella -sativa</i> Linn) Asaroon (<i>Valeriana wallichii</i>) And-Ud-E-Saleeb (<i>Paeonia officinalis</i> Linn)	Dr. S. Ayub Ali	1982
29	Afridi Mohd Iqbal	Pharmacognostical And Controversial Studies On Tukhm-E-Kasoos (<i>Cuscuta reflexa</i>)	Dr. S. Ayub Ali	1982
30	Kashfadduja	Hypoglycaemic Effect Of Some Unani Drugs	Prof. H.M. Taiyab	1983
31	Ansari Kalim Ahmad	Therapeutic Evaluation Of A Combination Of Atees, Shingraf And Inderjav-Talkh In Intestinal Amoebiasis	Prof. H.M. Taiyab	1983
32	Mehboob-Un-Nisa	Study Of Aftimun -A - Unani Herbal Drug On Chemically Induced Papillomas And Carcinomas Of Skin And Uterine Cervix	Prof. S.H. Afaq	1983
33	Siddiqui M.Tariq Akram	Physico - Chemical And Pharmacological Studies On Vaj (<i>Acorus calamus</i> Linn) With Special Reference To Standardization.	Dr. M. Asif	1983
34	Abdul Latif	Pharmacognostical And Pharmacological Studies On Hab-E-Qil Qil (<i>Cardiospermum halicacabum</i> Linn. Seed) With Special Reference To Standardization	Prof. S.H. Afaq	1983
35	M.M.H.Siddqui	Pharmacognostical And Phyto-Chemical Studies Of Kundur (<i>Boswellia serrata</i> Roxb)	Prof. S.H. Afaq / Dr. M. Asif	1983
36	Khan Naeem Ahmad	A Study Of Some Of The Unestablished And Abandoned Drugs Of Unani Repository	Prof. S.Z. Rahman	1983
37	Tajuddin	Scientific Evaluation Of Bozidan : A Herbal Drug	Prof. M. Taiyab	1983
38	Iqbal Ahmad	Phytochemical Evaluation Of Irsa And Arusa And Their Clinical Studies On Zeequn-Nafs-E-Nazli	Dr. S. Ayub Ali / Prof. Abu Bakr Khan	1984
39	Asif Sheikh Mohd	Physico-Chemical And Biological Studies Of <i>Apium graveolens</i> Linn.Root (Bekh-E-Karafs) With Special Reference To Standardization	Dr. M. Asif / Prof. K.M.Y. Amin	1984

40	Zafaruddin Ansari	Pharmacognostical Studies Of Certain Unani Drugs Used As General Tonic	Prof. S.H. Afaq / Dr. R.A. Khan	1984
41	Abdul Mannan	Physico Chemical And Pharmacological Studies Of Bisfaij (<i>Polypodium vulgare</i> Linn)	Dr. M. Asif / Dr. R.A. Khan	1984
42	Siddiqui Parvez Ahmad	Therapeutic Evaluation Of Combination Of Zoofa And Berg Badranjboya In Zeequn Nafas-E-Nazle	Prof. S.Z. Rahman	1985
43	Naqvi S. Iftikhar Ahmad	Therapeutic Evaluation Of An Unani Harbal Drug Afsanteen (<i>Artemisia absinthium</i> Linn) In Hepetitis (Varm-E-Kabid)	Prof. S.Z. Rahman / Dr. S. Jaleel Husain	1985
44	Mohd Afroz	Comparative Clinical Study Of Qanbeel (<i>Mallotus philippinensis</i> Muell. Arg) And Tetramisole In Deedan-E-Ama (Helminthiasis)	Prof. S.Z. Rahman / Prof. S. Maudood Ashraf	1985
45	Naimuddin	Clinical Studies Of Aslussus (<i>Glycyrrhiza glabra</i> Linn. Root) In Peptic Ulcer And Hyperacidity	Prof. S.Z. Rahman / Dr. S. Jalil Husain	1985
46	Ansari Abdul Aziz	Clinical Study Of Post-E-Bekh-E-Madar (<i>Calotropis procera</i> R.Br.) & Marorephali (<i>Helicteres isora</i> Linn) In Zaheer-E-Amoebai (Intestinal Amoebiasis)	Dr. M. Rafiquddin / Prof. A.A. Ansari	1985
47	Jafri Mustahsan Ali	Scientific Evaluation Of Lisanul Asafir (<i>Wrightia tinctoria</i> Br.) : A Unani Herbal Drugs	Dr. M. Jafri / Prof. K.M.Y. Amin	1985
48	Shamim Ahmad	Clinical Trial Of Ustukhudoos (<i>Lavandula stoechas</i> Linn) In Chronic Sinusitis.	Dr. S. Ayub Ali	1985
49	Amin Malik Mohd Wamiq	Pharmacognostical And Phytochemical Studies Of Iklii-Ui-Malik (<i>Astragalus Haemosus</i> Linn)	Prof. S.H. Afaq	1985
50	Nuzhat Anwar	Bekh-E-Kasni : Standardization Of Root Of <i>Chicorium Intybus</i> Linn	Dr. M. Asif	1985
51	Islamuddin	Arqu-E-Maullahm Ki Tarkib Ka Tahqiqi Mutala (Scientific Study On Arq Ma Ullah M-A Compound Unani Formulation)	Dr. M. Rafiquddin	1985
52	Khan M. Khursheed	Therapeutic Evaluation Of Beikh-E-Anjabar (<i>Polygonum viviparum</i> Linn) As Habis-E-Dam (Haemo-Styptic)	Dr. S. Ayub Ali / Prof. M. Ashraf	1985
53	M. Mohsain	Therapeutic Evaluation Of Satawar (<i>Asparagus racemosus</i> Wild) On Jaryan (Spermatorrhoea)	Prof. S.Z. Rahman	1985
54	Nizamuddin P. Zaheeruddin	Clinical Trial On Malaria With A Compound Of Sat-E-Gilo Phitkari And Kushta-E-Gaodanti	Prof. S.Z. Rahman / Dr. M. Rafiquddin	1986
55	Azhar Hasan	Anti-Hepatotoxic Action Of Gul-E-Ghafis (<i>Agrimonia eupatoria</i> Linn.Flower) And Gul-E-Tisu (<i>Butea frondosa</i> Roxb Flower)	Prof. M. Taiyab / Prof. K.M.Y. Amin	1986
56	Ehsanullah	Scientific Evaluation Of Zarambad With Special Reference To Its Biological Activity	Dr. M. Asif / Prof. K.M.Y. Amin	1986
57	Ansari Mohd Hussain	Clinical Trials On Intestinal Worms With A Compound Of Elwa, Palas And Habbunnil	Dr. M. Rafiquddin / Dr. S. Ali Haider Jafri	1986
58	Ansari Mumtaz Hussain	Therapeutic Evaluation Of A Combination Of Seven Unani Drugs In Wajaul-Mafasil (Rheumatoid Arthritics)	Prof. M. Taiyab / Dr. M. Rafiquddin	1986

59	M.Idris	Neuro-Pharmacological Studies Of Kaiphah (<i>Myristica nagi</i> Thumb) Baboona (<i>Matricaria chamomilla</i> Linn) And Karanjwa (<i>Caesalpinia bonducella</i> Flem.)	Prof. M. Taiyab / Dr. M. Rafiquddin	1987
60	Mushtaq Ali	Scientific Evaluation Of Khamira Marwarid And Khamira Sadaf - A Comparative Study	Dr. M. Asif / Prof. K.M.Y. Amin	1988
61	Abdul Qayyum	Scientific Evaluation Of Certain Hypotensive Drugs	Dr. S. Ayub Ali / Dr. M. Mubashshir	1989
62	Khan Afsar Hussain	Clinical Trials Of Naushader, Ghi Kawar (Elwa)& Anjeer In Enlargement Of Spleen	Prof. S.Z. Rahman / Maudood Ashraf	1989
63	Hifzul Kabir	Scientific Evaluation Of Some Unani Drugs In Zeequnnafas Shobi (Bronchial Asthma)	Dr. S. Ayub Ali / Prof. N.A. Khan	1990
64	Ansari Israr Ahmad	A Scientific Study Of Some Unani Drugs Used In Waja-UI-Mufasil	Dr. M. Rafiquddin / Prof. K.M.Y. Amin	1990
65	Sohail Ahmad	The Effect Of <i>Mucana pruriens</i> On C.N.S. - A Pharmacological Study	Dr. M. Yaiyab / Prof. K.M.Y. Amin	1991
66	Ahmad M.Aftab	Scientific Appraisal Of Tadbire Advia (Detoxification Process) In Relation To Some Toxic Unani Drugs	Prof. S.Z. Rahman / Prof. Tajuddin	1991
67	Saleem M.Ambekar	Pharmacological Study Of Some Unani Drugs Used For Improving Sexual Functions	Prof. K.M.Y. Amin / Prof. N.A. Khan	1991
68	Afridi Rifat.M	Pharmacognostical Studies On Certain Unani Medicinal Plants	Prof. S.H. Afaq	1992
69	Ansari Shehla Qamar	Pharmacognostical And Pharmacological Studies Of Market Sample Of Suddab (Whole Plant)	Prof. S.H. Afaq	1992
70	Nizamuddin	Physico-Chemical Studies Of Beesh (<i>Aconitum napellus</i>) With Special Reference To Its Identity From Jadwar (<i>Delphinium denudatum</i> Wall)	Dr. M. Asif	1993
71	Khan M. Nafees	A Scientific Study Of Some Unani Drugs Used For Improving The Male Sexual Functions	Prof. S.Z. Rahman / Prof. K.M.Y. Amin / Prof. N.A. Khan	1993
72	Abdul Wadud	Pharmacognostical Study Of Some Unani Medicinal Plants	Prof. S.H. Afaq / Prof. Tajuddin	1994
73	Afzal Ahmad	A Scientific Study Of Biladur (<i>Semicarpus anacardium</i>) And Some Murakkabat (Compound Preparation)	Prof. S.Z. Rahman / Prof. K.M.Y. Amin / Prof. N.A. Khan	1994
74	Suhail Ahmad	Scientific Study Of Bisihri Booti (<i>Aerva Leneta</i>)	Prof. K.M.Y. Amin / Prof. S.H. Afaq / Prof. N.A. Khan	1994
75	Faridi M.Akbar	A Scientific Study Of Sheer-E-Zaqum (<i>Euphorbia Narifolia</i> Latex)	Prof. K.M.Y. Amin / Dr. M. Asif / Prof. N.A. Khan	1994
76	Tarique Ahsan	Standardization And Pharmacological Study Of Tiryag-E-Araba	Prof. S.Z. Rahman / Prof. K.M.Y. Amin / Prof. N.A. Khan	1995
77	Ghufran Ahmad	A Scientific Study Of Some Unani Tonic Drugs	Prof. K.M.Y. Amin / Prof. N.A. Khan / Prof. Tajuddin	1995
78	Jalis Ahmad	A Scientific Study Of Some Unani Contraceptive Drugs	Prof. K.M.Y. Amin / Prof. S.H. Afaq / Prof. N.A. Khan	1995

79	Mohd Taqui	Some Aspect Of Scientific Evaluation Of Khaksi (<i>Sisymbrium Irio</i>)	Prof. S.Z. Rahman / Prof. K.M.Y. Amin / Prof. N.A. Khan	1995
80	Naheed Parveen	Pharmacognostical And Pharmacological Aspects Of Some Unani Medicine	Prof. S.H. Afaq / Prof. K.M.Y. Amin / Prof. Tajuddin	1996
81	Shaheen Yasmin	Pharmacodynamic Study Of Some De-Addictive Unani Drugs	Prof. K.M.Y. Amin	1996
82	Shoeb Ahmad	An Experimental Study Of Anti Arthritic Metabolic And Cardio- Vascular Effect Of Majoon Seer Alvi Khan	Prof. N.A. Khan / Prof. K.M.Y. Amin	1996
83	Sadrul Huda	Phyto Chemical And Pharmacognostical Studies On Certain Unani Medicine	Prof. S.H. Afaq / Prof. Tajuddin	1996
84	Irshad Ahmad	Scientific Evaluation Of Majoon Suranjan - An Unani Formulation	Prof. N.A. Khan/ Prof. K.M.Y. Amin	1997
85	Ansar Ahmad	Clinical Pharmacology Of Some Unani Anti-Arthritic Drugs	Prof. K.M.Y. Amin / Prof. Maudood Ashraf	1997
86	Shamsul Islam	Scientific Study Of Jundbaidastar	Prof. S.Z. Rahman / Prof. Tajuddin / Prof. K.M.Y. Amin	1997
87	Usmani Mohd Imran	Clinical Study Of Majoon Seer Alvi Khan In Arthritis	Prof. N.A. Khan / Prof. Mukhtar Hakim / Prof. Tajuddin	1997
88	Qasmi Nafees Ahmad	A Scientific Study Of A Compound Unani Fromulation	Prof. K.M.Y. Amin / Prof. N.A. Khan / Prof. Maudood Ashraf	1998
89	Shamim Anwar	A Scientific Study Of Banadiqul - Buzoor-An Pharmacopeal Compound Formulation	Prof. N.A. Khan / Prof. K.M.Y. Amin	1998
90	Ashfaque Ahmad	A Pharmacological Study Of Some Unani Adaptogenic Drugs	Prof. K.M.Y. Amin / Dr. Abdul Latif	1998
91	M. Tajuddin	Scientific Evaluation Of Habb-E-Shifa -A Compound Unani Formulation	Prof. N.A. Khan / Prof. Tajuddin	1998
92	Kalimullah	Hypoglycaemic Activity And Standardization Of Some Unani Drugs	Prof. N.A. Khan / Dr. Inamuddin / Dr. Ghufran Ahmad	1999
93	Jafri S.G.Hader Shah	Scientific Evaluation Of Nabeez	Prof. S.Z. Rahman / Dr. Abdul Latif	1999
94	Laique Ahmad	Scientific Evaluation Of Safoof-E-Mohazzil : A Pharmacopeal Prepration	Prof. N.A. Khan / Dr. Ghufran Ahmad	1999
95	Saleem Akhtar	Topical Therapeutic Efficacy Of An Unani Formulation In Cream Base On The Cases Of Psoriasis (Daussadaf)	Prof. S.Z. Rahman / Dr. Abdul Latif / Dr. M. Tahseen	2000
96	Ghulamuddin Sofi	Scientific Evaluation Of Majoon-E-Falasafa	Prof. Tajuddin / Prof. N.A. Khan / Dr. Ghufran Ahmad	2000
97	Mairajul Haque	Comparative Pharmacological Study Of Shangraf & Al - Ahmar	Prof. N.A. Khan / Dr. Ghufran Ahmad	2000
98	M. Afzal	Nephroprotective Effects And Standardization Of	Prof. N.A. Khan /	2000

		Some Unani Compound Formulation	Dr. Iqbal Ahmad / Dr. Inamuddin	
99	Kehkashan Zainab	Scientific Validation Of Anti-Diabetic Activity Of Some Unani Drugs	Prof. S.Z. Rahman / Prof. Tajuddin / Dr. Abdul Latif	2001
100	Nasreen Jahan	Physico-Chemical Standardization And Gastric Effect Of A Unani Compound Formulation	Prof. S.H. Afaq / Prof. N.A. Khan / Dr. Ghufuran Ahmad	2001
101	Khan M. Aleem	Pharmacological Effect Of A Unani Compound Formulation In Acute Experimental Diarrhoea	Prof. N.A. Khan / Dr. Iqbal Ahmad / Dr. Ghufuran Ahmad	2001
102	Shamshad Ahmad	A Scientific Study Of Some Unani Aphrodisiacs	Prof. Tajuddin / Dr. Abdul Latif / Dr. Iqbal Ahmad	2001
103	Roohi Obaid	Therapeutic Efficacy Of A Unani Formulation (Paste) In Gingivitis	Prof. S.Z. Rahman / Prof. H.S. Hashmi / Dr. Abdul Latif	2002
104	Bilal Ahmad	A Pharmacological Study Of Sahanjana And Kasondi : Two Less Investigated Unani Drugs	Prof. N.A. Khan / Dr. Ghufuran Ahmad / Dr. Inamuddin	2002
105	Fakhre Alam	A Scientific Study Of A Unani Drugs Combination Comprising Potent But Less Investigated Anti-Hepatitis Agents	Prof. K.M.Y. Amin / Prof. N.A. Khan	2002
106	Yousuf Saleem	Studies And Estimation Of Iron Content In Unani Compound Formulation	Prof. Tajuddin / Prof. S.H. Afaq	2002
107	Abdul Rauf	Pharmacognostical Studies On Some Unani Herbal Cardiotonic Drugs In Reference To Ibne Sina's Advia -E-Qalbiya	Prof. S.H. Afaq / Dr. Abdul Latif	2003
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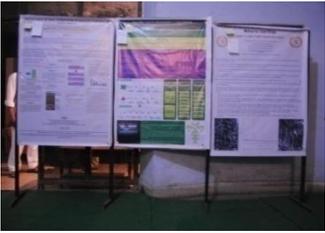
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Glimpses of First National Seminar of DRS-I, 23 March, 2013 Scope of Emerging Technologies in Unani Medicine



Contd...





REPORT SETUM-2013

**National Seminar “Scope of Emerging Technologies in Unani Medicine’ by DRS-I,
Department of Ilmul Advia, Aligarh Muslim University, Aligarh.**



A one day National Seminar on “Scope of Emerging Technologies in Unani Medicine” was organized by Department of Ilmul Advia under the auspices of DRS Programme of UGC in Co-ordinatorship of Dr. Abdul Latif in Faculty of Unani Medicine, Aligarh Muslim University, Aligarh on 23 March 2013.

The programme started at 7:30 a.m with the registration of the delegates along with two parallel Scientific Sessions and Poster Session in different Halls. It was followed by Inaugural Function at 11:30 a.m with packed audience and eminent Guests and Delegates of the Seminar.

The Inaugural function started with recitation of verses of Holy Quran, followed by the welcome address of the Chairman, Organizing Committee (SETUM-2013) and Coordinator DRS-I Programme: Dr. Abdul Latif explored the objectives of Seminar and Welcome the guests and delegates attending the Seminar. After that Prof. Naeem Ahmad Khan; Chairman, Department of Ilmul Advia, gave a brief introduction of the Department of Ilmul Advia. It was further followed by the address of Prof. Saud Ali Khan; Principal, Ajmal Khan Tibbiya College and presidential address by Prof. A.B. Khan; Dean, Faculty of Unani Medicine. The event was made memorable by felicitating the Guests of the Day, giving mementos to Chief Guests and Guest of Honour. The day was made remarkable with Golden words in the pages of history of Unani Medicine by giving a **life time achievement award** to Padma Shree Prof. H. S. Zillur Rahman, President Ibn Sina Academy, Aligarh on this occasion for his contribution and support to Unani Medicine & Department of Ilmul Advia. The event was auxiliary graced by the presence of illustrious Chief Guest: Dr. G.N. Qazi, Vice Chancellor Jamia Hamdard (Hamdard University) New Delhi

who gave a valuable scientific deliberation of where he put forward about the exploration of phyto-constituents qualitatively and quantitatively of a large number of Unani drugs and their importance in the New Drug Discovery, whereas the Guest of Honour: Prof. K. C. Singhal, Vice Chancellor, NIMS University, Jaipur (Rajasthan) directed the Unani Physicians to develop a deep understanding of latest technologies and follow this in the light of the basic concepts of Unani Medicine specifically the theory of Mizaj. The other Guest of Honour: *Padma Shree* Prof. (Hkm.) Syed Zillur Rahman, President Ibne Sina Academy, Aligarh appraised the occasion and said that the Seminar will provide an ideal platform for interaction and dissemination of information between different speakers. It was added by vote of thanks by Prof. S. H. Afaq, Dy. Co-ordinator, DRS-I and the function ended at the enthusiastic tone of AMU Tarana and National Anthem.

The inaugural function was preceded by Lunch and after that there were simultaneously four parallel Scientific Sessions in different times in two halls and a Post Lunch Poster Session till 6:00 p.m.

In this one day event more than a dozen invited lectures, more than 70 papers were presented in Oral and Poster Sessions by the faculty members, researchers and PG scholars of different institutes of Unani Medicine and other branches of Science. In total around 130 delegates from different cities of India attended this interesting, informative and outstanding talks and the whole day event organized in six Scientific Sessions and two Poster Session in different Halls.

Eminent speakers delivered their valuable talks on different issues related to identification, adulteration, standardization, quality control, SOPs, cultivation, preservation of Medicinal plants, experimental and clinical pharmacology, drug development etc.

The organizers envisaged a conveted theme for the Seminar and invited the best available resource person of Medical Science and cognate science so as to discuss the issues related to emerging technologies and their application in Unani Medicine as: Prof. K.K. Sharma (*D/o Pharmacology, Sharda University*), Prof. M. Z. Abdin (*F/o Science, Jamia Hamdard*), Prof. Mansoor A. Siddiqui (*D/o Botany*), Dr. S. Z. Rahman (*D/o Pharmacology*), Prof. Naeem Ahmad Khan (*D/o Ilmul Advia*) Dr. Asad Ullah Khan (*Interdisciplinary Biotechnology Unit*), Prof. Syed Alim Husain Naqvi (*D/o Applied Physics*), Dr. Sayyada Khatoon (*Pharmacognosy Division, NBRI, Lucknow*), Dr. V.K. Singh (*D/o AYUSH, New Delhi*), Dr. Yasir Hasan Siddiqui (*Section of Genetics, D/o Zoology*), Dr. M. Masroor Akhtar Khan (*D/o Botany*), Dr. M. Shamim Khan (*D/o Geology*).

The Seminar ended with a Valedictory Session conducted by Prof. K.M.Y. Amin and expert opinion of Prof. K.K. Sharma, Prof. M.A. Jafri, Prof. M.Z. Abdin, Dr. Abdul Latif, Prof. S.H. Afaq and Prof. N.A. Khan. Dr. Ghufran Ahmad summarized the overall deliberation collectively in the valedictory session and through light about the application of emerging technologies in Unani Medicine. It was said by the experts that it was one of the rare opportunities to attend very interesting, informative and outstanding talks in all programme. Most of the lectures were very lucid and elaborate and portrayed the existing state of affairs in respect of the new technologies and given an insight in to the judicious use of emerging technologies in the field of Unani medicine. Some of the new technologies entails enormous degree of technical complexities therefore we should use them cautiously but most of the emerging technologies can be used without any hesitation to improve the quality of drugs.

Glimpses of Workshop on *Pharmacognostical Awareness cum Training Programme on Cultivation of Unani Medicinal plants*, 20-21 April 2013



REPORT WORKSHOP-2013

Pharmacognostical Awareness cum Training Programme on Cultivation of Unani Medicinal plants, 20-21 April 2013



A two day Training Workshop cum field trip entitled “Pharmacognostical Awareness cum Field trip on Cultivation of Unani Medicinal Plants” was organized by DRS-I, Department of Ilmu Advia, Faculty of Unani Medicine, Aligarh Muslim University on 20-21 April, 2013. About 35 students from Under graduate (BUMS) and Post graduates (MD Unani) as well as some Research Fellows of Unani Medicine participated in this Training Programme. In this two day event, first day was kept for the lectures followed by the Practical Demonstration in Pharmacognosy Lab; the day was further made very informative with a trip on the same day to the University Botanical Garden on Qila (Aligarh fort). Second day i.e 21 April was a Field trip to Ghabana Tehsil Village Parai 20 Km from Aligarh for a demonstration of cultivation practices of some Unani medicinal plants & Crop on the field as Satavar (*Asparagus racemosus* L.), Kasni (*Cichorium intybus* L.) etc. and the participants also get acquainted with the information of specific techniques of post harvesting practice of Satavar.

The training workshop started at 8:30 a.m. on 20 April, 2013 by Coordinator DRS-I Programme Dr. Abdul Latif, he explained about the objectives of organizing such Workshop, is to impart knowledge to Unani scholars “to make them attentive of the basic principles of Pharmacognosy, to help them identifying a unani drug, to identify about any pathogen attack on plants, to make them aware of GACP, GMP, GCP, GAP; awareness of WHO Guidelines and utilization of these guidelines in future”. The lectures were given by the well known Speakers of the respective field. First lecture was given by **Prof. Mansoor Ahmad Siddiqui** (*Department of Botany, Faculty of Life Science, AMU, Aligarh*) who gave a valuable scientific deliberation entitled “**Symptoms of Fungal pathogens on Some Medicinal plants**”, he put forward about the useful information for

identification of any pathogenic attack on medicinal plants. It was followed by lecture of **Dr. V. K. Singh** (*Ex. Deputy Director (Botany), CCRUM, Dept. of AYUSH, New Delhi*) entitled "**Awareness, Training and Cultivation of medicinal crops in Western Uttar Pradesh- A prerequisite for quality assurance of ISM drugs**". After that there was another very informative lecture on "**Pharmacognostical & Special Techniques of Cultivation of Medicinal Plants**" by **Prof. S. H. Afaq** (*Department of Ilmul Advia, AMU, Aligarh*) and the lectures ended by another very informative talk on "**Awareness of WHO Guidelines for Quality assurance of Unani Drugs**" by **Dr. Abdul Latif** (*Co-ordinator, DRS-I, Department of Ilmul Advia, AMU, Aligarh*) which imparted a valuable information on Quality Assurance & Quality Control of Herbal drugs, WHO Guidelines for Good Agriculture Cultivation Practices, Good Manufacturing Practices, etc. It was followed by a practical demonstration of identifying fungal pathogenic organism that infects plant material assisted by **Miss. Kavita Parihar** and **Miss. Bushra Rehman** Ph. D Scholars of Botany Department. Workshop material containing Printed material of the valuable information regarding Cultivation Practices of Medicinal plants, CD with live demonstration of harvesting practices was also provided to the participants..The Programme ended with the acknowledgement and vote of thanks to the Guest speakers and with the appreciating words by the Co-ordinator, DRS-I; Dr. Abdul Latif for the participants of the Workshop 'to ready themselves by performing best services for mankind and Tib'.

One Day Pre-Conference Workshop

On 26 November, 2014

Proficiency in Advanced Instrumental Method of Analysis

**In Collaboration with GenNEXT Lab Technologies Pvt. Ltd., New Delhi
(ISO Certified Company)**

At

Department of Ilmul Advia, Faculty of Unani Medicine, AMU, Aligarh

It includes Live Demonstration & Training of Microwave Digestion/ Extraction system; Handling of Portable Spectrophotometer, Multiparameter, Metalyzer Portable for detection of Heavy Metal, Aflatoxin, Pesticide in Medicinal Plants; Data Acquisition System in Experimental Pharmacology etc.

Scope of Certification, Participants of the Pre-Conference workshop will be benefitted with the lectures and the practical demonstration of various Lab instruments that will help them in their job career and better placement in Labs/Industries: Academic Labs, R & D/ GMP Companies, ASU Drug Manufacturing Companies etc.

Programs & Schedule

Pre-Conference Workshop:

Proficiency in Advanced Instrumental Methods of Analysis

8:00-9:00 a.m.	REGISTRATION
9:30-10:00 a.m	LECTURE
VENUE:	<i>Conference Room; Department of Ilmul Advia</i>
Prof. K.M.Y. Amin	Experimental Pharmacology
Dr. Nazish Siddiqui	Proficiency in Advanced Instrumental Method of Analysis
INSTRUMENTS DEMONSTRATION	
<i>Hall A</i> <i>Mawalide Salasa Museum:</i> <i>Department of Ilmul Advia</i>	<i>Hall B</i> <i>Pharmacognosy Lab:</i> <i>Department of Ilmul Advia</i>
<i>Instructor</i> Mr. P.C.Sharma	<i>Instructor</i> Mr. Shishir Pandey
Group A 10:00 a.m. - 1:00 p.m. Microwave Digestion/ Extraction system Portable Spectrphotometer Data Acquisition System (ADInstruments)	Group B 10:00 a.m. - 1:00 p.m. Genius XRF Metal Analyzer / Portable Metalyzer Digital Meter
1:00-2:00 p.m 1:40 p.m	LUNCH ZUHAR (DARUL SHIFA MOSQUE) D/o Ilmul Advia, A.K.T.C. CAMPUS
Group B 2:30-5:00 p.m Microwave Digestion/ Extraction system Portable Spectrphotometer Data Acquisition System (ADInstruments)	Group A 2:30-5:00 p.m Genius XRF Metal Analyzer / Portable Metalyzer Digital Meter
CERTIFICATE DISTRIBUTION	
HI- TEA	

PROGRAMME SCHEDULE

Second National Seminar on RELEVANCE OF MODERN METHODS OF STUDIES IN UNANI MEDICINE 27-28 Nov, 2014

FIRST DAY

27th November, 2014

INAUGURAL SESSION

HALL-A

(9:30 A.M - 11:30 A.M)

(COLLEGE AUDITORIUM)

TEA BREAK (11:30-12:00 P.M) A.K.T.C LAWN

SCIENTIFIC SESSION - 1

(12:00 P.M - 01:30 P.M)

HALL-A

(College Auditorium)

SCIENTIFIC SESSION - 2

(12:00 P.M - 01:30 P.M)

HALL-B

(Conference Room
D/o Ilmul Advia)

POSTER SESSION - 1

(12:00 P.M - 01:30 P.M)

HALL-C

(Library Seminar
D/o Ilmul Advia)

LUNCH (1:30 P.M – 2: 30 P.M) NEW GUEST HOUSE

SCIENTIFIC SESSION - 3

(2:30 P.M - 4:30 P.M)

HALL-A

(College Auditorium)

SCIENTIFIC SESSION - 4

(2:30 P.M - 4:30 P.M)

HALL-B

(Conference Room;D/o Ilmul Advia)

SCIENTIFIC SESSION - 5

(4:30 P.M - 5:30 P.M)

HALL-A

(College Auditorium)

SCIENTIFIC SESSION - 6

(4:30 P.M - 5:30 P.M)

HALL-B

(Conference Room;D/o Ilmul Advia)

TEA BREAK (5:30 P.M)

CULTURAL PROGRAMME

HALL-A

(6:30 P.M)

(COLLEGE AUDITORIUM)

DINNER		
National Seminar on RELEVANCE OF MODERN METHODS OF STUDIES IN UNANI MEDICINE 27-28 Nov, 2014		
SECOND DAY 28 NOVEMBER 2014		
SCIENTIFIC SESSION - 7 (9:00 A.M - 11:00 A.M) HALL-A (College Auditorium)	SCIENTIFIC SESSION - 8 (9:00 A.M - 11:00 A.M) HALL-B (Conference Room D/o Ilmul Advia)	POSTER SESSION - 2 (9:00 A.M - 11:00 A.M) HALL-C (Library Seminar D/o Ilmul Advia)
TEA BREAK (11:00-11:30 A.M) A.K.T.C LAWN		
SCIENTIFIC SESSION - 9 (11:30 A.M - 1:00 P.M) HALL-A (College Auditorium)	SCIENTIFIC SESSION - 10 (11:30 A.M - 1:00 P.M) HALL-B (Conference Room D/o Ilmul Advia)	POSTER SESSION - 3 (11:30 A.M - 1:00 P.M) HALL-C (Library Seminar D/o Ilmul Advia)
LUNCH (1:00 P.M – 2: 30 P.M) NEW GUEST HOUSE		
SCIENTIFIC SESSION - 11 (2:30 P.M - 4:30 P.M) HALL-A (College Auditorium)	SCIENTIFIC SESSION - 12 (2:30 P.M - 4:30 P.M) HALL-B (Conference Room;D/o Ilmul Advia)	
SCIENTIFIC SESSION - 13 (4:30 P.M - 5:30 P.M) HALL-A (College Auditorium)	SCIENTIFIC SESSION - 14 (4:30 P.M - 5:30 P.M) HALL-B (Conference Room;D/o Ilmul Advia)	
VALEDICTORY PROGRAMME HALL-A (5:30 P.M)		

(COLLEGE AUDITORIUM)

KEY NOTE ADDRESS

BY



Prof. K.C. Singhal
VICE CHANCELLOR
NIMS UNIVERSITY
JAIPUR, RAJASTHAN

Relevance of Modern Methods of Studies in Unani Medicine

Prof. (Dr.) K.C. Singhal

M.D., Ph.D. (Medicine), D. Sc., F.I.A.N., F.I.P.S., F.I.A.M.S.

Former Consultant WHO Center for International Drug Monitoring, Uppsala, Sweden

Mostly Indian people use drugs of Indian Systems of Medicine. Physicians of Ayurvedia, Unani and Sidha use drugs formulated from mainly plant sources. Other sources include mineral and animal. The Unani System of Medicine owes, as its name suggests, its origin to Greece. It was Greek Philosopher- Physician Hippocrates (460-377 BC) who freed medicine from the realm of superstition and magic, and gave it the status of science. The theoretical framework of Unani Medicine is based on his teachings. After him many Arab and Persian scholars including Tabari, Rhazes, Majoosi, Avacena and Jurjani enriched this system.

There is a clear distinction between modern medicine and drugs of Indian systems of medicine. The knowledge of ISM drugs stem from years of experience, observations, empiricism and intuition and has been handed down generations both through mouth and treatise. In our country drugs of ISM once formed the mainstay of treatment, but were relegated to background following colonization of the country by British during 19th century and first half of twentieth century. The gap was further widened by systemic and scientific study of evidence based analytical western medicine as opposed to Indian Systems of Medicine which had a holistic approach providing principles of healthy living with eco-friendly practices, therapies and remedies from natural raw materials mainly from plants.

The drugs used in Unani and other systems of Indian medicine were collected, stored, processed and formulated by the physicians themselves. Quality control and other related issues were not in vogue. However, with the increasing use of herbal products worldwide and emergence of pharmaceutical houses on a large scale has led to increasing concern about the quality and purity issues. Safety monitoring is mandated by increasing use of pesticides.

In Unani System 90% of the drugs used are from herbal origins while about 5% each from mineral and animal sources. Each drug has four potency levels. Compound formulations consisting of more than one drug are prepared in the form of Khamira, Majoon, Tiryaaq, Itrifal, Jawarish, Sharbat, Kushta, Tila, Zamad, Decoction, Infusion

etc. Each drug has four potency levels and opposite temperament drugs are used to counter humoral imbalance.

The theory and principles of therapy are interesting and are based on experiences of generations of physicians. Like other holistic systems of medicine Unani Medicine has concept of elementology i.e. groups of four elements, air, water, fire and earth and composed of these is human body is a microcosm developed with the combination of above groups of elements.

Mizaj (Temperament) is one of the cardinal theories of Unani. Similar to the temperament of an individual, each drug has its temperament. When different basic molecules of different element come into contact at one place they act and react. Their Kefiyat (Quality) interacts with each other in such a manner that a new Kefiyat (Quality) emerges. This new Kefiyat is called Mizaj. This may be viewed as drug- drug interaction in-vitro.

Similarly an individual can be placed into four main categories according to body constitution and personality traits.

Substitution (Al-Abdal) of drugs in Unani System of Medicine

The first comprehensive and authentic treatise that deals with substitutes of single drugs of herbal and mineral origin used in Unani system of medicine was written in Arabic by Abu Bakar Mohammad Bin Zakariya al-Razi (Rhazes) (865-925 A.D.). Maqala Fi Abdal al-Mustamala Fi al-Tib Wa-Elaj, popularly known as “Kitab al-Abdal” which has been translated in English by Central Council for Research in Unani Medicine, ministry of health and family welfare, Government of India is an outstanding work on the subject of substitutes in Unani medicine as no other book short or exhaustive of yesteryears consisted any chapter on such a vital aspect of substitutes their adverse effects and antidotes and no writer discussed the related problem either.

Al Razi has described the importance of use of substitutes and stated, “All the drugs, required for the treatment are not available everywhere, so if the physician is unaware of substitutes which may be used in place of the original drug, the objectivity and benefaction of this medical profession would cease”. Rhazes has also quoted the following principles of substitution from Galen’s book “Al-Adwiyat al-Muqabla” (Arabic), “if you need a single drug of good quality, for it would be less harmful. Then if you want to prepare a compound drug of which one single drug is unavailable, use the lesser quality drug would remain unchanged”.

In the book written by Rhazes, substitutes for 122 drugs have been described, some of which were native to writer's own country, Iran. The drugs have been listed in the book by their names as used in the Unani system of medicine. Most of these have been identified by the author by their botanical names, while a small number remains still unidentified, some compound drugs are also mentioned along with substitutes e.g. substitute for Dawa al Qust may be Dawa ul-Kurkum and Dawa ul Misk. A substitute for some oil used in Unani system has also been described, e.g. substitute for Roghan-e-Gul is Roghan-e-Banafsha. It has not been possible to identify the botanical names for the compound drugs, as their ingredients have not been mentioned in the book, Kitab al Abdal. Razes has quoted many physicians in his book including Ibn-i-Maswaih, Bolus, Badighorus, Galen, Dioscorides, Masajjoya, Hunain bin Ishaq and Irmes. Rhazes has also referred to following books, Jame Ibn-i-Maswaih, Mayamir li Jalinoos, Adwiya Mufrada Li Jalinoos, Tadbiral-Asiha, Jame Irmes, Jame Hunain and Jame Bolus. The pharmaceutical houses should be instructed to write the ingredient which has been used in the formulation and not write the name which is described in the texts.

What are the basic issues?

The drug used as Unani Medicine are time tested and have served the mankind for generations. Most of the ingredients obtained from plant kingdom have been tested, evaluated and documented for –

- Pharmacognosy
- Phytochemistry
- Pharmacology

No further animal experimentation is required except in grey areas and for specific properties or activity. Such areas need to be identified and research projects be awarded by financing agencies. However, unnecessary repetition should be prevented.

Reports on Ethnobotanical survey are available. If required more such surveys be done by the Departments of Botany and Agriculture. This joint focused activity may be helpful in identifying areas where cultivation of medicinal plants may be done. Some Government Institution primarily working for this aim should actively cooperate and collaborate.

The content of active ingredient in the plants obtained from different geographical regions may vary due to soil type, season, macro and microclimate and other factors. Many unwanted substances like heavy metals are likely to be incorporated in plant

biocycle and these may eventually through drugs be administered to patients and cause harmful effects.

Minerals in Unani System of Medicine

Minerals originate from soil. Unlike vitamins, they cannot be synthesized by living organisms. Minerals are taken up by plants and through biological cycle reach human and animals who eat these plants. Minerals are often referred as trace elements as they are required by the body only in small amounts. These mainly include Iron, Zinc, Copper, Chromium and Selenium. However, overdose of these may be harmful to body organ systems. The key to mineral intake is to stay in balance.

Some metals used in Indian Systems of Medicine are not the constituents of normal balanced diet. However, metals are used after method of preparations described in the text for various ailments.

For example:-

1. Kushta Tila Kalan a gold preparation claimed to possess activities like general tonic, anti-infective, rejuvenating properties has been scientifically proven to produce immunomodulatory activity.
2. Calcinated Arsenic- repeated calcinations, trituration and incorporation of herbal juices detoxifies arsenic. This preparation is used for various neurological disorders.

The above two and many other calcinated products have been used in Unani System of Medicine. Unani texts and physicians have claimed these to be lightly effective in the treatment of various disorders. Some isolated studies are available on animals, but comparison with drugs available for allopathic systems in clinical situations is not done. Although there are claims that metals calcinated according to standard practices are devoid of toxicity. Risk-benefit assessment is essential during and after therapy with modern scientific methods to measure the amount of parent metal or its metabolite in body systems.

According to Unani System of Medicine determinations of Mizaj is basic and primary before initiating therapy. Although, the concept design and principles have been studied and documented in great detail, many a times making is complex to understand. However, determination of Mizaj on the basis of domination of Khilt (Humour) and

accordingly the sign and symptoms have been identified and allocated to each of the following types.

1. Damwiul Mizaj (Sanguine Temperament)
2. Safrawiul Mizaj (Choleric Temperament)
3. Balghamiul Mizaj (Phlegmatic Temperament)
4. Saudawiul Mizaj (Melancholic Temperament)

The above in a simplified way may be categorized as combinations of Hot and Cold with Dry and Moist. Generations of Unani Physicians with their vast experiences have unambiguously stated that selection of therapeutic regimen should be based on the Mizaj (Temperament) of the patient as well as drugs. This implies that drugs unmatchd according to Mizaj may not be useful or less useful. Scientific controlled trials are required to strengthen these concepts. Once this has been done, the study may be extended to allopathic systems of drugs. It may be pointed out that several drugs are available for one ailment and all drugs are not beneficial to all patients in any system of medicine. Some of the patients may be hyper or hypo responsive while others may manifest undesirable adverse reactions.

Comparative Clinical Evaluation of Drugs of ISM

For a drug development program there is no standard route. For established drugs the problem is of wider acceptability as most of drugs of ISM are facing. These drugs, well documented in ancient texts are still facing the problem of rightful place in therapeutic armamentarium. Some of these could even be better than synthetic substitutes available, looking at the risk- benefit ratio. However, no meaningful efforts have been made in the direction.

For drugs of ASU, no preclinical studies such as animal experimentation to assess the dosage toxicity are required. Studies on normal health individuals to evaluate pharmacokinetics including absorption, excretion are needed as these have already been use in since long and their clinical use has already been authenticated. Further, that these drugs and drug formulations perform their actions within safety parameters when administered according to laid down principles.

What is, however, required to establish their efficacy vis a vis with drugs of modern system of medicine and if their safety profile is more favorable even though the efficacy may be lower on the scale, they would still be more acceptable. No drug is free from adverse reactions, be it of any system of medicine, or obtained from any source, its

usefulness is determined by the favorable risk-benefit ratio. It is, therefore, essential that a planned strategy is required to be adopted for assessing only the best and useful remedies for specified diseases/ailments.

There may be several impediments in the process such as philosophical differences between the holistic systems of medicine such as Ayurveda, Unani, Siddha and Allopathic system of medicine. The holistic system deal with the correction of body deragements with the drugs, which can alter them towards normalcy and treat the individual as a whole. The conceptual differences should not be any impediment in designing a planned strategy for comparative evaluation of drug of two systems of medicine.

The primary focus should be from the strengths of drugs of ASU. Strength, I mean, is ailments or diseases for which, the physicians of ASU drugs feel and are confident that these can profitably compete and compare with the drugs of modern systems of medicine. Looking at this we can initially leave the diseases of infective origin and concentrate on life style diseases which could be

- Painful conditions (eg. Arthritis, traumatic injury)
- Digestive disorders
- Symptomatic relief of cough
- Mild to moderate diabetes
- Mild to moderate hypertension
- Skin disorders
- Allergic disorders
- Lipid disorders
- Infantile and infective hepatitis
- Psychosomatic disorders

Use of Available modern diagnostic & Investigation techniques

With the advancement of science, more and more new technologies have been introduced and are being added to the armamentarium of physician each day. Unfortunately, the physicians of Unani and other systems of ASU have adopted them only to a very limited extent. This is a great impediment in the progress of the system's of ASU medicine. The methodologies available including both non invasive and invasive should not only be incorporated in practice but should also form a part of the curriculum

of undergraduate course. The problem may arise because some students in Unani system may be coming from Arabic medium. These students may find themselves out of place while trying to understand the intricacies of biochemical, immunological, radiological, pathological, hematological and other investigations. This issue needs to be addressed.

For various reasons, scientist interested in new drug discovery have been visiting and revisiting Indian system of medicine. Their interest has not been without purpose and has been highly profitable at many times. Now is the wake up call for physicians of ISM to strengthen their system, include more and more scientific information/knowledge in the system, find their best and positive aspects and exploit them for the welfare of humanity.

Related Articles:

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Sextant (c. 994)

Abu Mahmud al Khujandi measures the altitude of the sun above the horizon.

Iranian astronomical observer and instrument designer Abu-Mahmud al-Khujandi (circa 940-1000) constructed the first known mural sextant, with a radius of 66 feet (20 m), on an accurate north-south facing wall in Ray, near modern Tehran, Iran. The name “sextant” refers to the fact that the instrument had an angular scale that was 60 degrees in length, one sixth of a circle. (When measuring latitude, one minute is equal to one sixtieth of a degree)

The instrument was designed to measure the altitude of the sun above the horizon at noon on the days of both the summer and winter solstice, the two dates in the year when this angle has its maximum and minimum value. From the average of these two angles, an observer could determine his or her latitude—the angular distance between the equator and the observation site.



The height of the sun in the sky was measured by looking at the shadow it can cast on an accurate scale. The Al-Khujandi scale was so accurate that the latitude that he obtained was correct to a tiny fraction of a degree. Other famous mural sextants followed, including the Fakhri sextant with a radius of approximately 118 feet (36 m) constructed by Iranian Ulugh Beg in Samarkand, Uzbekistan, in around 1420. More modern astronomical sextants are smaller and pivoted at the balance point. They can be moved to measure the angular separations of stars and planets.

Handheld nautical sextants have become common in the last three centuries. They are fitted with adjustable mirrors and are used to measure the altitudes of celestial bodies. **DH**

MAP, GLASS MIRROR, ASTROLABE, HUBBLE SPACE TELESCOPE

[GL-1]

Plant Taxonomy – Vital Tool for the Development of Unani Medicines



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“Save Plants to Save Lives” – was the call given by W.H.O. sometimes back to stress the role of Medicinal Plants in achieving the goal of “Health for All” – Alma Ata Declaration.

Recently, one could notice a global trend for the revival of the development of curative agents from indigenous drugs due to various reasons namely safer than allopathic medicines, more or less with no side effects, economical and environmentally suited.

The basic source of Herbal Drugs for Pharmaceutical industries comes from forest zones, fallow land, plains, mountains and a small amount comes from cultivation. The collection of these drugs is mainly done by unskilled labourers and therefore, a big question mark for the genuineness of the drugs so procured. Further, the costly and scarcely available drugs are subjected to deliberate adulteration or sometimes substituted with entirely different plant with similar look.

Could one expect the desired efficacy and safety of the prepared medicine either single drugs (*Mufaradat*) or compound formulation (*Murakabat*), if the raw material of doubtful purity and identity is used to prepare them?

It will not only tarnish the image of the whole system but will shake the public faith in the system.

What is the primary SOLUTION of this grave problem – Authentic and correct identification of the drugs at the starting point.

The paper, as the title goes, will discuss the vital role of Plant Taxonomy with specific examples. Besides this, other important aspects such as procurement, safe storage, phonological data and shelf life of the drugs will also be included in order to achieve genuine pharmaceutical preparations and the development of Unani Medicines in right direction.

[GL-2]

Problems and Prospects of Mechanism and Evidence-based Traditional Systems of Medicine with Special Reference to Unani System of Medicine



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“Medicine is destined to get away from empirism little by little, like all other sciences, it will get away by scientific methods”

-----Claude Bernard, 1865

Traditional Systems of Medicine (TSM), be it from the Unani, Ayurveda or Siddha Systems of medicine have been accepted by the people world over as the “natural” approach to their health care. It is because most medicaments have their origin from natural sources and therefore considered to be safe. These systems, besides being popular among the population, have stood the test of time and proved their efficacy over the generations. The development of these systems and their integration with the mainstream of health care delivery should be one of the priorities.

However, in real life misconception regarding safety and efficacy of medicaments are common, and the fact that a substance is “natural” does not of course assure their safety. In fact, these products may be inherently inert, toxic, or may have been adulterated either intentionally or unintentionally in a variety of ways. Therefore present day health care by way of TSM are fraught with many challenges and problems. These problems can be overcome if we undertake the following measures:

- a. Particular stress requires to be laid on the collection, cultivation, preservation, and standardization of the medicinal plants for the use by the Unani Ayurveda and Siddha physicians, and the protection of musk deer in farms.
- b. R&D is urgently required in National Health and Family Welfare Programmes by the Research Councils
- c. Universities, Public and Private Sector Research Organizations need to be associated in R&D through extra-mural projects from Research Councils/Departments of ISM&H
- d. Some of the areas of research needs to be identified
- e. Drug proving (including clinical verifications and pharmacological basis of therapeutic uses)
- f. Drugs standardization/pharmacopoeial standards needs to be established
- g. Preventive and curative role of ISM&H in various diseases and epidemics
- h. Strengthening of pharmacognosy/phyto-chemistry of medicinal plants.

All the above measures could be possible by using the modern sciences of experimentation. The union of biology with physics, chemistry, mathematics and computer science was an outstanding development of the 20th century science. Physical and chemical approaches to problems in biology became increasingly productive, giving rise to new concepts in

molecular biology and molecular medicine. The confluence of several powerful methods of observations, e.g. chemical analysis, electron microscopy, X-ray crystallography, electron spin resonance (ESR), and nuclear magnetic resonance (NMR) spectroscopy- eventually led to the determination of the precise double helix architecture of DNA, three dimensional configurations of protein molecules and amino acid sequences of their constituent polypeptide chains, and the precise characterization and three dimensional structure of most biologically active molecules. The synthesis of complex lipids and carbohydrates, the functions of cell membranes and partitioning of inorganic ions occur as a secondary consequence of the action of specific proteins. Many of these proteins are enzymes that catalyze the biochemical conversion of one molecule into another. Some are structural proteins such as collagen or elastin; others are regulatory proteins that direct how much of each enzyme or each structural protein is made, when and where. All this new knowledge can be considered an elaboration of the Ayurvedic concept of “Rasa Dhatu” and of ‘Mizaj’ in Unani system of medicine should be eagerly assimilated by the Unani and Ayurvedic physicians following the exhortations of Charak, Sushruta, Vagbhata and scholars of Unani medicine.

We now appreciate that homeostasis is maintained among the 30 trillion cells in the human body through constant communication with each other through signaling molecules (proteins, peptides, amino acids, nucleotides, molecules of diffusible and dissolved gases such as nitric oxide and carbon the cell membrane, in the cytoplasm, in the signaling molecules, whose binding to the receptors trigger signal transduction to produce a specific response. Molecular recognition is a fundamental feature of all biological processes encompassing ligand-receptor, enzyme-substrate and antigen antibody reactions. A receptor is a protein to which a ligand or a drug binds to activate or suppress a signal. Thanks to recombinant DNA technology, most of the receptors have been cloned and are now available for research using radioactive ligands. It is now possible to image the distribution and function of receptors in the living human body including the brain. The techniques of whole body autoradiography, micro- imaging in small animals and humans provide direct quantitative information about the distribution and site of action of drugs. How these techniques will be applied for the mechanism-based screening and validation of Unani and Ayurvedic herbal drugs will be the subject of discussion of this presentation, so that the ancient sciences of Unani and other TSMs could be integrated with each other to provide the best of the health care to the people.

[GL-3]

Modern Methods and Unani Medicine



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Quality evaluation and assurance of formulations is a fundamental requirement of industry and other organization dealing with Unani and other herbal products. Herbal products cannot be considered scientifically valid if the single drug has not been authenticated and characterized in order to ensure reproducibility of the test results in the each and every batch of the product. The development of authentic analytical methods whose results can be a reliably profile of the product is a major challenge. The phyto-chemical composition, including quantitative analysis of marker/bioactive compounds and other major constituent can play a major role in this regard. Further to note that the conventional methods for standardization of herbal formulation that include botanical identification, microscopic examination and identification of chemical composition by various chromatographic or other techniques cannot be vomited. In order to have a good coordination between the quality of raw materials, in process materials and the final products, it has become essential to develop reliable, specific and sensitive quality control methods using a combination of classical and modern instrumental method of analysis.

If the causes of non acceptability of Unani medicine on global levels and hesitantly accepted by local are analyzed the author noted two main cause. Lack of quality assurance and the conflicting report of the identification of the raw materials. Author want to add only one point for the second cause and that is very obvious that when identification of a drug has been corrected and made public in the form of publication then why that old name is used and the literature is not edited. It is also to add that the macroscopic and microscopic studies is also important for identification and authentication. The phyto-chemical studies as now days is the basis of standardization as mentioned in Pharmacopoeia cannot be 100% correct as it is only gravimetric study and need extra care.

The modern techniques such as TLC, Preparative chromatography, Paper chromatography, UV -vis spectroscopy, HPTLC, HPLC, Protein analysis using Electrophoresis and DNA finger printing etc are some very dependable method for Identification and authentication of single as well as poly pharmaceutical compounds but a very little attention has been given.

Here the author will like to discuss the modern methods use for identification of some active compound that can be used as marker for authentication and identification, like assay of Rhein in Maghz-e-Floos Khyar Shambar using Preparative TLC. Identification of various amino acids and sugars particularly in those drugs used as general tonic. GLC analysis for identification various fatty acids in oil yielding drugs and quality analysis of essential oil yielding drugs. Use of UV- Vis spectrophotometer for differentiation of authentic and spurious Saffron. Protein analysis for differentiating two variety of *Cassia sophera* having very close resemblance and identification and quantification of colchicines in Compound preparation.

Identification of the single drugs in powder form or in compound formulation is not easy and testing the presence of authentic raw materials in the finished products is a tough job and Physico-chemical methods are not found suitable. The test for physiological active constituent of particular compound and above discussed methods can be the easiest way to check some, not all, the presence of the important and costlier ingredients used for the

formulations. These parameters are easy to carryout and can be employed for quality control purpose of the Unani compound formulations.

[GL-4]

Toxicity of Metal Oxide Nanoparticles: A Perceptible Threat to Humans and Plants Alike



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Toxicological impact and development of early indicators for detection of possible adverse health effects arising from nanomaterial exposure has now being strongly realized. Exposure to nanoparticles (NPs) can provoke inflammatory responses and oxidative stress. They can also alter the permeability of blood brain barrier and re-translocate from the site of deposition to other parts of the body via circulatory or lymphatic system. A majority of NPs get internalized in cells through phagocytosis, receptor-mediated endocytosis, macropinocytosis and passive penetration. There are growing concerns about the possible influence of NPs on human health, particularly with the exposures during prenatal, pregnancy or early childhood. Nanosized materials including the carboxylic polystyrene, gold and TiO₂-NPs are reported to cross the placental tissue. In view of unavoidable human exposure to NPs, it seems logical to investigate the cytotoxicity of the metal oxide NPs. The data obtained on the cytotoxicity and phytotoxicity of representative NPs (TiO₂-NPs and NiO-NPs) will be discussed. Our studies on TiO₂-NPs induced cytotoxicity and DNA damage in human amnion epithelial (WISH) cells, as an *in vitro* model for nanotoxicity assessment, revealed the concentration dependent cytotoxic effects of TiO₂-NPs (30.6 nm) in concentration range of 0.625 - 10.0 µgml⁻¹. Cells exposed to TiO₂-NPs (10 µgml⁻¹) exhibited significant reduction in catalase activity and glutathione (GSH) level, and the increase in intracellular reactive oxygen species (ROS) generation and G2/M cell cycle arrest, as compared to the untreated controls. TiO₂-NPs treated cells also demonstrated the formation of DNA double strand breaks with 14.6-fold (p<0.05) increase in Olive tail moment (OTM) value vis-à-vis untreated control, under neutral comet assay conditions. Similarly, the plant communities also play a critical role in the sustenance of ecosystem, and as such, may experience significant exposure to NPs. We have investigated the nickel oxide (NiO-NPs) induced phytotoxicity in tomato (*Lycopersicon esculentum*) seedlings roots, and assessed the (i) translocation of NiO-NPs in root cells and ultra structural changes in cell organelles, (ii) potential of NiO-NPs to release Ni ions and their role in intracellular ROS generation to induce mitochondrial dysfunction, (iii) levels of oxidative stress marker enzymes, (iv) cell cycle alterations and apoptosis/necrosis analysis by use of highly sensitive techniques. The impact of NiO-NPs on the growth of tomato seedling roots entails oxidative stress, dissipation of mitochondrial membrane potential ($\Delta\Psi_m$) and release of caspase-3 like protease, leading to ROS mediated induction of mitochondrial dependent intrinsic apoptotic pathway. Thus, the reduction in cell viability, morphological alterations, compromised antioxidant system, intracellular ROS production, and significant DNA damage in NPs exposed cells signify the potential of the NPs to induce cyto- and genotoxicity in cultured WISH cells and plants.

[GL-5]

Globalization of Unani Medicine: Issues vs Solutions

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[GL-6]

Medicinal Plants and the Fungal Pathogen Threat



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Therapeutic uses of plants are well known to the world since ages and are widely used in Unani & Ayurvedic medicine in India. These plants prove as valuable assets for primary health care for the majority of the population throughout the world and are a critical source of income for rural population. So many formulations prescribed contain the active ingredients of the medicinal plants and are used as a general tonic to increase energy, improve overall health and longevity, and prevent diseases. The medicinal plants are facing a serious threat of various pathogens particularly fungus leading to overall decrease in their medicinal value making them harmful to the human body when used as a medicine. The need of the hour is to take necessary steps to prevent these valuable assets from the destructive fungal and other pathogen attack so that their medicinal value is not compromised.

[GL-7]

Things We Should Know About Publication Process



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Publishing is one of the necessary steps embedded in the scientific research process. It is also necessary for graduation and career progression. Publications should present some substantive and new result or analysis, and should not serve merely to increase the author's number of publications. Various publication practices, such as the standard scope of a manuscript and authorship criteria, vary from field to field, and digital technologies are creating new forms of publication. Nevertheless, publication in a peer-reviewed journal remains the most important way of disseminating a complete set of research results. The importance of publication accounts for the fact that the first to publish a view or finding—not the first to discover it—tends to get most of the credit for the discovery. Once results are published, they can be freely used by other researchers to extend knowledge. But until the results are so widely known and familiar that they have become common knowledge, people who use them are obliged to recognize the discoverer by means of citations. In this way, researchers are rewarded by the recognition of their peers for making results public.

Key words: Research, Review, Scientific, Publication

[GL-8]

HPTLC: A Novel Technique for the Phytochemical Fingerprinting and Quantitative Analysis of Active Constituents of Herbs Used in the Unani System of Medicine



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Many medicinal plants, traditionally used for thousands of years, are present in a group of herbal preparations of the Indian traditional health care system including unani system of medicine and are proposed for their interesting multilevel activities. Their curative properties are related to the presence of active constituents in different plant parts. As different organs of these medicinal herbs are used in preparing the Unani formulations, their phytochemical fingerprinting and quantitative analysis of the active pharmaceutical ingredients (APIs) are highly desired to monitor the quality and therapeutic efficacy of these formulations. HPTLC is one of the fast emerging tools that can be used to develop phytochemical fingerprints of these herbs and the quantitative determination of their APIs. This method is rapid and cost effective. It can simultaneously screen large number of herbal samples and analyse more than one active pharmaceutical constituents/biomarkers in a given sample. The studies carried out in our laboratory and elsewhere have shown that the genuine raw materials used in Unani Formulations and their adulterants can be easily distinguished in the market samples using phytochemical fingerprints generated by HPTLC. It may be used as standardisation tool for Unani formulations more effectively and most accurately and is utmost essential which could enable the society in general to have quality Unani formulations in one hand and to gain a momentum in Unani Medicine in the other. It may lead to a new way in the development of standard procedures for different Unani and other formulations.

[GL-9]

World wide Spread of “Superbug”: Time to Think Sensibly



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The emerging trend of Multi-drug resistance is becoming a major threat to community acquired and nosocomial infections, worldwide. The latest MBL, named NDM-1 (New Delhi Metallo beta lactamase) has been identified as novel class of carbapenemase found in enterobacteriaceae, first isolated from Swedish patient of Indian origin. This study was designed to detect new variants of bla_{NDM-1} in Indian environment. A new variant, bla_{NDM-4} was detected in *E. coli* isolated from sewage of an India hospital in November 2013. NDM-4 differs by a single amino acid substitution (Met154Leu) from NDM-1. Kinetic data showed that NDM-4 hydrolyzed imipenem more than that of NDM-1 [k_{cat}/K_m ($\mu\text{M}^{-1}\text{s}^{-1}$) ratio for NDM-4/NDM-1 for imipenem was 2.20]. Further, the MICs of imipenem and ertapenem were also found higher for *E.coli* expressing NDM-4 than that expressing NDM-1, suggesting that the Leu154 residue is involved in the higher carbapenemase activity. The strain was found highly resistant to Imipenem, meropenem, aztreonam, ceftazidime, cefotaxime, ceftazidime, cefoxitin, ticarcillin/clavulanic acid, imipenem/clastatin. PCR-based replicon typing method (PBRT) revealed incompatibility group of Inc K for bla_{NDM-4} carrying plasmid. The strains were also analyzed for their surrounding genetic environment for the presence of insertion sequences known to be associated with the bla_{NDM-4} gene in *Enterobacteriaceae*. Primers (targeting the ISAba125 identified a complete ISAba125 at upstream of the bla_{NDM-4} gene in AK1 strain

[GL-10]

Eye Blinding Infections: Modern Approaches for their Diagnosis and Treatment Especially with Honey



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The eye is said to be the “human being’s window to the world”. The horror of losing the sight, in fact, is known to those who have had a traumatic experience of normal eye sight and then losing it, somehow, due to one or the other reason. It harbors bacteria throughout the life and any pathogenic organism can cause severe ocular infections. The external infections of the eyes are localized but may spread to the adjacent tissues, from conjunctiva to the cornea and, into the inner eye, to the orbit or even to the brain! The strains of Staphylococci are most predominant and constant inhabitants of the eye besides other normal flora. The most serious infections of the eye may lead to blindness and sometimes even to death! Thus, the eye is to be looked after with utmost care. Surprisingly, almost all microbial species- Bacteria, Fungi, Protozoans, Viruses, Rickettsiae and Chlamydiae can cause a number of serious infections in the eye including Blepharitis, Scleritis, Chalazion, Dacryocystitis, Orbital cellulitis, Conjunctivitis, Hordeolum Externum (Stye), Corneal Ulcers, endophthalmitis and panophthalmitis. Cataract extraction has been one of the most commonly performed surgical procedures in adults in most developed nations all over the world. Endophthalmitis is considered to be the most devastating complication of cataract surgery which may lead to blindness, if not treated and managed properly. About 82-85% of the bacteria, mainly staphylococci isolated from the vitreous are usually genetically identical to bacteria isolated from the patients’ eyelids and conjunctiva constituting the normal flora of the eye. These organisms may gain entry to the eye by means of surgical instruments, the irrigation fluids, or by contamination of the intraocular lens implant (IOL). *Beside, corneal infections are said to be one of the most important causes of devastating eye infections leading to blindness.* In most populations of the United States as well as India, *Staphylococcus aureus* is a leading cause of bacterial keratitis, especially among individuals with a previously compromised cornea. Among Staphylococci, Methicillin-Resistant *Staphylococcus aureus* (MRSA), are the most significant and can evade normal eye defense systems, establishing chronic and severe ocular infections in adjacent tissues, e.g. the conjunctiva or cornea, the inner eye, the orbit, or more distant organs such as the brain, thus being designated as multi-resistant Super Bugs in Ophthalmology.

An important step in the diagnosis of many eye infections is the examination of conjunctival, corneal (swabings and scrapings) and or other specimens- intra vitreal tap in endophthalmitis aseptically followed by their microscopy, culturing on various specific media and antibiotic sensitivity examination and modern molecular methods particularly using PCR and immunological approaches.

The indiscriminate and unnecessary use of antibiotics or their combination has resulted in the startling phenomenon “Transferable Antibiotic-Resistance” in ocular pathogens also. Inspire of the development of a number of newer and newer antibiotics (Azithromycin, Besifloxacin) and even antifungals (Voriconazole), such infections remain difficult to be

treated and researchers need to have some Unani or natural product for the treatment in view of world wide problem of resistance towards modern medicines. Fortunately, medical uses of Honey for curing various ailments have been endorsed Holy Quran, Vedas and Bible. The Russians used it in World War I to prevent wound infection and to accelerate wound healing. Honey has been found to be effective against aerobic, anaerobic, Gram-positive and Gram-negative bacteria, also a variety of fungi. Honey is different, as it has an excellent "track record" over 4 000 years of usage as a wound dressing. In recent times it has been "rediscovered", with numerous reports of animal models and clinical studies, case reports and randomised controlled trials showing it rates favourably alongside modern dressing materials in its effectiveness in managing wounds. Honey has a potent antibacterial activity and is very effective in clearing infection in wounds. Interestingly, multi-resistant strains of MRSA have also been found to be sensitive to honey. It has been used worldwide for the treatment of various ophthalmological conditions like blepharitis, keratitis, conjunctivitis, corneal injuries and chemical and thermal burns to eyes, thereby, providing a hope to act as an alternate antimicrobial and curative agent for the treatment of dreaded eye infections even caused by MRSA.

[GL-11]

**Effect of *Centella asiatica* Leaf Extract on the
Dietary Supplementation in Transgenic
Drosophila Model of Parkinson's Disease**



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The role of *Centella asiatica* L. leaf extract was studied on the transgenic *Drosophila* model flies expressing normal human alpha synuclein (h- α S) in the neurons. The leaf extract was prepared in acetone and was subjected to GC-MS analysis. *C. asiatica* extract at final concentration of 0.25, 0.50 and 1.0 μ L/mL was mixed with the diet and the flies were allowed to feed on it for 24 days. The effect of extract was studied on the climbing ability, activity pattern, lipid peroxidation, protein carbonyl content, glutathione content and glutathione-S-transferase activity in the brains of transgenic *Drosophila*. The exposure of extract to PD model flies results in a significant delay in the loss of climbing ability, activity pattern and reduced the oxidative stress ($p < 0.05$) in the brains of PD flies as compared to untreated PD flies. The results suggest that *C. asiatica* leaf extract is potent in reducing the PD symptoms in transgenic *Drosophila* model of Parkinson's disease.

Note: Accepted for Publication in the Journal "*Parkinson's Disease*".

[GL-12]

Alternatives to Animal Experimentation: A New Method of Teaching and Learning



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Animal experiments are an integral part of pharmacology teaching at both modern and traditional medical colleges in India. There have been very few studies that have tried to define the relevance of animal experiments in undergraduate teaching and learning including the attitude of the medical students towards them. It has also become difficult to do animal experiments because of issues related to procurement of animals, strict regulations, ethics, change in attitude for animal experiments and finances. Various government agencies and committees including MCI, UGC and CPCSEA issued guidelines and notifications to use alternatives for undergraduate (MBBS/BDS) teaching and learning. Consequentially, many medical colleges in India have either introduced alternatives to these experiments or are debating the issue. The issue of discomfort while teaching with the aid of animal models for training and skills has always been in debate. The issue has been discussed in depth By W.M.S. Russell and R. Burch (1959) in their scientific treatise *The Principles of Humane Experimental Technique*, and these authors brought up the concept of 3Rs- “Replacement, Reduction and Refinement” of animals in experiments. The 3Rs concept is also known as “alternatives”. Thus, there has been intensive research to find alternatives to animal experiments. *In vitro* and *in silico* approaches have been found to be the best alternatives. These alternatives emanate from applications of biotechnology. *In vitro* approach makes use of cells in the premise that human end points are assessed in human cells that precludes the issues in species difference. Depending on the context and relevance the innumerable established cell lines could be used. The present authors at their department have been teaching and demonstrating animal experiments through computer based simulators/ softwares. These simulators help our undergraduate students in learning the basic concept of pharmacology in a better, interactive and user friendly manner. The paper would discuss the above points in brief and demonstrate one experiment related to effect of drugs on rabbit eye. The Iris of the eye is composed of two types of muscle fibres, the circular and the radial. The circular fibres are innervated by parasympathetic nerve fibres and the radial ones are innervated by sympathetic nerve fibres. The stimulation of sympathetic and parasympathetic nerves produces mydriasis and miosis respectively and their paralysis produces opposite effects. Drugs, which simulate the effects of autonomic nervous system can produce the above mentioned effects. This software based simulation exercise (ExPharm, developed by Dr. R. Raveendran, JIPMER, Pondicherry, India) uses a few such drugs on the rabbit eye to find out the effects on the size of the pupil, light reflex, corneal reflex and intraocular tension of the rabbit eye.

[GL-13]

Macro-Microscopy & Planar Chromatography – Important Tools for Quality Control and Identification of Adulterants/Substitutes of Unani Drugs'



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Unani drugs of plant origin are whole plant especially of herbaceous plants; otherwise their parts such as Root, Rhizome, Stem, Wood, Bark, Leaf, Flower, Anther, Pollen, Seed, Fruit and their Exudates or Gums etc. In India, the supplies are usually obtained through various trade channels and are generally lacking in uniform quality. This has created frightening problems with regards to the quality, safety and stability of the raw material and their desired therapeutic efficacy. The ever increasing demand of Unani drugs are leading to the adulteration and substitution of genuine drugs and the poor quality of Unani products. It is very difficult to authenticate the commercial crude drugs because these are available as dried whole plant or some part of it. The Macro-microscopy & Planar chromatography (TLC/HPTLC) are the basic and important tools for proper identification of adulterants/substitutes of Unani drugs and their quality control.

The macroscopic study includes organoleptic characters i.e. the occurrence, size, shape, colour, surface markings, margins (leaf), texture, fracture, internal appearance, cut surfaces, odour and taste of the crude drug. For example, Resha Khatmi- the roots of *Althaea officinalis* are strongly longitudinally furrowed, often spirally twisted with short-medium fracture but in *Alcea rosea* syn. *Althaea rosea* these are finely longitudinally furrowed, straight with medium-hard fracture. Likewise, Banafshan (*Viola odorata*) can be differentiated from *V. serpens* & *V. betonicifolia* by observing the stigma of the flower.

The microscopical character encompasses the detection of the type of cell and cell contents as well as the arrangement of cells in tissues. Rehan, Pershiaoashan and Zarnab can easily be differentiated from their adulterants/substitutes by comparing leaf surface microscopy. Similarly, the arrangement pattern and size of fibres, stone cells, crystals, secretary canals etc in phelloderm and phloem region are valuable parameters for the identification of most of the bark drugs.

However, the quality control and quality assurance of Unani drugs still remains a challenge because of the high variability of chemical components covering a broad range of substance classes and exhibit natural variability. These include alkaloids, phenolics, terpenoids, steroids, glycosides etc. Fingerprint analysis approach using TLC/HPTLC has become the most potent tools for quality control of Unani medicines because of its simplicity, reliability, rapidity and economy. Chromatogram development, an important and most crucial step in the TLC/HTLC procedure is generally overlooked. Not only the general finger print profile but also chemical reference markers can be identified and estimated for quality evaluation and authentication of adulterants/substitutes of Unani medicine viz. asarone in *Acorus*, phyllanthin & hypophyllanthin in *Phyllanthus* species, berberine & tinosporaside in *Tinospora*, glycyrrhizine in *Glycyrrhiza*, gallic and ellagic acids in *Terminalia* species etc.

[GL-14]



Herbal Nanotechnology

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[GL-15]

Understanding Essential Oils as Antibiofilm Agents



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New strategy to combat bacterial and fungal diseases need to be identified due to existence and constant evolution of drug resistant microbial pathogens and toxicity of some of the available antimicrobial drugs. Emergence and spread of multiple drug resistant microbes have created immense clinical problem in treatment of Infectious diseases. Therefore, antimicrobial compounds with novel mode of action need to be discovered and developed. More than 80 percent of microbial pathogens form biofilm in infection which is a physiologically different state of growth of pathogens with altered gene expression and result in several fold increase in drug resistance level. In many microbial pathogens biofilm formation is linked to density dependent cell to cell communication known as quorum sensing. Therefore, biofilm is considered an important anti-infective drug target. It is expected that a broad spectrum antibiofilm inhibitors from natural products might be useful in combating multidrug resistant bacteria by disrupting biofilm and improving the action of antibiotics. Many antibiofilm agents are known and some are used in treating oral biofilms. However little efforts have been made to screen and identify broad spectrum antibiofilm agents from Indian medicinal plants and their products. In the last few years some efforts have been made to understand the role of essential oils as antibiofilm agents. In this paper we have made an attempt review the recent work conducted on essential oils as antibiofilm agents against bacterial and drug resistant fungal pathogens.

Key words: Medicinal plants, antibiofilm agent, essential oils, drug resistance, infectious diseases

[GL-16]

Conserving Bio-Diversity of High-Demand Medicinal Plants Through Ex-situ Cultivation in Western Uttar Pradesh



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Owing to the belief that Ayush drugs are safe and without any side-effects, there has been an increasing interest in their use in India and abroad during last three decades. Pharmaceutical industries have, therefore, enhanced their production many-fold in recent years. However, this has led to over-exploitation of medicinal plants in the forests and thus there is a need to step-in to conserve them. Furthermore, shortage of genuine raw material has also prompted use of adulterants and substitutes by manufacturers to maintain supply line, thereby, producing substandard Ayush medicines. This calls for field-scale cultivation of medicinal plants, particularly those which are in high-demand by Ayush drug industries in order to meet their requirement besides conserving them for posterity.

Based on this rationale, a programme for '*awareness, training and cultivation of medicinal crops in Western Uttar Pradesh districts*' was carried out during 2002-2006, supported by National Medicinal Plants Board, Govt. of India, New Delhi. The activities envisaged: Preparation of literature on agro-techniques and marketing of 20 high-demand medicinal crops; (ii) Organizing Farmers' meets in different development blocks in Western U.P. districts; (iii) Organizing district level seminar on agro-techniques and marketing of medicinal crops; (iv) Setting-up of demonstration plots on certain medicinal crops by farmers, (v) Interaction meeting of traders, farmers and manufacturers; (vi) Providing of planting material of medicinal crops to growers & farmers; (vii) training to farmers on agro-techniques and marketing of high-demand medicinal crops; (viii) Study on demand estimates of raw drugs in Aligarh & Hathras districts; (ix) Organizing a 'Field Day' and 'Farmers' meets at Gabhana; (x) Publication of a booklet on **Agro-techniques and marketing of medicinal crops**; (xi) Setting-up of medicinal seed village; (xii) Visit to the project by Chief Executive Officer, National Medicinal Plants Board, New Delhi, and finally; Media reports.

As a result of constant pains-taking efforts some 162 acres land for which 400 farmers were given organically certified planting material was brought under cultivation in Western U.P. villages and produce marketed in open market through project efforts. Further some 3000 farmers of the study area have been educated for the first-time about concept of medicinal crops and given information on their agro-techniques and marketing in Western U.P. districts. It is hoped, the study will also serve to conserve our rich bio-diversity of medicinal plants wealth. The crops cultivated under the project included *Ashwagandha, Kaunch, Sonamukhi, Jatropha, Mushkdana, Isabgol, Kalmegh, Safed musli, Kantakaranj, Amla,*
Bael etc.

[GL-17]

Supercritical CO₂ Extraction -A Green Technology



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Replacement of conventional organic solvents with Supercritical Fluids (SCFs) in extraction procedures is a major advancement in today's pollution prevention programs. Supercritical fluid extraction allows for waste separation and minimization, as well as solvent recycling. Other advantages of supercritical extraction include high efficiency, high extraction rates and more selectivity.

Supercritical Carbon dioxide (CO₂) is the most beneficial SCF used in extraction. Its non-toxic and non-combustible properties make it environmentally friendly. It has a higher density and diffusivity (thus solubility) and lower critical parameters than most of the other SCFs. With a critical temperature of 31.1°C and critical pressure of 73 atm, supercritical CO₂ extraction energy costs are lower than those of other fluids. CO₂ is readily available in high purity and is therefore, inexpensive to purchase. Supercritical CO₂ is the most popular and inexpensive solvent used in industry today.

Supercritical carbon dioxide is used as the extraction solvent for creation of essential oils and other herbal distillates. Processes which use supercritical carbon dioxide to produce micro and nano scale particles, often for pharmaceutical uses, are currently being developed. The gas anti-solvent processes, rapid expansion of supercritical solutions, and supercritical antisolvent precipitation (as well as several related methods) have been shown to process a variety of substances into particles.

In laboratories, supercritical carbon dioxide is used as an extraction solvent, e.g., in determination of total recoverable hydrocarbons from soils, sediments, fly-ash, and other media, and determination of polycyclic aromatic hydrocarbons in soil and solid wastes. Supercritical fluid extraction has also been used in determination of hydrocarbon components in water.

The application of supercritical CO₂ in the food industry is widely developed for extraction of organics. Recent new technologies are emerging for the use of supercritical CO₂ in the extraction of metals and non-organics. Supercritical CO₂'s uses continue to be explored and expanded due to its many benefits.

The role of SC- CO₂ as a green solvent and its application as Green Extraction Technology will be presented at the conference.

[GL-18]

Current Scenario of Herbal Technology World Wide



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21st century is the century of Biology mechanical and propelled by scientific knowledge and hi-tech expertise. Herbal technology, are going to be the most influential elements that are fundamental for success and welfare for the people of nations. Information on the herbal technology was collected via electronic search (using pub med, sci-finder, Google Scholar and web of science) and library search for articles published in peer-reviewed journals. Furthermore, information also was obtained from some local books on ethnopharmacology. Nutraceutical are food or part of the food that grant medical or health benefits together with the prevention or cure of the disease. Cosmaceuticals are the largest accumulation to the health trade and are described as cosmetic products with drug; they are the fastest increased segment in the skin care market. Biopesticides are cost effective, safer, readily available, and ecological and therefore more environment- friendly and will offer substitute to conventional pesticides. Herbal drugs represent a major contribute to all the formally recognized systems of health in India. An upward trend has been experimental in the research on herbals. Export-Import reports reveal that the global trade of herbal technology and plant originated products is around US \$250 billion. In the present article, an attempt has been made to present an overview of the herbal technology in the international market and intends to throw in the knowledge about Herbal drugs, Nutraceuticals, Cosmaceuticals, and Biopesticides which comes under herbal technology.

Key words: Herbal Technology, Herbal drugs, Nutraceuticals, Cosmaceuticals, and Biopesticides

[GL-19]

Role of Plant Tissue Culture in Propagation and Conservation of Medicinal Plants: A Technique to Technology



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Tissue culture technology is a powerful tool for rapid multiplication and conservation of many medicinally and economically important plant species. It has been particularly useful for the conservation and rapid propagation of valuable, rare and endangered medicinal species. Different pathways of *in vitro* morphogenesis have been developed in our laboratory, not only to achieve faster propagation, but also to unravel intricacies involved in these processes. The *in vitro* strategies, like normal shoot growth culture, slow growth/restricted growth shoot tip culture and the innovative method of regenerative excised root culture hold great promise for germplasm preservation with an integrated approach. It is in this context, the 'Tissue bank' for 'Gene bank' serving as repositories is the only hope for germplasm conservation.

Many prized-medicinal plants are facing a threat of extinction due to overexploitation. In the present study, *in vitro* protocols have been developed for mass multiplication and propagation of some potential medicinal plants viz., *Tylophora indica*, *Cardiospermum halicacabum*, *Withania somnifera*, *Cassia angustifolia* and *C. alata*, *Vitex negundo* and *V. trifolia*, *Tecomella undulata*, *Balanites aegyptiaca*, *Salix tetrasperma* and *Albizzia lebbek* etc.

Synseed Technology is a potential tool for an efficient and cost effective clonal propagation system. Synthetic seeds have been produced by encapsulating nodal segments of *Tylophora indica*, *Ruta graveolens*, *Rauwolfia serpentine* and *Withania somnifera* etc. The alginate coat protects micropropagule and can be used during exchange of axenic plant materials among laboratories. The activity of various antioxidant enzymes like CAT, SOD, GR and APX was studied during acclimatization. The study revealed that the micropropagated plants developed functional photosynthetic machinery to reduce oxidative stress during acclimatization period.

True-to-type clonal fidelity is one of the most important prerequisites in the micropropagation of a plant species. In the present study, PCR-based techniques RAPD and ISSR were adopted for evaluation of clonal fidelity in tissue culture raised plantlets of *Rauwolfia serpentine*, *Balanites aegyptiaca*, *Vitex negundo* etc. All the treated primers produced monomorphic patterns among the regenerants and respective mother plants, confirming the genetic uniformity of the micropropagated plantlets. Prime importance is now to standardize *in vitro* protocols for different high value medicinal plants.

[GL-20]

Radiation-Processed Polysaccharides in Augmenting the Productivity of Unani Medicinal Plants



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[GL-21]

Nano-Emulsion Technology in Unani Medicine



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One of the basic differences between a modern medicine (Allopathy) and indigenous medicine (like Unani) is that the earlier deals with a particular constituent/component/moiety while systems like Unani medicine relies on holistic approach. Converting entire crude form of a drug into a dosage form poses problems to a pharmaceutical scientists which result into a large dosage size, increased dosing regimen, inadequate mixing of different crude drugs and patient non-compliance (geriatrics, pediatrics and non-conscious). Now we are laden with techniques like nanotechnology (e.g., nanoemulsion technology). By judicious exploration of technology we can think of dosage forms that can address the challenges being faced and also complying with formula of ancient scriptures (Qrabadeen). This may be successfully explored in liquid dosage forms like Jushanda, Khasanda, Haleeb, Sharbat and other types of sayyal. It can also be explored for external dosage forms (liquid and solid). A genuine effort and ability to think out of the box would definitely pave the way for amalgamation of nanoemulsion technology with Unani system of medicine.

[GL-22]

Assessment of Chlorambucil Induced Genotoxicity: Attenuation by Vitamin C *In Vivo*



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Vitamin C is a potent, water-soluble antioxidant that has been demonstrated to be an effective free radical scavenger and protecting cells against free radical mediated damage. Besides exerting antioxidant influence directly, Vitamin C can promote the repair of oxidative DNA damage from the DNA and/or nucleotide pool, through the up regulation of repair enzymes. The inhibitory effect of Vitamin C towards a number of mutagens/carcinogens was shown by many authors in humans and animals. To examine and extend this issue further, our present work was initiated to evaluate the ameliorative effect of Vitamin C against genotoxicity induced by Chlorambucil. Chlorambucil is a bifunctional alkylating agent. It is used in the treatment of cancer. However, many studies reported several adverse health effects also which may lead to carcinogenicity. Vitamin C was injected with increasing doses by intraperitoneal route to Wistar rats along with high dose of Chlorambucil. The Comet assay technique has successfully revealed the interactions of antioxidants with genotoxicants and it has also proved a valid technique to evaluate the role of antioxidant/micronutrients in protecting the integrity of the genetic material. That is why we have used this assay in the present study to obtain more precise data to evaluate the protective effect of Vitamin C against Chlorambucil induced genotoxicity. After 24 hr of treatment, the animals were sacrificed by cervical dislocation and blood was collected by cardiac puncture. This assay is performed in dark according to the method described by Buschini et al. with slight modifications. In conclusion, the results of this study support the hypothesis and the study confirms the antioxidant and ameliorative properties of Vitamin C.

Keywords: Vitamin C, Chlorambucil, Genotoxicity, DNA damage, Comet assay

[GL-23]

New Fatty Acid and Glycosides from Seeds of *Lens culinaris* Medik



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Lens culinaris Medik syn. *L. esculenta* Moench (Leguminosae) is an annual, bushy medicinal herb. It is primarily cultivated in south-eastern Asia for making food items. Its flours are used to make culinary dishes in the Asian subcontinent, Middle East, Europe and North America. Phytochemical investigation of the methanolic extract of the seeds of the plant led to isolation of four new secondary metabolites, namely cis-Docos-15-enoic acid (1), Lauryl β -D-glucuronoside (2), Arachidyl- β -D-arabinoside (3) and *n*-Tridecanyl β -D-arabinoside (4). The structures of these phytoconstituents have been established on the basis of ESI-MS, NMR spectral data analysis and chemical means.

[GL-24]

Quality Control of *Tinospora cordifolia*: Respective to Season and Dioecy Aspect

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ABSTRACT

Tinospora cordifolia (Thunb.) Miers, Menispermaceae, is a dioecious creeper, commonly known as “Giloe” or “Guduchi” with significant medicinal importance in the traditional systems of medicine. This plant has been known to possess immunomodulatory, hypoglycaemic, antioxidant, anti-hyperglycaemic, antiallergic, anti-inflammatory, hypoglycemia and several other properties also. The quality assessment of source material of herbal medicine may directly proportional to its efficacy. Different vegetative parts viz; leaf, stem, aerial root were collected for macro-microscopic studies. Microscopically, leaf of *T. cordifolia* showed presence of anomocytic stomata, unicellular trichomes. Stem showed wheel shaped appearance at the transverse cut surface, a peculiar characteristic feature of the family Menispermaceae. Stem and aerial root exhibit abundant mucilage canals, dense ceratenchyma and characteristics wedge shaped medullary rays. Phytochemical screening analysis of the extracts revealed presence of tannins, phenolics, flavonoids, alkaloids, terpenes and steroids in most parts. The whole plant is used medicinally however; the stem is approved for use in medicine. The study on stem samples collected in different seasons revealed that total phenolics and total sugar concentration obtained highest values in summer season while starch and tannin content were found maximum in winter season. However biomarkers tinosporaside and berberine, reached to their highest concentration in monsoon season. Further, antioxidant potential revealed the highest inhibition percentage in winter season as well as in late summer season. The results of phytochemical evaluation showed highest concentration in female samples. The quantitative variations in the bioactive markers among different seasons of *T. cordifolia* suggest the particular season and gender for harvesting source material for getting the desired pharmacological activities.

Key Words: *T. cordifolia*, microscopy, pharmacognosy, tinosporaside, berberine, seasonal variation, dioecy.



آلة يعلم منها كمية الدم المفقود بالحجامة،
صنعت بناء على البيانات والأشكال الواردة في كتاب
الجزري حوالى سنة ٦٠٠هـ.



Two devices for measuring the
Amount of blood after letting
As described and illustrated by
Al-Jazari (ca. 1200 C.E.) in his
Book



An assortment of surgical
instruments covering various
applications as used by Muslim
physicians

آلات طبية مختلفة
استعملها الأطباء العرب والمسلمون.

Evaluation of Luk (*Laccifer lacca* Kerr.) for its Antifertility Activity in Rat Models

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ABSTRACT

Antifertility activity of Luk (*Laccifer lacca* Kerr) was evaluated for its antiovulatory, anti-implantation, teratogenic and estrogenic activity. In first two tests the cyclic female Wistar rats were divided into four groups of six animals each. Animals in test group A and B were treated with Luk processed by hot water (LMW) (470 mg/kg and 800 mg/kg) respectively while test group C was given Luk processed by decoction of *Izkhar* and *Reward Chini* (LMIR) (800 mg/kg). Third test was carried out in 21 days old female rats and treated with LMW and LMIR (800 mg/kg each) and served as test group A and B respectively, while the standard group treated with ethinyl estradiole (0.02 mg/kg). In all the experiments, treatment was given once a day orally. In the antiovulatory experiment treatments were continued for 15 days and vaginal smear monitored throughout the study. On 16th day animals were sacrificed; ovaries and uteri were weighted; one ovary was subjected to histological studies and other for estimation of cholesterol. In the anti-implantation activity animals received treatment from day 1st to 7th of pregnancy, laparotomised on 10th day and the number of implants counted. After delivery number of live, abnormal & dead births were counted. The newborn litters were weighed and examined for gross defects. Estrogenic nature of Luk was evaluated by noting the times taken for vagina to completely open after 7 days of treatment.

A significant ($p < 0.05$) increase in duration of estrus cycle and diestrus phase, with decrease in proestrus ($p < 0.01$) and estrus ($p < 0.05$) phase was observed in animals treated with LMIR. There was notable decrease in body weight and very significant ($p < 0.01$) increase in ovarian tissue cholesterol in test group B and C. Uterine weight was also found to be increased in test groups. Anti-implantation effect was seen upto 50% in test group C. Higher dose of LMW and LMIR showed increase in resorption, dead and malformed births. Luk also exhibited significant ($p < 0.01$) estrogenic activity assessed by immature vaginal opening. It can be concluded that Luk interfered normal ovulation, hindered the implantation and exhibited teratogenic effect possibly by virtue of its estrogenic effect.

Keywords: *Laccifer lacca*, *Maane' hamal*, Still birth, Implantation, Estrous cycle

Anti-Depressant Activity of Majoon Najah in Experimental Models

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ABSTRACT

The present study was carried out to evaluate the antidepressant activity of Majoon Najah (MN), so as to validate its use as antidepressant drug in Unani system of medicine. Wistar rats of either sex weighing 200-250 gm and male Swiss mice weighing 20-24 gm were divided into 4 groups of 6 animals each. The animals in Group I and II were treated with distilled water and Amitriptyline (10 mg/kg for Wistar rats and 18 mg/kg for Swiss mice), respectively per oral, once a day, whereas animals in Group III and IV were given 50% alcoholic extract of MN in the dose of (100 mg/kg and 200 mg/kg) to Wistar rats and 160 mg/kg and 320 mg/kg for Swiss mice, respectively orally, once a day (duration of treatment has been stated with respective tests). A battery of tests viz. Despair Swim Test, Elevated Plus Maze Test and Reserpine Induced Hypothermia Test, were used to study the antidepressant effect of MN. The former two tests were carried out in groups of Wistar rats while the later one in Swiss mice.

In the Despair Swim Test, the alcoholic extract of MN in Group III and IV reduced the immobility time significantly ($p < 0.01$ and $p < 0.001$, respectively) and reversed the hypothermia induced by Reserpine significantly ($p < 0.001$) showing antidepressant activity. In Elevated Plus Maze Test, the two doses of the test drug were found to increase the number of entry and the time spent in open arm significantly ($p < 0.01$ and $p < 0.001$, respectively), showing anxiolytic activity of MN in a dose dependent manner.

MN produced significant anti depressant and anxiolytic effect in respective models. Since all these activities are suggestive of antidepressant effect, therefore, it was concluded that MN possesses significant antidepressant effect.

Keywords: Antidepressant, Majoon Najah, Amitriptyline, Reserpine, Hypothermia.

Resveratrol as a Potential Drug for Diverse Human Diseases: Special Emphasis on Hepatic Fibrosis

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ABSTRACT

Resveratrol (3, 4', 5-trihydroxystilbene) is a naturally occurring polyphenol, synthesised by a wide variety of plants. Common plant sources of resveratrol include butterfly orchid tree, blueberry, corn lily, cranberry, eucalyptus, jackfruit, ko-jo-kon, legumes, mulberry, peanut, spruce, skin of red grapes etc. The polyphenol is known for its anti-inflammatory, antioxidant, antiviral, antiplatelet aggregation, cardioprotective and neuroprotective properties. Owing to its multiple health promoting benefits, resveratrol can be used in prospective pharmaceutical preparations with possible application in combating liver diseases, cardiovascular disease, ischemic heart disease, Alzheimer disease and diabetes. Among liver diseases, hepatic fibrosis is a known and most prevalent pathological condition that results in an amassing of tough fibrous connective tissue in the liver, consequently leading to cirrhosis and hepatocarcinoma. It has been reported that resveratrol can reduce inflammation by inhibiting prostaglandin production, cyclooxygenase-2 activity and nuclear factor- $\kappa\beta$ (NF- $\kappa\beta$) activity. As other inflammatory mediators can stimulate hepatic stellate cell (HSC) activation, it is well presumed that the hepatoprotective effect of resveratrol may be attributed to its antifibrotic activity during liver injury *via* inhibition of HSC activation pathway. Possible role of resveratrol on antifibrotic/hepatoprotective potential in a model organism of hepatic fibrosis will be discussed with a specific view on its mechanism of action and its consideration for inclusion in various drug formulations.

Experimental Models and Hepatotoxic Drugs used to Study Hepatoprotective Effect of Traditional Drugs

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ABSTRACT

Liver damage/disease is a worldwide health threat due to non-availability of specific drug and potentiality of modern drugs to add further damage. A number of traditional drugs attributed to possess hepatoprotective activity have been used in liver diseases since centuries. So investigating these drugs for their hepatoprotective effect to develop effective

medicine for the treatment of liver toxicity or dysfunction is promising. A different kind of laboratory models are used to assess the hepatoprotective action of these drugs. Hepatotoxic agents such as Carbon tetrachloride (CCl₄), Paracetamol, D-galactosamine are commonly used. Carbon tetrachloride (CCl₄) has been more commonly used to induce liver toxicity in rodents. Likewise chloroform, acrylamide, adriamycin, aflatoxin, thioacetamide, isoniazid, rifampin, ethanol, pyrilizidine alkaloid, alphanapthoisoithiocynate, tamoxifen, phalloidin, cadmium, lead and erythromycin have been also used to induce chemical injury in the liver. When the disease is induced in an appropriate animal, the traditional drugs can be tested for its therapeutic effect. The hepatoprotective effect is evaluated by ability of the trial drug to prevent or mitigate the injury in different parameters like biochemical, histological changes and normalization of the volume of the liver. The present article explains the types, doses and the mechanism of hepatotoxic agents along with experimental model used to study hepatoprotective effect of traditional drugs.

Key words: Hepatotoxic agents; Hepatotoxicity models; Hepatoprotective effects; Traditional drugs; Experimental models; *In Vitro in Vivo*; Liver damage; Traditional medicine.

[P-5]

Ameliorative Potential of *Camelia sinensis* in Wistar Rats: A study on Locomotor and Exploratory Behavior

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ABSTRACT

Open field test (OFT) is one of the most traditional and widely used methods for the assessment of the emotional state in rodents of which many varieties exist. A flat area bounded by walls is divided into squares, and several activities are scored (number of center and peripheral squares entered per unit time, latency to leave the center area, rearing, grooming, etc.). The open field is a typical all-purpose observational test, which imposes a considerable workload; therefore its cost-effectiveness ratio depends jointly on labor cost and the value attached to information provided by multiple response end points. The test is performed in a circular or square arena with a washable floor that needs to be thoroughly cleaned after each test. OFT was used to assess locomotor and exploratory behavior by monochloroacetic acid (MCA) and *Camelia sinensis* for five minute on rats. MCA showed significant reduction in ambulation 40.6 ± 1.5 , 28.7 ± 0.7 mean frequency, preening 5.66 ± 0.4 , 4.33 ± 0.3 and rearing 13.3 ± 0.4 , 9.85 ± 0.3 mean frequency after 7 days of treatment. But after 1 day of treatment no significant changes were observed for MCA. Simultaneous treatment of *C. sinensis* with MCA significantly increased the ambulation, preening and rearing when compared with chemical group in different manner ($P < 0.05$, $P < 0.001$).

Keywords: Green tea, Open field test, Monochloroacetic acid.

Hypoglycaemic Effect of *Qurs-e-Tabasheer* in Streptozotocin Induced Diabetes in Wistar Rat

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ABSTRACT

Introduction: Diabetes mellitus is a global burden as it causes severe loss of health and economy. In Unani medicine, many drugs are described to be effective in *ziabitus* (diabetes) but only very few of them have been scientifically evaluated. So, one of the compound formulation, “Qurs-e-Tabasheer” was studied for its hypoglycaemic effect in experimentally induced diabetes in rats.

Material and methods: Qurs-e-Tabasheer powder at a dose of 583 and 1166 mg/kg body weight was administered for 56 days after diabetes induction by streptozotocin in wistar rats. The body weight, serum glucose (fasting and post parandial), glycosylated haemoglobin, total cholesterol, triglyceride, LDL, VLDL and HDL in streptozotocin-induced diabetic rats were evaluated and statistically compared with the similar values obtained in plain control and positive control animals given distil water and glibenclamide at the dose of 600µg/kg for same duration respectively.

Results: Oral administration of Qurs-e-Tabasheer powder significantly decreased serum glucose (fasting and post parandial), glycosylated haemoglobin, total cholesterol, triglyceride, LDL, VLDL; while it increased body weight and HDL in diabetic rat.

Conclusion: The study showed that the test drug posseses significant anti-diabetic effect and may be considered as good lead for future studies in the development of anti diabetic drug.

Key words: Qurs Tabasheer, Unani drugs, Hypoglycaemic effect, Spectrophotometer

Evaluation of Anticonvulsant Activity of Aqer Qerha (*Anacyclus pyrethrum* DC.) Root in Experimental Animals

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ABSTRACT

Objectives: The present study was carried out to evaluate the anticonvulsant activity of hydro alcoholic extract of Aqer Qerha (*Anacyclus pyrethrum* D C) root and validate its use as antiepileptic drug as claimed in Unani system of medicine.

Material Methods: Acute toxicity study was carried out in Swiss mice of either sex weighing 20-25 gm for dosage selection of the Aqer Qerha. The epilepsy models used in the study were PTZ induced seizures and maximal electroshock test. The rats of wistar strain were divided into four groups of six animals each. Group I served as plain control and was given distilled water 2ml/kg b.w. orally; Group II was given diazepam 5 mg/kg b.w. i.p and served as Standard Group III and IV were treated with hydro-alcoholic extracts of AQ in the dose of 65 mg/kg b. w. and 130 mg/kg b.w. respectively orally. The parameters of hind leg extension in MES and onset of the first seizure, clonic and tonic seizure, total number of convulsion and duration of tonic and clonic convulsion were assessed in PTZ induced seizure test. The parameters were analysed and compared statistically for different groups.

Result: In toxicity study animals tolerated drug up to the dose of 2.34gm/kg b.w. orally. The LD50 observed for the drug used by intra peritoneal route was 1gm/kg b. w. It was found that treatment with test drug significantly ($p<0.05$) reduced tonic hind leg extensor stage in MES induced epilepsy. In PTZ induced seizures, AQ significantly ($p<0.05$) delayed the onset of the first seizure, clonic and tonic seizure; and decreased the total number of convulsion and duration of tonic and clonic convulsion. The drug at higher dose protected the entire animal from death and percent protection from death at lower dose was 33%.

Conclusion: The study demonstrated that the test drug possesses significant anticonvulsant activity against both PTZ and maximal electroshock induced seizures.

Key Words: Unani Medicine; PTZ, Maximal Electric Shock test; LD50; Hydro alcoholic extract

[P-8]

Heat Shock Proteins (HSPs) 47 Levels and Diabetic Foot Ulcer: Is There Any Relationship

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ABSTRACT

Objective: HSPs has been proposed to have a role in the wound healing process, supported by finding that its expression is rapidly induced after skin is wounded in animal models. Because of this phenomenon, we have made a hypothesis that circulating HSPs will have any relationship with DFU.

Methods: The circulating levels of HSP 47 were measured in diabetic patients with an ulcer (Group A: n=30), without ulcer (Group B: n=30) and healthy subjects (Group C: n=30).

Results: Diabetic foot ulcer showed higher median plasma level of HSP47 [2.33(2.118-2.58) vs 0.98(0.83-1.07) vs 0.58(0.42-0.68) pg/ml] of the diabetic foot, diabetic control and healthy subjects. Odds Ratio and Risk Ratio for DFU after age adjusted were BMI ($>25\text{kg}/\text{mt}^2$) [OR 1.78, RR 1.35], HbA1c $>7\%$ [OR 3.37, RR1.76], Neuropathy [OR 5.79, RR3.13], retinopathy [OR 3.44, RR 1.82], hypertension [OR 1.54, RR 1.18], & smoking cessation [OR 4.53, RR 2.09].

Significant findings of the study: This study strongly supports the hypothesis that higher plasma HSPs play an important role in the early healing of foot ulceration, independent of BMI, sex, and age, however, further investigation of the underlying mechanisms is needed to elucidate the associations of these markers with comorbid conditions in DFU patients.

Conclusion: In the near future, it would be interesting to find out whether this high plasma HSPs precedes in early wound healing mechanism and will have a relationship with type of infections and/or nature of therapy for infection in such patients.

Keywords: Diabetic foot Ulcer, plasma HSP-47, Correlation, Outcome

[P-9]

Carbon Tetrachloride (CCl₄) - Induced Hepatotoxicity in Rats: Curative role of Dawa-ul-Qust (A Unani Compound Formulation)

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ABSTRACT

Researchers have investigated several plants for their efficacy in different diseases and have demonstrated their activity in extract(s) and crude forms but compound formulations are always neglected and kept behind for their activity on different scientific parameters. Therefore, the present study was aimed to evaluate the efficacy of Dawa-ul-Qust, a compound formulation, frequently used in the various hepatic ailments, on the liver functions in CCl₄ induced hepatic injuries. Enzymatic activities that are AST, ALT and TBARS and microscopic appearance of liver sections were used as tool for hepatocurative study. Elevation of these marker enzymes and changes in the structure of liver sections were taken as the index of hepatic injury. Carbontetrachloride was injected in the form of suspension intraperitoneally in a dose of 0.2 ml/100 gm on 2nd day of study in all groups except group I (plain Control). Silymarin in a dose of 10 mg / 100 gm was used as standard drug orally. The test drug, Dawa-ul-Qust (DQ) was given in the dose of 50 mg/100 gm and 7.49 mg/100 gm of body weight respectively in crude as well as in extracts forms for 7 days. The greater concentration of MDA and higher level of SGOT and SGPT in CCl₄ treated animals exhibited the role of wide spread hepatic damage of CCl₄. While the test drug significantly (P<0.001) prevented the damage caused by CCl₄. The Histological examination of the liver of Dawa-ul-Qust treated animals with 50% aqueous extract showed less fatty changes and few inflammatory cells in comparison to the crude drug treated group, while the crude drug treatment was also showed less changes in comparison to the CCl₄ treated group. Treatment with 50 % aqueous extract of Dawa-ul-Qust effectively attenuated the alteration within the parameter of present study and accredits the hepatocurative role of Dawa-ul-Qust.

In-Vitro Experimental Study to Determine Antimutagenic Activity of Banafshah (*Viola odorata* Linn.)

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ABSTRACT

Mutations are the cause of innate metabolic defects in cellular system, triggering the morbidity and mortality in living organisms. A plethora of synthetic substances, apart from various genotoxic, physical and biological agents are known to act as mutagenic, co-carcinogenic and/ or carcinogenic agents. Since the mutagens are involved in the initiation and promotion of several human diseases including cancer, the significance of novel bio-active phyto-compounds in counteracting the pro mutagenic and carcinogenic effects are gaining credence. The anti-mutagens have been first reported almost four decades ago, and since then numerous studies have been carried out in order to identify compounds which might protect humans against DNA damage and its consequences.

The rich diversity of Unani drugs has not been systematically screened for Anti-mutagenic activity. Therefore, in the present study an important drug of Unani Medicine viz. Banafshah (*Viola odorata* Linn.-whole herb) having major class of phyto compounds for screening its anti-mutagenic property on selected strains of *Salmonella typhimurium* TA97, TA98 and TA100. The bacterial strains were maintained in frozen stocks and grown in broth as described by Maron and Ames. Strains were revived after every 15 days on Master plates supplemented with L- Histidine and D-Biotin. The *Salmonella* Histidine point mutation assay of Maron and Ames (1983) was used to test the antimutagenic activity by inhibition of mutagenic activity of the sodium azide by the test sample. The results showed a potent Antimutagenic activity of Banafshah which produced 98% inhibition of TA 97 and 96% for TA 98 at 50 µg/0.1ml/plate while 77 % for TA100.

Keywords: Antimutagenic, Ames Test, *Salmonella typhimurium*

Toxic Effects of Neem (*Azadirachta indica*) Extracts Against the Eggs and Adults of *Choroedocus illustris* (Acrididae) under Laboratory Conditions

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ABSTRACT

Neem (*Azadirachta indica*) of Meliaceae family is an Indigenous tree of India. The name *Azadirachta indica* is derived from a Persian term “Azad darakth” (“Free Tree”). In Ayurveda it is known the “Arishat” which means “relieving Sickness” in Sanskrit. The neem tree “*Azadirachta indica*” produces a plethora of triterpenoids, one of these is Azadirachtin, a complex compound with powerful insecticidal properties. In the present study, toxic effect of neem leaves, neem green seed coat, neem yellow seed coat and neem seed kernal were studied against eggs and adults of grasshopper *Choroedocus illustris* (acrididae). The concentrations of above components used were 0.005%, 0.01%, 0.025%, 0.05%, 0.1%, 0.25%, 0.5%, and 1.0% (v/v). The adult insects were allowed to feed upon the maize leaves. Our results showed that adults *C.illustris* (Acrididae) showed highest mortality of 82%, at concentration of 1.0% *A. indica* (Leaves), whereas, the least mortality was recorded nil (0.00%) at concentration (0.005%) of *A. indica* (Leaves). when eggs of *C. illustris* were treated with above neem extracts, the mortality of eggs was recorded highest (21.75%) at concentration of 0.005% and lowest (9.25%) at concentration 0.005% of neem green seed coat respectively. The least survival of egg was observed at neem seed kernel and green neem seed coat after 72 hours.

Key Words – *Azadirachta indica*, Neem Insecticides, *Choroedocus illustris*, Maize, NSK.

Wound Healing Potential of Unani Non-Pharmacopeial Ointment Using Albino Rats

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ABSTRACT

Unani medicine possesses a large number of single drugs and compound formulations which have wound healing potential. An experimental study was carried out in two different wound models (incision and excision) in albino rats of either sex, to investigate the wound healing activity of a non-pharmacopeial ointment prepared by mixing destructive distillate of “Raal” (*Shorea robusta*) and hydro-alcoholic extract of leaves of Henna (*Lawsonia inermis*) with melted ointment base (Vaseline and Hard Parraffin) at 40°C. The animals were divided into four groups of six rats each. In group III and IV 10% and 15% ointments were applied on wound Model whereas group II received standard ointment soframycin while group I was served as control. The healing of wound was assessed by the rate of wound contraction and period of epithelization in excision wound model and skin breaking strength. In incision wound model the wounds were traced on mm graph paper on 0, 3rd, 4th, 6th, 9th, 12th, 15th and 18th day. The group IV showed significant (P < 0.001) contraction of wound area as compared to rest of three groups. The animals of group III and IV also showed faster epithilization of wounds on 17th and 14th days, respectively as compared to control on 19th day and standard group on 16th day. The group IV showed more tensile strength (377±3.005gm). The study demonstrated that the test drug possesses significant wound healing effect.

Anticandidal Activity of Ornamental *Punica granatum* Linn. flowers

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ABSTRACT

Punica granatum is a shrub belongs to the family Punicaceae. It is often a cross pollinated food crop and has large forms of cultivars in various regions of the world. Double flower - *Punica granatum* is an ornamental type where the flowers have numerous petals and look like a rose flower and have a significant ornamental value. In Unani system of medicine, these flowers are called as “Gulnar” and are used as one of the ingredient in many formulations. Though the flower has significant therapeutic use since antiquity, many fundamental aspects including pharmacological activities are lacking. Hence, in the present study, the anticandidal potency of the flowers of *Punica granatum* was studied against the clinical strains of *Candida albicans* collected from various laboratories and hospitals. The alcoholic

extract of the flowers found to have good anticandidal effect and had a significant control against most of the strains tested. The MIC dosage level was also determined.

[P-14]

Antioxidant and Antimicrobial Activities of *Chenopodium ambrosioides* Var. *ambrosioides* Essential Oil and its Synergistic Interaction with Conventional Antibiotics

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ABSTRACT

The aerial part essential oil of *Chenopodium ambrosioides* var. *ambrosioides* (Chenopodiaceae) obtained by hydrodistillation was evaluated for its antimicrobial activity and synergistic potential with antibiotics. The antioxidant activity was also studied. The chemical composition was analyzed by GC-MS. The main compounds found are: α -Terpinene (23.77%), Ascaridole (14.48 %), p-cymene (12.22 %), Neral (8.08%), Geraniol (5.60 %), Isoascaridole (2.96%) and 2-carene (2.77 %). The antimicrobial property of the essential oil was studied against a large panel of Gram-positive and Gram-negative bacteria and *Candida* strains. The essential oil was active on tested bacteria, by producing inhibition zone diameters varying from 15.33 to 21.5 mm and from 7.17 to 19.17 mm, respectively, for Gram-positive and Gram-negative bacteria. The MIC values showed that Gram-positive bacteria were inhibited at low concentrations ranging from 1.25 to 5 mg/ml. In contrast, Gram-negative bacteria were inhibited at high concentrations ranging from 0.31 to 20 mg/ml for MIC values. Whereas, the most susceptible bacteria was *E. coli* inhibited at low concentration (0.31 mg/ml). Moreover, the tested essential oil showed high anticandidal activity, with inhibition zone diameters and MIC values ranging from 14.67 to 20 mm and from 0.075 to 2.5 mg/ml, respectively. *C. albicans* was the most sensitive yeast with the lowest MIC (0.075 mg/ml). For Gram-positive bacteria, the best combination was essential oil-Cefixime in which FIC_i ranged from 0.37 to 0.50 and showed a total synergistic effect (4 to 8 fold), followed by the combinations essential oil-kanamycin, and essential oil-ciprofloxacin which showed a FIC_i ranging from 0.37 to 0.75. For Gram-negative bacteria, the best combination was essential oil-ciprofloxacin, with FIC_i ranging from 0.28 to 0.75, thus recording remarkable reduction of MIC (2 and 64 fold). The combination of essential oil and fluconazole showed a total synergistic effect against *C. parapsilosis*, *C. krusei* and *C. glabrata* and decrease the MIC of fluconazole with a gain of 8 to 16 fold. Whereas, *C. albicans* was less sensitive to this combination with FIC_i value of 0.75 (partial synergetic effect). The essential oil exhibited a high antioxidant activity with IC₅₀ values of 3.84

mg/ml, 3.03 µg/ml and 6.02 µg/ml for DPPH, β-carotene-linoleic acid and reducing power activities, respectively.

The results showed that the essential oil exhibited a high antimicrobial and antioxidant activities and a synergetic interaction between antibiotics. These findings are very promising; it can be useful for pharmaceutical treatment and natural therapies.

Keywords: *Chenopodium ambrosioides*, Essential oil, Antimicrobial activity, Antioxidant activity, Synergistic interaction.

[P-15]

Synergistic Antibacterial Effects of *Nigella sativa* Seed Extract in Various Germination Phases with Antibiotics on Clinical Bacterial Strains

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ABSTRACT

For the treatment of bacterial diseases various chemical formulations and antibiotics are being used frequently. After massive and repetitive use of drugs against microbial strains many strains have developed multiple resistance against these drugs. In the search of soft alternatives, researchers have always tried to explore better options for the patients and have utilized diverse strategies to combat the infectious diseases. In the modern era medicinal plant products have been the main choice of researchers to fight with the drug resistant bacterial strains. Keeping these facts in the mind we made an effort to evaluate the efficacy of methanol extract of *Nigella sativa* in different germinating stages individually and in combination with antibiotics; Streptomycin, Ofloxacin and Erythromycin against some clinical isolates of *Escherichia coli*, *Klebsiella pneumonia*, *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Proteus mirabilis*. It has been observed that extract of *N. sativa* enhanced the activity of all the antibiotics used. This activity enhancement is due to the presence of Thymol and Thymoquinone in methanolic extract of *N. sativa*. Results obtained from this study suggest that *N. sativa* extracts from different germination phases could be a promising source of metabolites with antibacterial modifying activity and can be used as adjuvant to antibiotic therapy against normal and multidrug-resistant bacteria.

Anti-Oxidant Activity of *Tinospora cordifolia* on Iron Induced Genotoxicity in Wistar Rats

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ABSTRACT

Medicinal plants constitute to be one of the main sources of new pharmaceuticals and health care products. *Tinospora cordifolia*, known as Guduchi is widely used in veterinary folk medicine/ Ayurvedic system of medicine for its general tonic, antiperiodic, anti-spasmodic, anti-inflammatory, antiarthritic, anti-allergic and anti-diabetic properties. The plant is used in Ayurvedic, "Rasayanas" to improve the immune system and the body resistance against infections. The root of this plant is known for its antistress, anti-leprotic and anti-malarial activities. The objective of the present study was to determine the anti-oxidant activity of *T. cordifolia* against genotoxicity induced by iron. Iron is an essential nutrient but when present in excess, it poses a threat to cells and tissues. The deleterious effect of excess iron is related to its ability to generate reactive oxygen species via the Fenton reaction. The net effects are DNA damage, impaired synthesis of proteins, membrane lipids and carbohydrates, induction of proteases and altered cell proliferation. Bone marrow preparation was made for micronucleus test according to Schmid and chromosome preparations were made following the procedure described by Preston *et al.* Our experiments showed that damages induced by iron induced free radicals were significantly ameliorated by *T. cordifolia*. The study provides evidence that *T. cordifolia* inhibits *in vivo* genotoxicity of iron sulfate in rats.

Keywords: *Tinospora cordifolia*, Iron, Genotoxicity, Chromosomal Aberration, Micronucleus Test

Concept of Ibn-Sina about Infectious Diseases and Development of Effective Unani Formulation for the treatment of *Shigellosis*

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ABSTRACT

Objective: To decrease the prevalence of *Shigellosis* in the community by effectual, effective, efficacious and cost effective Unani medicines. *Shigellosis* (caused by *Shigella* species) is a worldwide disease particularly common in developing countries and transmitted by poor public hygiene and sanitation.

Ibn Sina in his *Al-qanun fi al-tibb* (Canon of Medicine, 1020) discussed the contagious nature of infectious diseases such as phthisis and tuberculosis, the distribution of diseases either by water and soil or sexually transmitted diseases. He argued that infection resulted when a bodily secretion is contaminated by foul foreign earthly bodies before being infected. This is interpreted by some as the first descriptions of bacteria and viral organisms. Such may not be the case, especially since he did not view these organisms as primary causes of disease and was merely inferring their existence; in the absence of microscope, he would not have been able to see them. Ibn Sina was sufficiently convinced that there were contagious diseases, though, that he introduced quarantining as a means of limiting the spread of contagious diseases.

Ibn Sina, emphasized that health is a dynamic balance between an individual and his environment. One needs to focus on giving appropriate consideration to an individual's overall physical, mental, spiritual and emotional well-being and life style values before recommending treatment. We need to follow these guidelines and give equal importance to applied scientific research and traditional humanism, in taking care of our patients.

Materials and Methods: The clinical evaluation involved 250 patients living in poor areas of Karachi were selected after the thorough examination. The patients were divided into two groups control and test group. Controlled group received allopathic treatment Ciprofloxacin one capsule two times (500 mg two times per day for 7-10 days) while the test group received Shigel Dysent capsule (2 capsules three times per day for 7-10 days).

Results: Clinical symptoms abdominal cramps, abdominal pain, tenesmus, anorexia, nausea, flatulence in both groups before and as follow up was recorded as 1-absent, 2- mild, 3-moderate, 4- severe. There were improvement in clinical condition of the patients with reduction in faecal leukocytes, erythrocytes and eradication of the organism with significant improvement observed in patients getting ShigelDysent (coded herbal formulation) capsules as compared to the control group receiving Ciprofloxacin.

Conclusion: It has been evaluated that ShigelDysent is effective in comparison with Ciprofloxacin for the treatment of bacillary dysentery (*Shigellosis*). There were no clinical manifestations associated with the treatment by ShigelDysent and this is found to have good acceptability by all treated patients.

Keywords: *Shigellosis*, Micro-organisms, Ibne Sina, Clinical efficacy

Antimicrobial activity & Microbial Load Determination of different Market Samples of Laooq Sapistan Khyaar Shambari

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ABSTRACT

Microbial Load Determination has now become one of the important parameter to be assessed in any Single Drug or Compound Formulation intended to be used for any disease by World Health Organization (W.H.O).

In the present study a Compound Unani Drug Formulation *Laooqe Sapistan Khyaar Shambari* (LSKS) was selected on the basis of its use in Infectious Diseases as mentioned by our Hakims in the classical literature and continuous commercial marketing of the same formulation by different Unani Pharmaceutical Companies for the determination of the Microbial Load as per the guideline of W.H.O. Four different LSKS samples: two from the market viz. from Hamdard Laboratories and Rex Laboratories while two samples in which one was Self prepared sample of LSKS with Sugar and other LSKS Non-Sugar sample.

Total viable aerobic count (TVC), Total Bacterial Count (TBC) and Total Fungal Count (TFC) along with the tests for Specific micro-organisms was done viz. *Enterobacteriaceae* and certain other gram-negative bacteria, *Escherichia coli*, *Salmonella* spp., *Clostridia* and *Shigella* were analyzed and it was found that the LSKS samples from Hamdard Lab, Rex Lab were having a very minimized amount of microbes within the limited lines which is acceptable by WHO while both the LSKS self preparatory samples with Sugar and without sugar does not showed any presence of the microbes.

Key Words: Laooq Sapistan Khayar Shambari, Microbial Load.

Microbial Load Determination in Some Market Samples of Unani Drugs

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ABSTRACT

WHO has emphasized the need to ensure quality control of medicinal plant products by using modern techniques and applying suitable standards so that the safe and stable herbal drug may be marketed provided its therapeutic use is well documented in Indigenous systems of medicine.

Microbial Load determination is one of the major parameters which has now been made mandatory by WHO to be evaluated before dispensing any drug in the market as a part of its Safety studies. In the present study two unani herbal drugs viz. *Asl-us-soos* (*Glycyrrhiza glabra* Linn), *Gul-e-Zoofa* (*Nepeta bracteata* Benth.) were selected for the assessment of their Microbial Load using Total Plate Count Method and Serial dilution Method. Total bacterial

and total fungal count present in the sample was evaluated and the tests for specific micro-organism like *Enterobacteriaceae* & certain other Gram negative bacteria like *E.coli*, *Salmonella*, *Clostridia* and *Shigella* were also done using WHO Guidelines 2005.

Total bacterial count by Plate count Method in Asl-us-soos was 45 colonies while in Gul-e-Zoofa 41 colonies were present in the highest dilution 1000 μ l which is far less than the limit value of 300. The total fungal count was still lower as only 9 colonies in Asl-us-soos and 16 colonies in Gul-e-Zoofa were found in the highest dilution of 1000 μ l. This was again found to be comparatively less than the contaminated limit value of 100. By Serial dilution Method the total bacterial and fungal count were found within normal limit. Whereas the specific bacteria viz. *Enterobacteriaceae*, *E.coli*, *Clostridia sp.*, *Salmonella sp.*, *Shigella* are concerned they were found absent in the samples. It can be concluded that the herbal drugs tested in the study are safe for use in respect of their Microbial Load and are free from infective organisms.

[P-20]

Evaluation of Steroidal and Metabolic Effect of *Tukhm-E-qurtum* (*Carthamus tinctorius* Linn. Seed)

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ABSTRACT

In the present study the hydroalcoholic extract of Seeds of *Carthamus tinctorius* was investigated for its steroidal and metabolic activity in albino rats of either sex in two different tests. In both the tests, the animals were treated with the test drug (100 mg/kg/p.o.) twice a day for three days and were sacrificed subsequently on day 4. Thymus gland was dissected out and weighed in the test for steroidal activity, while in the test designed for metabolic activity, liver was dissected out for glycogen estimation and blood was collected for the estimation of blood sugar, serum protein and serum cholesterol. The test drug reduced the thymus weight significantly ($p < 0.01$) as compared to the plain control. It also induced hyperproteinemic, hypocholesteraemic and liver glycogen increasing effect and increased the blood glucose level moderately. The findings suggest that the hydroalcoholic extract of seeds of *Carthamus tinctorius* possesses marked steroidal and metabolic activity. Steroidal effect may be one of the bases for its use in kidney diseases especially nephrotic syndrome like condition.

Keywords: Steroidal activity, Metabolic activity, *Carthamus tinctorius*

Herb-Drug Interaction and Role of Pharmacovigilance

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ABSTRACT

The pharmacovigilance plays an important role in determining risks associated with herbal medicine specifically arising due to herb-drug interactions. Many clinical studies and case reports have identified a number of herb-drug interactions. Drugs like warfarin, digoxin, cyclosporine, tacrolimus, amitriptyline etc. usually have a narrow margin of safety and a high potential to interact with herbal medicines. Some very commonly used herbal drugs such as garlic (*Allium sativum*), ginger (*Zingiber officinalles*), ginkgo (*Ginkgo biloba*), and ginseng (*Panax ginseng*) etc. are reported to interact with conventional drugs. The clinical consequence of herb-drug interactions may vary from moderate to serious adverse reactions. The multitude of pharmacologically active compounds in herbal drugs obviously increases the possibility of interactions to take place. Hence, the likelihood of herb-drug interactions is supposedly higher than drug-drug interactions. Pharmacovigilance whose purpose is to detect, assess, and understand, and to prevent the adverse effects or any other possible drug-related problems may prove very much helpful in this regard. The purpose of this paper is to impart significance of pharmacovigilance with respect to herb-drug interactions in the light of the published studies.

Key words: Herbal medicine; Drug interaction; Pharmacovigilance; Drug safety.

An Approach to Scientifically Validate Advia-e-Qalbia using Langendorff Perfused Heart Model

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ABSTRACT

The Langendorff perfused heart Model (LPHM) is one of the few isolated organ experimental models that have been used extensively. It was first applied by physiologists, biochemists and morphologists for the study of heart biology and proved very approachable model to test the effect of different cardiovascular drugs on the coronary vasculature, muscle contraction and heart rate. A variety of cardiovascular researchers still use this vital technique in myriad ways to investigate the heart, from the study of the effect of a single gene alteration on heart physiology, to novel therapeutic means to protect the heart from ischemia and other cardiac diseases insults.

Unani System of Medicine possesses a rich source of drugs from natural origin that have been used in cardiovascular diseases. Ibne Sina (980-1037) has also compiled all such

drugs (*Adviae Qalbia*) in his book “*Kitabul Advia-E-Qalbiah*” that consists of 63 drugs. But a handful amount of these has been evaluated scientifically for their use in cardio vascular diseases. So, as the need of the hour an approach should be put forward to corroborate the claims of our renowned Unani Physicians of using *Adviae Qalbia* using LPHM.

LPHM is based on the principle of retrograde flow in the aorta that closes the leaflets of the aortic valve and that does not permit the perfusion fluid to enter into the left ventricle. As a consequence, the entire perfusate enters the coronary arteries via the ostia at the aortic root. After passing through the coronary circulation the perfusate drains into the right atrium via the coronary sinus. The perfusion pressure during the experiment is kept constant by using a constant hydrostatic pressure of the perfusate. Coronary flow can also be evaluated by measuring timed volumes of perfusate draining out of the right atrium.

LPHM demonstrates that the heart receives its nutrients and oxygen from blood via the coronary arteries; cardiac functions are reflected by changes in the coronary circulation and can be widely employed in studies of myocardial function and responses to injury (e.g. ischemia).

Many important pharmacological effects of cardio-vascular drugs may be identified by using various drugs as experimental tools along with above mentioned hemodynamic parameters. Some of these pharmacological effects are Left Ventricular Pressure (LVP), Left Ventricular Diastolic Pressure (LVDP), Left Ventricular End Diastolic Pressure (LVEDP), Left Ventricular Developed Pressure (LVEDP), Heart Rate (HR), Coronary Flow (CF), Coronary Perfusion Pressure (CPP), Aortic Pressure (AoP), ECG etc.

Keywords: Langendorff perfused heart Model, *Adviae Qalbia*

[P-23]

An Overview of Ethic Friendly Non Mammalian Models

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ABSTRACT

In present scenario, due to ethical issues and certain advantages of non mammalian pharmacological models over the mammalian models, pharmacological researches going on a non mammalian models are appreciated. The smaller and genetically tractable models for instance *Danio rerio* (Zebra fish), *Drosophila melanogaster* (Fruit fly), *Caenorhabditis elegans* (Nematodes), and *Gallus gallus* (chicks) reflect the same physiological and pharmacological behavior as that of human being for certain ailments. Approximately 75% of human diseases genes have homologues in *Drosophila*. It is used in therapeutic discovery for central nervous disorder especially neurodegenerative disorders such as Alzheimer’s disease and Parkinson’s diseases and inflammatory disorders, cardiovascular diseases, cancer and diabetes. Zebra fish being a vertebrate as more human identical gene and is highly informative in studies investigating developmental processes because of their large, transparent embryo that mature outside the mother. And presence of some organs truly

homologues to humans e.g. liver, kidney and complete immune system. Easy drug administration and the low infrastructure cost are some of the other advantages of it over rodents. *Gallus gallus* (Chick) are extensively used for the studies pertaining to experimental embryology, diabetes, and metastasis. They are cost effective, time saving and easy to handle pharmacological models. So in this review an effort has been made to throw the light on these ethic friendly experimental models for pharmacological studies in Unani System of Medicine (USM).

Keywords: Non mammalian Models, Zebra fish, Fruit fly, Nematodes

[P-24]

Methodology for the Screening of *Musaffi Dam* Drugs in Animal Models

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ABSTRACT

Blood is specialized connective tissue consist of liquid substance known as plasma and formed element red blood cells (RBC), white blood cells (WBC) and platelets. In Unani Blood is regarded as mixture of *Akhlat* i.e. *Dam*, *Balgham*, *Safra* and *Sauda*. *Tabai Khoon* consists of *Akhlate latifa* (plasma) and *kaseefa* (corpuscles). *Akhlate latifa* have water, organic and inorganic substances while *Akhlate kaseefa* have *Kuriyate Humra*, *Kuriyate Baiza* and *Aqras-al-Dam*. RBC contains a pigment called *Humratuddam* (Hb) due to which the colour of blood is red. *Tabai khoon* is one in which all *Akhlat* are in normal proportion in terms of quantity and quality. It should be normal in colour, free from bad odour, *ufunat* and *humuzat* and moderate in viscosity. *Khoon ghair tabai* (*Fasade khoon*) develops due to impurities /disease in the blood which ultimately alter its *kammiyat* and *kaifiyat*. Alteration may be in RBC, WBC, Hb and Platelets, nature, viscosity, coagulation of blood etc. If we co relate these abnormalities with modern concept then all bleeding disorders and coagulopathy falls under *Riqqate dam*, all the thromboembolic disorders, polycythaemia, leukaemia and anaemia falls under *Ghilzate dam*, while septicaemia, toxemia; bacterial diseases can be correlated with *ufunat*.

Musaffiyat khoon drugs cause necessary changes and maintain the normal viscosity of the blood by their moderate heat; cold; dry and wet properties. These drugs are *Muaddil* and bring the quality and quantity of *Akhlat* or blood in equilibrium and produce *saleh khoon* by neutralizing the excessive heat of blood. Strengthen the defensive mechanism and eliminate toxins via sweat, urine, faeces etc. These drugs are mostly *muslah dam*, *hazim*, *Muqawwi Meda* and *Jigar* and boost the immune system. In the line of the above conceptual framework few experimental models are being suggested in this presentation i.e. effect of drugs on blood constituents, coagulation parameters, anemia, leukaemia, polycythaemia, thrombocytopenia and infections. So this preliminary study may serve as a tool for screening the *Tasfiya Dam* activity which is the broadest term for the effect of drugs in blood disorders.

Key words: *Fasade dam*; Blood disorders; Unani concept; Experimental study; *Tasfiya dam*.

Need of Modifications in Tests for Screening of Pharmacological Actions in Researches on Unani Medicine: Extent and Limitations

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ABSTRACT

Since the screening programme for pharmacological actions is based on molecular approach to specific actions and drugs of Unani medicine do not comply with single active principle related actions, so the tests used to screen the action of Unani drugs somehow are inadequate and incompatible. Actions of Unani drugs have been described with pharmacological approach of the effects they produce in humans after making the suitable *Qayas* (analogy) in relation to its probable *Mizaj* (temperament). The present tests employed for screening with their inherent issues of reliability, validity and generalisation from animal tests have got further issues when they are used as tools for screening in Unani drug claims. The specific issues which are encountered while using these tests will be discussed in this paper and probable modifications with the protocols will be attempted, so that the extent of use of these tests and their limitations are highlighted. The present study will be discussed with examples from the screening tests for some systems as a model for further studies.

Keywords: Pharmacological Screening, Qayas wa Tajruba, Validity of tests.

Botanical and Chemical Markers for 'Shankhahuli' (*Convolvulus pluricaulis* Choisy.)

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ABSTRACT

'Shankhahuli' botanically equated to *Convolvulus pluricaulis* Choisy. (Family- Convolvulaceae), is a prostrate and perennial herb found in waste grasslands throughout India, has been used in Unani system of medicine since centuries for the treatment of hypertension, brain disorders and as a tranquilizer etc. Therefore, the botanical and chemical evaluation of 'Shankhahuli' was designed with the aim to develop the identification and quality control markers of the drug 'Shankhahuli'. The present study dealt with the botanical including macro-microscopical characterization; physicochemical and phytochemical evaluation including TLC/HPTLC finger print profiling. Characteristic macro-microscopy showed white or pink coloured solitary or 2 to 3 flowers in short peduncle with pair of hairy bracts; leaf with paracytic type of stomata; stem with unicellular simple and glandular trichomes and pitted pith. Physicochemical data showed water and alcoholic extractive value 14.20 ± 0.023 and $9.13 \pm 0.042\%$ w/w, respectively, total ash and

acid insoluble ash were 8.06 ± 0.014 and $2.20 \pm 0.005\%$ w/w respectively. Phytochemical screening showed $0.865 \pm 0.025\%$ phenolics and $0.55 \pm 0.007\%$ flavonoids. TLC profile also showed characteristic band of blue colour at R_f 0.44 and greenish blue at 0.61 under UV 366 nm. In addition, the evaluation of chemical markers through HPTLC, showed ferulic acid (0.017 - 0.162 mg/g drug), caffeic acid (0.094 - 0.23), β -sitosterol (0.23 - 1.08) and lupeol (0.13 - 0.374) in the methanolic extract of whole plant. These parameters can be used for quality control marker of 'Shankhahuli'.

[P-27]

Quantitative Analysis of Saponins in a Polyherbal Unani Formulation Used in *Bafa* (Dandruff)

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ABSTRACT

Bafa (dandruff) is a common scalp disorder affecting almost half of the population at the prepubertal age of either gender and ethnicity. No population in any geographical region would have passed through freely without being affected by dandruff at some stage in their life. Dandruff (pityriasis capitis, seborrheic dermatitis confined to scalp) is a disease that has been around for centuries despite several treatment options. Although the exact cause of SD has yet to be known, *Malassezia* yeasts, hormones (androgens), sebum levels and immune response are known to play important roles in its etiopathogenesis. Since centuries, Unani medicine has been used in the treatment of *Bafa*. Keeping in mind the desirable action, the quantitative analysis for saponins of a polyherbal formulation used in *Bafa* was done. Saponins are high-molecular-weight glycosides, consisting of a sugar unit(s) linked to a triterpene or a steroid aglycone. Many saponins have detergent properties. Saponins lower the surface tension of aqueous solutions and therefore give stable foams when in contact with water. Antifungal activity related to the saponin content has been reported. The properties responsible for the interaction between saponins and cell membranes, attributes to their fungicidal and piscicidal action. Saponins have also been reported to have antimicrobial, cancer preventing and antiviral activities. In light of the importance of saponins in treatment of *Bafa*, the quantitative analysis of a unani polyherbal formulation was done by gravimetric method and significant results were found. Results and methods will be discussed in full length paper.

Keywords: *Bafa*, Dandruff, Ssaponins, Triterpene, Aglycone.

TLC Based Detection and Antioxidant Activity of Flavonoids from Traditionally Used Indian Medicinal Plant

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ABSTRACT

Traditional medicine is the main source of primary health care for developing countries. Plants have been the basis of traditional medicines all through the world for thousands of years and continue to deliver new cures to humankind; a countless deal of effort has so far focused on using available experimental techniques to recognize natural antioxidants from plants. Flavonoids are phenolic substances isolated from plants, with over 8000 individual compounds known. Most interest has been devoted to the antioxidant activity of flavonoids, which is due to their ability to reduce free radical formation and to scavenge free radicals. Therefore this study sought to identify and investigate the antioxidant activity of flavonoids in the selected seven Indian medicinal plants (*B. mukul*, *P. longum*, *L. nobilis*, *C. longa*, *C. roseus*, *B. diffusa*, *L. inermis*).

Methanolic extracts of above plants was prepared using standard protocol and dried on rotatory evaporator at 40°C. Extracts were then applied (5 µl) as a spot on TLC plate (F₂₅₄ 60 plates, Merck) to separate flavonoids using solvent system Acetone/Formic acid/Glacial acetic acid/Water in 100:21:21:5 ratio. Natural Product reagent was sprayed for the identification of flavonoids whereas DPPH solution was used for bioautography. Free radical scavenging activity and estimation of total flavonoid of selected plant extract was done using standard protocol.

Typical intense fluorescence in UV-365 nm is produced immediately after spraying the natural product reagent on pre developed TLC plates confirmed the presence of flavonoids in the plant extract. Further, based on the fluorescence type, the presence of Flavanols, Flavanones and phenol carboxylic acid were characterized in each extract. The compounds with radical scavenging activity were determined in situ by DPPH bioautography assay. All the plant extract showed white yellow spots/bands on a purple background. Calorimetric determination of flavonoid content of extracts varied from 32.51 to 95.38 mg Ru 10g⁻¹. TLC based antioxidant active extract analysed quantitatively based estimation revealed significant DPPH scavenging activity. The scavenging effect in terms of IC₅₀ value of methanol extracts with the DPPH radical is in the following order: *B. mukul* (48.61 µg) > *P. longum* (50.02 µg) > *L. nobilis* (53.98 µg) > *C. longa* (55.28 µg) > *C. roseus* (60.26 µg) > *B. diffusa* (61.53 µg) > *L. inermis* (62.61 µg) >> Ascorbic acid (8.26 µg) a dose dependent activity was found in the DPPH radical scavenging activity. It can be concluded that TLC based screening method of antioxidant determination is simple and provide dual function, separation of compound along with their activity and comparable with quantitative assays.

Keywords: Flavonoids, DPPH, Antioxidant, Bioautography, Medicinal Plants

Honey Standard Procedure MYTH & FACTS

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ABSTRACT

Honey is God gift to the human being and has been in use of many ancient civilizations for various purposes to treat different ailments, as a food, good medicine, and preservative. Its detection of purity is very difficult, because there is not a simple and accurate method available to identify and adulteration is very common. The folk people use some local methods to detect the purity of honey but no method is correct and accurate.

Some common myths among the people regarding to the purity of the honey includes; dogs do not eat honey, pure honey does not solidify, pure honey producing burning sensation in the eye if applied to the eye. These things are not true completely. Similarly, some wrong information has also been written in the books such as; Wax is the residue product of honey; honey is the extract of honey combs. This paper discuss the various techniques used by modern scientists and experts of traditional medicine to identify the honey and ascertain its purity.

Key words: Honey; Solidify; Purity; Wax.

Standardization of a Unani Pharmacopoeal Compound Formulation 'Majoon-e-Piyaz'

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ABSTRACT

In Unani System of Medicine the drugs derived from natural sources are used, the majority of them are plant origin 85 %, animal origin 10% and mineral origin 5% but like any other system of medicine the efficacy of Unani System of Medicine also depends on potential and purity of the drugs used. To develop a mechanism for quality assurance of natural compound to ensure the purity of crude drugs material and its standardization is essential. Standardization and quality control are the key factors in regulating the therapeutic efficacy of Unani Herbal drugs. Organoleptic parameters are often insufficient in the quality assessment of Unani Herbal Drugs. The present study deal with compound Unani formulation of 'Majoon Piyaz' is compound formulation of NFUM Part I. It is a semi solid, dark brown colored compound formulation with sweet tending bitter in taste therapeutically used in Zof-e-Bah (Sexual debility), Jiryana (Spermatorrhoea) and Surat-e-Inzal (Premature

ejaculation). Majoon-e-Piyaz is a natural product and is absolutely safe as it does not produce any side effects. In standardization of drug, the drug investigated through different chemical method, their active principals are being worked out, their percentage composition are as follow Total ash 1.38%, Acid-insoluble ash 0.58%, Water-soluble ash 0.52%, Alcohol Soluble Extractive 12.60%, Water Soluble Extractive 70.16%, pH values of 1% aqueous solution 4.77 and 10% aqueous solution 4.58, Loss on drying at 105oC 17.06%. The Aflatoxin and Pesticidal residue are also estimated and reported that are not detected. In additin Heavy Metals, Microbial Load were done which are with in limit.

Key Words: Majoon Piyaz, Standardization, Quality control, Unani Formulation.

[P-31]

Phytochemical Screening and Spectrophotometric Estimation of Total Phenolic Content in Unani Herbal Drug Asl-us-soos (*Glycyrrhiza glabra* Linn.)

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ABSTRACT

The aim of the present study was to investigate the phytochemical constituents present in the *Glycyrrhiza glabra* stolon and root and to estimate the total phenolic content in ethanolic and aqueous extract. The presence of alkaloids, carbohydrates, flavonoids, glycosides, tannins, proteins, phenols, sterols, and resins was revealed by the qualitative examination of *Glycyrrhiza glabra* stolon and root. The amount of total phenols was analyzed using a spectrophotometric technique, based on Folin Ciocalteau reagent. Gallic acid was used as standard. The standard curve equation was $y=0.007x+0.186$ and $R^2=0.992$. The phenolic content in alcoholic and aqueous extract was found to be 244.85 and 232.0 mg/g gallic acid equivalent (GAE), respectively.

Keywords: Phytochemical screening, Total phenolic content, Spectrophotometer, *Glycyrrhiza glabra*, Gallic acid

Accelerated Stability Studies of *Sufoofe Sailan*

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ABSTRACT

Background and objective: *Sufoofe sailan* (SS) is a polyherbal powder preparation used in Unani medicine to treat gynaecological diseases. It is observed that SS degrade early as it is in the form of powder; however, stability study of SS was not carried out till date. Therefore the objective of the present study was to evaluate the accelerated stability of SS.

Methods: Finished formulation of SS was packed in three air tight transparent PET containers. One pack was analyzed just after manufacturing and remaining two packs were kept in stability chamber at 40±2°C/75±5%RH. Of which one pack was analyzed at the end of three month and another pack at six month. Organoleptic, physico-chemical, microbiological parameters along with HPTLC finger printing were carried out to evaluate the changes in SS.

Results: Organoleptic characters showed no significant change in accelerated stability condition. All physico-chemical parameters showed changes less than 5%, HPTLC finger printing showed minimum changes and microbial studies were in conformity of the WHO guideline.

Conclusion: SS qualified to the ICH Guideline for accelerated studies of pharmaceutical products. Thus the shelf life of SS may last for 20 months.

Keywords: Accelerated stability study; Shelf life; *Sufoofe sailan*; Unani system of medicine.

Standardization of Unani Drug-Jawarish-e-Usqf

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ABSTRACT

Objective: To standardize the Unani drug Jawarish-e-Usqf which is used therapeutically in the ailments of Munaqqi-e-Asab, Laqwa and Qulanj.

Materials and methodology: Jawarish-e-Usqf was prepared in three different batches as per the guidelines of NFUM (Part-IV). Present study was aimed to evaluate the powder microscopical studies to identify the raw drugs present in the formulation, physico-chemical data to lay down pharmacopoeial standards, TLC to develop the fingerprints and WHO parameters to ascertain quality of the drug.

Results: Powder microscopical studies showed the presence of numerous starch grains, non-lignified septate fibres, reticulate vessels (Zanjabeel); fibres lignified not over 30 μ breadth, stone cells horse shoe shaped (Darchini); large mesocarpic parenchyma cells with corner thickening (Aamla); pollen grains tetrahedral upto 20 μ , fragments of anther wall (Qaranfal); tracheidal cells with scalariform thickening upto 50 μ (Bisfayej); endosperm cells filled with starch grains and crystalloid proteins (Jauzbuwa); perisperm cells with angular walls filled with starch grains (Filfil Siyah); group of bulbous perisperm cells packed with starch grains (Heel Kalan); vessels with pitted thickening; rosette of calcium oxalate crystals (Turbud). The physico-chemical data showed that the drug contains moisture (18.51%), total ash (0.69%), acid insoluble ash (0.022%) solubility in alcohol (25.46%) and water (64.55%). TLC study showed various spots at 254nm, 366nm and visible light (V-S reagent). The quality control study revealed the absence of microbial load, aflatoxins, heavy metal and pesticide residues.

Conclusion: The evaluated standards will be useful for laying down the Pharmacopoeial standards of Jawarish-e-Usquf.

[P-34]

Standard Manufacturing Procedure of *Qurse Tabasheer* – A Herbomineral Unani Antidiabetic Formulation

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ABSTRACT

Introduction: *Qurse* (Tablet) is one of the most suitable dosage forms due to its easy portability, stability and accuracy of dose etc. Unani tablets contain diverse crude drugs and require specific manufacturing procedures. In this work *Qurse Tabasheer* containing six ingredients viz. Tabasheer (Siliceous concretions), Gule Surkh (*Rosa damascena* Mill. flower), Gulnar (*Punica granatum* Linn. flower), Tukhme kahu (*Lactuca sativa* Linn. seeds), Tukhme khurfa (*Portulaca oleraceae* Linn. seeds) and Gile Armani was taken up for study. An attempt has been made to develop standard operating procedure (SOP) for its manufacturing stages.

Materials and Methods: Ingredients were identified by the experts. For process standardization total 18 batches were generated for the optimum working process related to the powder size, quantity of binder, granulation, temperature and duration for drying and compression on the basis of trial and error. All the batches were assessed three times for friability, hardness and disintegration time and final ideal batch was selected on the basis of normal set parameters. An ideal working condition was documented as SOP for manufacturing procedure. This final ideal batch was again repeated to check the reproducibility.

Results: Friability, hardness and disintegration time of selected final ideal batch and repeated final ideal batch was (0.0730 \pm 0.01764, 0.09 \pm 0.0057), (4.10 \pm 0.050, 4.03 \pm 0.087) and (26.16 \pm 0.5376, 25.57 \pm 0.4860) respectively and it was found within the set limit. Pre-compression parameters were fine, weight of tablet was 793.7 \pm 4.755 and weight variation was <5%.

Conclusion: This work may be of utility in improving the quality when comparing parameters as it shows reproducible results. This SOP may be used for future reference for production of ideal Qurse *Tabasheer* quality wise.

Key words: Standard manufacturing procedure, *Qurse Tabasheer*, Unani, Tablets

[P-35]

Standardization and Safety Evaluation of Polyherbal Formulation “Kabideen (Syrup)”

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ABSTRACT

Standardization is of growing concern for establishment of a consistent biological activity, chemical profile, safety and quality assurance of traditional drugs. In the present study a polyherbal unani formulation “kabideen”, manufactured by Dawakhana Tibbiya College A.M.U, Aligarh was taken to establish its physiochemical standardization and to evaluate its safety profile. The various parameters studied in this communication include ash values (acid insoluble and water insoluble), extractive values (aqueous and alcoholic extract), pH values of 1% and 10% solution, viscosity, specific gravity, refractive index and sugar percentage of the formulation. The qualitative and quantitative estimation of various constituents’ i.e alkaloids, amino acids, flavonoids, glycosides, phenols, proteins, resin and sterols /terpenes and thin layer chromatographic studies were performed.

In addition to these parameters, the safety profile of kabideen was done to evaluate the presence of heavy metals (lead, mercury, arsenic and cadmium), to count the microbial loads (total bacterial, total yeast and mould count) and to estimate the pesticidal residue and aflatoxin in kabideen syrup.

[P-36]

Standardization of a Non Pharmacopoeial Majoon Used in Unani Medicine

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ABSTRACT

To ensure the therapeutic efficacy of herbal drugs their proper identification & standardization is mandatory. All single drugs and compound formulations should be standardized using appropriate techniques so as to ascertain their quality standards. In the present paper, the work on standardization and quality control of a Unani Non Pharmacopoeial Majoon (NPM) containing ten ingredients is reported. Standardization was made on the basis of physicochemical and analytical parameters laid down by National Unani Pharmacopoeia Committee. The parameters studied includes alcohol soluble content

11.46±0.446, water soluble content 19.47 ±1.120, successive extractive values viz. petroleum ether 0.683±0.025, diethyl ether 0.193±0.01, chloroform 0.589±0.011, ethanol 53.926±2.27, and aqueous 14.363±1.36, total ash 1.83±0.166 , acid insoluble ash 0.66±0.166, water soluble ash 1.3±0.05, moisture content 12.1±0.42, specific gravity 1.282±0.026, viscosity at 70% 603.833±22.540, pH values of 1% solution 6.306±0.24 and 10% solution 9.28±0.193. The qualitative analysis of various phytochemicals was estimated that revealed the presence of phenols, tannin, sterols/terpens, flavonoids and reducing sugar. The TLC profile of this non pharmacopoeial formulation was also performed.

Keywords: Standardization, Non-Pharmacopoeial Majoon, Compound formulation, Physico-chemical study.

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Standardization of an Unani drug “Bisehri Booti” (*Aerva lanata* Linn.)

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ABSTRACT

Aerva lanata (Family Amarantheceae) also known as Bisehri booti, has been mentioned in few classical Unani literature and is used frequently by Hakeems of Western Uttar pradesh in different urinary diseases. In Unani literatures it has found only fractional descriptions where mainly organoleptic characters have been described. Till now Unani physicians have not adopted scientific methods for identification and standardization of a numbers of Unani drugs including *A.lanata*. The present study was therefore designed to evaluate the preliminary phytochemical investigation of *A. lanata* on qualitative parameters in which it was found that alkaloids, flavonoids, amino acid, glycerol, phenol, resins, saponins, tannins and protein were present while Sterol/Terpenes, Starch, Carbohydrate were absent. Solubility alcoholic (1.67%) and aqueous (3.07%) , pH at 1% (7.39) and 10%(6.36), moisture content (4.2%), Total Ash value (14.966%), loss of weight on drying (5.92%), Bulk density (39.8%), Successive extractive values Petroleum ether (2.92%), Diethyl ether (0.22%), Chloroform (0.38%), Acetone (0.27%), Alcohol (9.27%), Water (14.38%), Non successive extractive values Alcoholic (11.98%) and aqueous (12.69%) were recorded. These parameters may help to standardize the test drug.

Key words: Bisehri booti, Standardization

Standardization and Antimicrobial Study of Irsa (*Iris ensata* Thumb.)

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ABSTRACT

Physicochemical and Phytochemical Standardization is considered a prerequisite for the assessment of biological activity or determination of biological standards of the plant material. Therefore, a study was designed to standardize Herbal Unani Drug Irsa (*Iris ensata* Linn.) on Physico-Chemical parameters and Anti-microbial activity of the test drug was also determined.

The extractive value determined in different solvents were pet. Ether (2.9%), di-ethyl ether (4.58%), chloroform (2.20%), acetone (3.54%), alcoholic (10.03%), aqueous (14.13%); Solubility: Water (9.44 %) & Alcohol (1.16 %); Moisture contents (3.45 %), Total Ash values (8.94%), pH of 1% (6.76) & 10% solution (6.16) and loss on drying (5.3%). The Phytochemical Analysis revealed the presence of almost all the phyto-constituents in the test drug sample i.e alkaloid, flavonoid, glycoside, carbohydrate, tannin, protein, amino acids, starch and resins.

Zone of Inhibition (ZOI) was taken as a criteria for the assessment of its antimicrobial property by using Kirby Bauer's disk diffusion Method and Agar well Method (CLSI Guidelines, 2000) against bacterial strains of *S. aureus*, *B.cereus*, *S.mutans*, *C. diphtheria*. The results were compared with the standard Drug-Amoxycylav (30 µg) Himedia labs. The results showed a significant inhibitory zone against *S.aureus* and *S.mutans* and *C. diphtheria* while there was moderate effect was seen against *B.cereus*.

The study provides the standardization parameter that may be used to support the authentication of the drug material and by strong anti-microbial activity confirms the claims of Unani Physicians for its use in Infectious diseases.

Keywords: Standardization, Antimicrobial, *Iris ensata*

Quality Assurance of Saffron (*Crocus sativus* Linn.)

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ABSTRACT

Saffron (*Crocus sativus* Linn.) is a high priced crop used in Indian system of medicine, food and cosmetic industries. It is cultivated mostly in Pampore district of Jammu & Kashmir in India, accounting for 99% of the total production in India. Due to increased demand, poor economics of production and high cost, attempts are made to adulterate saffron with various substances like *Carthamus tinctorious*, corn silk, calendula spices, oil, glycerin and various

material coloured with coal tar and dyes etc. Consequently the safety and efficacy of saffron have been degraded significantly and it became an important issue in view of consumer protection, quality assurance, active properties and economic impact. Lack of knowledge regarding various tests and techniques that can be used to confirm its authenticity are of major concern.

In the present study we will discuss various methods as acid test, organic dyes test, Thin layer chromatography (TLC), Spectrophotometry test etc. to confirm the authenticity of saffron.

Key words: Saffron, Assurance, Adulteration

[P-40]

Comparative Analysis of Alkaloids of Datura Leaves Using Cold and Hot Methods of Extractions

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ABSTRACT

Extracts of medicinal plants and their alkaloids have been a major source of therapeutic agents since a long time to cure health ailments. A number of instruments such as Soxhlet apparatus, Magnetic Stirrer, Shaker, etc. are used for the extraction using Cold method or Hot Method.

But either the alkaloid or extract obtained by all methods gives an equivalent value or not is a major question of concern, as all therapeutic effect of any natural drug formulation depends upon the extract. So in the present study we have selected Datura (*Datura stramonium* Linn.- Solanaceae Family) leaves, a well known drug for determination of its major alkaloidal content by Cold and Hot method of extraction.

Alkaloids were extracted as method described by Paech et al., 2005. It was found that by Hot method of extraction the alkaloidal percentage was more as compared to the Cold method. Qualitative analysis, TLC and Quantitative Analysis using Spectrophotometer was done to confirm the analysis.

Exploration of Active Herbal Ingredients and its Standardization as Anti-Malarial Chemotherapeutic Drug

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ABSTRACT

Malaria is the most important and devastating parasitic disease worldwide. More than 800 million cases and at least one million consequent deaths are reported to occur annually all over the world. In India more than 9 million people are affected by malaria every year and about 50 thousand deaths occur due to it. *Plasmodium falciparum*, the most widespread etiological agent for human malaria has shown itself capable of developing multidrug resistance to standard anti-malarials that has complicated its management and only a few drugs are now effective in the treatment of malaria. Medicinal plants have provided valuable and clinically used anti-malarials like quinine and artemisinin. In past few years, plants have been intensively investigated for obtaining new anti-malarial agents. Several compounds containing unique structural composition have been isolated and characterized from natural resources. These natural compounds have exhibited promising anti-malarial activities both *in vitro* and *in vivo*. However, limitations such as toxicity, low bioavailability and poor solubility have restricted the scope of use for several natural products in humans. Nevertheless, nature provides novel leads, which can be developed into safe drugs by synthetic strategies as exemplified by artemether, and quinoline class of anti-malarials. Therefore, several plants provide useful bioactive synthons, which could be modulated to obtain anti-malarials active against not only drug-sensitive, but also drug-resistant and multi-drug resistant strains of *Plasmodium*. However, still there are vast unexplored plant resources, which when systematically explored will provide additional new leads and drugs for malaria chemotherapy. Therefore, it would be worthwhile to investigate and characterize their exact mode of action which can be exploited for the treatment of malaria.

Development of Quality Standards of *Cassia tora*- A Unani Medicinal Plant

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ABSTRACT

Cassia tora (Leguminosae) is a wild crop and grows in most parts of India. According to Ayurveda and Unani systems of medicine the leaves and seeds are acrid, laxative, antiperiodic, anthelmintic, liver tonic, cardiogenic and expectorant. The leaves and seeds are

useful in leprosy, ringworm, flatulence, colic, dyspepsia, constipation, cough, bronchitis, cardiac disorders. Chemical component of *C. tora* are anthraquinones, chrysophanol, emodin, obtusifolin, obtusin, and beta-sitosterol. The present attempt has been undertaken to investigate physico-chemical parameters such as ash value, extractive value, moisture content, behavior of powder with different chemical reagents, fluorescence analysis, pH, preliminary phytochemical screening, & thin layer chromatographic analysis. Phytochemical screening of the methanol extract and different extracts shows the presence of carbohydrate, glycosides, alkaloids, steroids, flavonoids, tannins & phenols. Thin layer chromatography of different extract shows number of spots of different Rf values. The generated data will be useful for the standardization and to evaluate the purity, quality and safety of the drug.

[P-43]

Physicochemical and Qualitative Analysis of *Coccini cordifolia* Linn.

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ABSTRACT

Unani drug Kanduri (*Coccinia cordifolia*) root is one of the important herbs mentioned in the Unani Literatures. Azam Khan (1893AD) has described Kanduri for the treatment of renal diseases whereas Najmul Gani (2011AD) has mentioned its usefulness in *Kasrat-e-Baul* (Polyuria) along with other diseases. Unfortunately certain spurious material are being supplied in place of genuine kanduri.

In present study therefore, an attempt is being made to work on standardization and quality assurance of Kanduri (*Coccinia cordifolia*) that includes the parameters as recommended by National Unani Pharmacopeia Committee has been selected viz. Ash value (Total ash, Acid insoluble ash, Water soluble ash), Extractive values (successive), Solubility in alcohol and water, Loss on drying, pH at 1%, pH at 10%, Bulk density, Qualitative tests are also used for finalizing the marker compounds.

Key words: Kanduri, *Coccinia cordifolia* Linn., Extractive value, Ash value.

[P-44]

Standardization of Unani Drugs by Modern Techniques

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ABSTRACT

In the present era of globalization and development of a world market for traditional and herbal medicine, research & development is needed to promote the production and quality products of Unani in the form of drugs, food supplements and cosmetics. With the growing

awareness of health care and safety aspects, people are moving towards herbal products because they are cheap, reliable and have little side effects than the costly synthetic drugs, many of which have adverse effects and are beyond the reach of poor patients. Majority of the drugs are derived from plants but some are of animal or mineral origin. While considering the quality of drugs from plant origin, several analytical techniques have been developed. Chemical fingerprints obtained by chromatographic techniques are strongly recommended for the purpose of quality control of herbal medicines and its products and therefore be used for authentication and identification of the herbal products. There are many toxic substances present in herbs and finished products which are harmful even have adverse effects for human being; these toxic substances can be detected and identified by modern techniques. Therefore there is a need for scientific validation and standardization of these drugs for maintaining their quality and purity employing instrumental methods such as HPLC, HPTLC, GLC, GC-MSMS, LC-MSMS, Infrared Spectroscopy, Atomic Absorption Spectroscopy, ICP-MS, FTIR and polarography etc.

[P-45]

Characterization of Markers for Standardization of Unani Therapeutic Agents

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ABSTRACT

Unani therapeutic drug substances are based on singles and compound drugs containing many chemical constituents even in single entity.

Standardization of Unani drugs is not an easy task. A number of factors affects the plants and their chemical constituent like climate, soil, collection and drying condition. Most of Unani drugs used in different countries have not been evaluated scientifically, therefore documentation on the rational use is not available. The active principles of a number of Unani drugs were isolated and it was realized that clinical effects of the drugs such as opium, nux-vomica and rauwolfia could be attributed to their chemical compounds i.e. morphine, strychnine and ajmaline respectively thus it becomes possible to use different chemical compounds to standardize the respective drugs. Characterization of the makers by hyphenated techniques like HPLC-MS, GC-MS, LC-MS, etc will be discussed in full length paper.

DNA Markers: A Complementary Pharmacognostic Tool

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ABSTRACT

Unani formulations have reached extensive acceptability as therapeutic agents for several diseases. But adulteration and controversy over authentication of Unani herbal drugs is a major concern and the development of authentic analytical methods for its standardization is a major challenge for Unani researchers. Although many sophisticated pharmacognostical techniques are adopted, Genomic fingerprinting has a very promising role. Since genetic composition is unique for each individual and DNA identification is less affected by age, physiological conditions, environmental factors, harvest, storage and processing methods. It has been used widely for the differentiation of plant individual, genus, homogeneity analysis, and detection of adulterants of other species or varieties that are morphologically and/or phytochemically indistinguishable. Various types of DNA-based molecular techniques are utilized to evaluate DNA polymorphism like hybridization-based methods, polymerase chain reaction (PCR)-based methods and sequencing-based methods; of which Sequence characterized amplified region (SCAR), AP-PCR, RAPD (Random amplification of polymorphic DNA) and RFLP (Restriction fragment length polymorphism) have been successfully applied for this purpose. Although considerable progress has been made in DNA marker technology, applications of these techniques for Unani formulations to ensure the desirable quality remain underutilized. Consequently, DNA fingerprinting can also be used as a complement tool as it ensures presence of the correct genotype but does not reveal the contents of the chemical constituents. Hence, DNA analysis along with other pharmacognostic techniques can be used for standardization of Unani drugs.

Keywords: DNA fingerprinting, Standardization, Pharmacognosy, Unani formulation

Incorporation of Recent Pharmacognosy Techniques in Standardization of Unani Medicine

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ABSTRACT

According to WHO, about 80% of the world population uses herbs and traditional medicines for fulfilling their primary health care needs as these drugs are easily available at low cost, safe and people have faith in them.

Standardization of herbal drugs is a dynamic phenomenon which requires input from various branches of life sciences including botany, plant physiology, pharmacology,

pharmacognosy, biochemistry, toxicology, biotechnology, drug development and industrial regulatory affairs. Standardization is essential in order to assess the quality of drugs. The quality assessment of herbal drugs is of paramount importance in order to justify their acceptability in modern system of medicine and this can be achieved only if the herbal products are evaluated and analyzed using some of the modern techniques of standardization such as UV-Visible, TLC, HPLC, HPTLC, GC-MS, Spectrofluorimetric and other methods.

WHO, in number of resolution has emphasized the need to ensure quality control of medicinal plant products by using modern techniques and applying suitable standards. This paper will discuss different types of pharmacognosy techniques and their relevance in standardization of Unani medicines.

[P-48]

A Reliable Standardizing Technique: Chromatography

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ABSTRACT

Chromatography is a tool for identification, authentication and quality control of herbal drugs all over the globe. It is a very unique separation process done by distributing the components of a mixture between two phases, a stationary phase and a mobile phase. A chromatographic fingerprint illustrates the specific properties of the phytochemical constituents of crude drugs and/ or finished products. There are two main types of this technique, gas chromatography (GC) and liquid chromatography (LC) based on stationary phase used. Majority of Unani compound formulations comprised of non-volatile ingredients for which LC (TLC, HPLC) is used whereas for volatile drugs GC is best. With better analytical methods, the quality and safety of these medicines can better be controlled and regulated to ensure patients' safety. Chromatography serves as a promising quality control tool and successfully demonstrates both similarities and differences between various drugs. Thus, through Chromatographic pattern recognition, authentication and identification of herbal medicines can be accurately done and hence it is a reliable and appropriate method of standardization for Unani drugs.

Keywords: Quality control, Chromatography, Phytochemical Constituents, USM.

Standardization of Unani Drugs: A Need of Globalization Era and its Future Trends

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ABSTRACT

Unani System of Medicine is mainly based on herbal drugs. These drugs are used since ancient time for the treatment of disease. In this era of globalization, there is growing focus on unani drugs in solving health care problems. For effective treatment of disease with these herbs, we should have to focus on standardisation. Herbal drug technology is used for converting botanicals materials into medicines, where standardization and quality control with proper integration of modern scientific techniques and traditional knowledge is important. Standardization of drugs means confirmation of its identity and determination of its quality and purity. Worldwide need of herbal medicine has resulted in growth of natural product markets and interest in unani systems of medicine. With this increase in demand of unani drugs creates a possibility of adulteration and substitutions. At present various techniques and advancement like photometric analysis, thin layer chromatography [TLC], high performance liquid chromatography [HPLC], and gas chromatography [GC], DNA Fingerprinting are available for standardization. By the use of these techniques and advancement we can achieve the goal of standardization of unani drugs.

Key words: Standardization, Unani drugs, Modern techniques and Advancement

Integration of Recent Techniques in Standardization of Unani Drugs with Reference to Certain Studies Carried out at NIUM

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ABSTRACT

A number of controversial drugs are being sold in herbal drugs market explicitly. Consequently, problems such as adulteration, quality inconsistency, and controversy are challenging the wide acceptability of traditional systems of medicine. Standardization of these drugs, therefore, is of growing concern over ensuring quality, safety and efficacy. Although classical methods like color, odor, taste, smell etc. were enough for assessment of quality of drugs because old physicians were used to these physical tests, but nowadays, these methods alone are not sufficient because of lack of experienced personnel. However, if these methods are substantiated with modern analytical techniques, the latter will facilitate

evidence based criteria for selection of drugs. Most regulatory guidelines also recommend certain techniques for profiling of herbal materials. HPLC, HPTLC, spectrophotometry, Atomic absorption spectrophotometry, TGA, FTIR etc. have proved useful in this regard in certain studies. Keeping in view these facts, we have analyzed the usefulness of some of the above techniques and certain others in order make the best use of these instruments in standardization of Unani drugs. This paper will discuss the importance of use of modern techniques with special reference to certain studies carried out in the department of Ilmul Advia, NIUM, Bangalore.

Key words: Crude drugs, Standardization, Analytical techniques, Adulteration, Classical methods.

[P-51]

Research in *Ilmul Advia*: Current Trends & Future Prospects

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ABSTRACT

Ilmul Advia research is a burning issue in Unani Medicine nowadays. For this Purpose, Pharmaceutical Sciences may be used as a bridge between Modern & Unani System of medicine. With this, Unani system of Medicine will communicate to the world in the language of Modern technology. Scientific & Evidence Based data of Unani Drugs will make a changing horizon about this system & add one more feather in the cap of Unani System. He who plans for the future (by keeping an eye on past) & takes care of present attains success & he who is indifferent meet with failure.

This Paper comprehensively cover the recent trends about research in Ilmul advia like Identification , Standardization, Quality control, Authentication, Organoleptic Evaluation of Unani Drugs & active constituents with HPLC, HPTLC, Spectrophotometry & NMR Spectroscopy with a future prospects of Preclinical studies, Pharmacological Studies, Reverse Pharmacological Studies, Syndrome Characterization, Toxicity Studies, systemic Effects of Drugs , Pharmacovigilance Studies & Pharmaceutical Opportunities' present & a brief idea of Drug Discovery & Drug Development. Of course in the light of Indian Law for Research i.e. Schedule Y .ICMR Guidelines & CPCSEA Guidelines.

Quercus infectoria olivier (Mazu): A Unani Drug for Vast Pharmacological Action

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ABSTRACT

Maajuphal is considered as one of the most powerful vegetable astringents in Indian Medicine. The action of tannin found in it as major constituents is chiefly local, and is due to its power of coagulating albumen; it is therefore a useful application when the skin has been deprived of its epidermis by diseases such as intertrigo, impetigo and eczema, as it forms with the exudations a protective coating, and at the same time contracts the cells of the skin. It is used internally in the form of powder in chronic diarrhoea, internal ulcers, leucorrhoea and menorrhagia. Ibn-e-Sina's View: It is strong astringent hair wash with its juice and water, blackens hair. Application with vinegar is useful in stomatitis especially in children. Its drink is useful in intestinal ulcers and chronic diarrhoea. The principal chemical constituent of galls is tannin or tannic acid (Gallo-tannic acid) 50 to 60 or 70 percent and about 3 per cent of gallic acid. "Oak-bark contains up to 10% tannic acid to which it owes its effect".

Management of Osteoarthritis- Unani and Modern Concepts and Remedies

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ABSTRACT

Osteoarthritis is a common rheumatologic disorder. In Unani medicine, Osteoarthritis comes under the term *Wajaul Mafasil* (Waja-pain Mafasil-joints). It is also called as '*Hudar*' or '*Gathia*'. Men and women are equally affected, but some symptoms occur earlier and appear to be more severe in women. In modern medicine, common synonyms for Osteoarthritis include osteoarthrosis and degenerative joint disease. The word 'arthritis' means 'inflammation of the joints'. It is derived from two Greek words – (Athron-joints) and (Itis-inflammation). It is, generally, a chronic disease process. Arthritis occurs in various forms, the most frequent being Osteoarthritis and Rheumatoid arthritis. Osteoarthritis is a degenerative joint disease which usually occurs in the older age-group. Rheumatoid arthritis is a serious disease which affects not only the joints of the fingers, wrists, hips, knees, and feet, but also the muscles, tendons and other tissues of the body. Osteoarthritis is not an inevitable consequence of aging. It is an acquired degenerative process that can be managed effectively by Unani physicians. *Wajaul Mafasil* stands for Osteoarthritis, Rheumatism and Rheumatic arthritis. The diagnosis of Osteoarthritis is largely made by obtaining a detailed history and conducting a complete physical examination. The patients whose symptoms

persist despite appropriate treatment (patient education, drug intervention, exercise, modifications of daily activities and physical therapy), referred to the specialists should be considered. Unani single drugs and compound formulations are reported to be useful in Wajaul Mafasil will be discussed. This paper will briefly cover the diagnosis and treatment aspects of Osteoarthritis. Also the line of treatment in both Unani and modern medical therapies including new advances in the therapy will be critically reviewed and compared to the older treatments.

[P-54]

Relevance of Pap Smear Cytology in Gynaecological Diseases

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ABSTRACT

Pap Test also referred to as Surface Biopsy forms the part of the routine gynaecological examination of women. All females over the age of 35 years should undergo an annual check-up inclusive of the Pap test. Pap smear test is a screening test only for ruling out the pre-malignant and malignant changes, and other local conditions like Viral infections such as Condyloma acuminata, Herpes etc. A Pap test can detect about 98% Cancer of the cervix and about 80% of Endometrial Cancers. In per speculum examination of gynaecological patients, if there is a condition of *Ittehab* at the level of *Unqur –Rehm*, then Physicians must exclude it from the *Sartane- Unqur-Rehm*, and for this we use Pap Smear Screening Test. This Pap test is helpful in diagnoses of other pathological conditions like *Sailane-Reham*, *Quroohe-Reham*, Pus like discharges, *Bawaseere-Reham*, *Hikkatul-Reham* and many more. The paper contains the description of Pap test, its procedure and classification and above all its relevance in unani system of medicine. Positive tests require further investigations like colposcopy, cervical biopsy and fractional curettage.

KEYWORDS: Pap smear test, *Ittehab Unqur Reham*, *Sartane Reham*.

[P-55]

Pharmaceutical Evaluation of Transdermal activity of Henna Based Unani Contraceptive Formulation

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ABSTRACT

There is no denying the fact that population overgrowth needs medical attention in the developing countries like India. Already several contraceptive measures are available in

market and even surgeries are also advised. All these measures are not devoid of adverse effects and even in some circumstances they prove to be fatal. Finding an efficient, safe and user-friendly herbal contraceptive agent has become a challenge. Unani system of medicine has several contraceptive measures. A number of Unani *maaney-e-hamal* (contraceptive) agents in the form of single drugs and compound formulations find mention in the Unani classical literature. The Unani contraceptives are recommended for both- male and female as oral and/or topical dosage forms. A unique or novel contraceptive formulation based on Unani herbal ingredients, namely Henna (*Lawsonia inermis*), Pakhanbed (*Bergenia ciliata*), Sibr (*Aloe barbadensis*) and Chirchita (*Achyranthus aspera*) has antifertility or contraceptive potential. Its uniqueness lies in the fact that it is topically applied in the form of henna dyeing. Secondly, it is a temporary choice to abandon conception. This presentation is based on two-pronged strategy: (i) to ascertain its transdermal delivery, and (ii) evaluation of clinical efficacy with the sonographic evidence on a pilot basis.

Keywords: Unani contraceptive, *Maaney-e-hamal*, Henna.

[P-56]

Pharmaceutical Design and Development of *Hamool* in a Pessary Form for *Inzalaq-Ur-Raham* (Uterine Prolapse)

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ABSTRACT

Inzalaq-ur-Raham (Uterine Prolapse) is a common and complicated problem of multiparous and /or postmenopausal women. In conventional system of medicine, surgery is the only option for its cure. However, in Unani system of medicine, a number of formulations in different dosage forms have been practiced right from the period of Buqrat / Hippocrates for treatment of uterine prolapse. Of these, hamool is one of the popular dosage forms. In this study, a formulation of pessary was developed by using the extracts of some Unani drugs with different compatible bases. A special steel die has been casted to get the calibrated pessary of 2.5 cm in length and 3.0 grams in weight. Selection of pessary was done on the bases of stability and dissolution study. In the study, a new dosage form of pessary has been designed and developed, having advantages of being sterile, faster mode of action, user-friendly.

Keywords: *Inzalaq-ur-raham*, Uterine Prolapse, Hamool, Unani pessary.

Pharmaceutical Development of A Unani Mucoadhesive Vaginal Tablet: A Novel Approach

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ABSTRACT

The female reproductive tract inflammatory diseases / disorders especially related to uterus and cervix are common concerns of the female health. Several treatments are given for these situations in conventional medicine. In Unani system of medicine, a separate class of the Unani Drug Dosage Forms (UDDFs) have exclusively been developed for gynecological disorders/diseases, such as *hamool*, *firzaja*, *marham*, *rogan* etc. administered through vaginal route (*maslak-e-mahbil*). These UDDFs have been used since a long time and they show therapeutic efficacy, but there are some drawbacks as their application may cause erosion and irritation of the vaginal mucosa leading to further aggravating the situation, wastage of drug due to spilling from vagina, not user friendly and also having delayed effect due to erratic absorption. Thus, there is a need to design and develop an alternate, effective, safe and user friendly means to replace these classical dosage forms. Hence, in the undergoing study, a Unani mucoadhesive vaginal tablet has been designed and developed pharmaceutically for the treatment of female reproductive tract inflammatory diseases so as to combat drawbacks of the classical dosage forms. The mucoadhesive vaginal tablet has many advantages such as drug release at a sustained rate in the vagina for an extended period of time, sustained effect for a longer duration, easy and self- insertion, thereby, user friendly. It is an acceptable and preferable form of drug delivery for gynecological problems. This will be the first Unani mucoadhesive vaginal tablet based on a classical Unani formulation.

Keywords: Unani, Mucoadhesive vaginal tablet.

Unani Cosmeceutical Formulations (*Advia-e-Muzayyina*): An Overview

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ABSTRACT

Contrary to the common belief that cosmetics belong to the modern times. A matter of historical fact, well before the invent of modern cosmetics, the Arab physicians had laid the foundation of a new branch of medical science called as *Ilm-ul-zeenah*, (science of beauty, i.e. cosmetology). Islam has given an impetus to this branch of knowledge through the

teachings of Prophet Mohammad (pbuh) which recommend use of beautifying substances in general and perfumery in particular. The main objective of this study was to evaluate the concept of cosmetics and perfumery in Unani system of medicine and possibility of practical implications of Unani cosmeceutical formulations. An extensive description of different forms of cosmetics and perfumeries has been available in the vast Unani classical literature. The modern cosmetic and perfumery preparations are based on synthetic chemicals which have a lot of side effects. In Unani system of medicine, there are no such side effects found in a broad range of preparations derived from natural sources. Numerous formulations in different dosage forms are mentioned in the classical Unani literature not only for cosmetic purpose but for skin care too, thus, termed as cosmeceuticals. The famous formulations used are *ghaza*, *ghamra*, *ghaliya*, *ghusool*, *ubtan*, *kajal*, *kohal*, *khizab*, *mascara*, *nura*, *itr*, *roghan*, *marham*, *tila*, *zimad* etc. These formulations contain various Unani single drugs of plant, animal and mineral/metal origin, such as neem, turmeric pearl, aloe vera, amla, clays, almonds, cucumber to name a few most sought after drugs. These drugs have been scientifically validated to prove the claims of Unani medicine.

Keywords: Unanicosmeceuticals, Advia-e-Muzayyana.

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Redesigning of Powder Form of Unani Pharmacopoeial Preparation into Tablet and its Standardization

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ABSTRACT

Tablet is one of the most suitable and preferred solid dosage form used all over the world. Almost all drug molecules can be formulated as a tablet and the process of manufacturing of tablets is very simple, and flexible. One can administer 0.01 mg of a drug to 1 gm of a drug as a tablet by the oral route. Therefore, in the present study an anti-arthritic Pharmacopoeial preparation in powder form having ingredients Suranjan Talkh (*Colchicum luteum*), Zanjabeel Khushk (*Zingiber officinale*) and Elwa (*Aloe vera*) redesigned and modified for use in the form of Tablet (*Qurs*) and standardized. Tests for weight variation, uniformity of diameter and thickness, hardness, disintegration time and friability of tablets were conducted for standardization and the values obtained indicated the compliance with the pharmaceutical standards. HPLC profile of tablet and qualitative analysis of chemical constituents present in the tablet were also determined. Furthermore, tablets were also tested for the presence of pesticidal residue by comparing HPLC profile of pesticides and tablet in identical conditions and the result shown absence of pesticides in the formulation. These tablets can be used as an alternative of powder form of the given formulation, and the findings can be used to set the standards for future reference.

Key words: Redesign, *Colchicum luteum*, *Zingiber officinale*, *Aloe vera*, Tablet and HPLC

In-Vitro Transdermal Permeation Analysis of Zimad-E-Khardal: An Anti-emetic Unani Formulation

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ABSTRACT

Qai (vomiting or emesis) is an abnormal indication of gastrointestinal tract. This situation warrants an urgent medical attention. The medication is provided en route parenteral. But there is no such provision existed in Unani medicine. Thus, to overcome this limitation and drawback, an attempt was made to explore a possible alternate route through skin, i.e. transdermal. The Transdermal Drug Delivery System (TDDS) is one of the novel routes for systemic delivery of drugs through the intact skin. Though TDDS is a new concept in the conventional medicine but the concept of TDDS had already been existed in Unani medicine. According to classical Unani literature, it had been conceptualized, devised and put into practice by the Unani physicians in various pharmaceutical dosage forms, such as *marham*, *zimaad*, *tila*, *roghan* etc. For instance *Zimad-e-Khardal* is one of the Unani classical formulations used to inhibit vomiting. In this study, the formulation was prepared and *in-vitro* analysis was done using the Franz diffusion cell method. This led to create a pharmaceutical evidence of drug permeation through the membrane and thereby validated the therapeutic claim of anti-emetic role of *Zimad-e-Khardal*.

Keywords: Unani, Transdermal delivery, Antiemetic

Pharmaceutical Design and Development of a Unani Emulgel Dosage Form

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ABSTRACT

In Unani system of medicine, analgesic and anti inflammatory drugs are used in the form of single (*mufrad*) and compound (*murakkab*) drugs. There are various topical formulations available for effective and safe management and treatment of inflammatory indications. The typically used Unani dosage forms are mainly based on *roghan* (oil). Thus, they are poorly absorbed and delay the action. In a field/observational study, it was observed that the Unani dosage forms, especially those employed topically are desired to be modified in terms of efficacy, application, safety and packaging. The major problem of these dosage forms confronts with their slow duration of action and not user friendly approach. After a thorough survey of Unani classical literature, it has been decided to envisage a study based

on designing and development of a new pharmaceutical dosage form as emulgel. The emulgel is a latest dosage form and has become a very popular dosage form in the conventional medicine. Pharmaceutically, an emulgel is a gellified emulsion using drug/oil/water, i.e. water-in-oil (w/o) or oil-in-water (o/w) with the addition of a gelling agent. However, owing to solubility problems, most of lipophilic drugs cannot be formulated directly as hydrogel. For this reason, the emulgel has better stability and release of the lipophilic drug and enhanced skin penetration in comparison with simple hydrogel base. The emulgel has some more advantages, namely better stability, high loading efficiency, more production economical with low cost. It will overcome the limitation/shortcomings in pharmacokinetics and user friendly too. A study has been undertaken to design and develop a Unani emulgel dosage form. The details of the study shall be discussed in the presentation.

Keywords: Unani, Emulgel

[P-62]

Pharmaceutical Development of *Zuroor-e-Qula* as a Modified Gel Based Dosage Form

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ABSTRACT

Qula (stomatitis), the inflammation of mucosal membrane of oral cavity, is a common problem affecting about 20% of the general population, right from the neonates to young ones, adults to old aged people of either sex. It is mentioned in Unani classical literature since antiquity. *Buqrat* / Hippocrates (460-370 BC) mentioned *qula* in his celebrated medical corpus. *Jalinoos* / Galen (120-200 CE) elaborated it with more inputs. Later on, especially in medieval times, it had been described in almost all Unani classical writings in Arabic and Persian lexicons. As regard to its treatment, there is no sure medicament available in the conventional system of medicine. In Unani tibt, it is treated with a number of single drugs and compound formulations generally used as a local application. One of the formulations recommended for *qula* is *Zuroor-e-qula* which in its existing dosage form has many shortfalls, especially in its application, desired efficacy and shelf life. These disadvantages lead to non-availability of this product in the open market, thus, depriving the affected persons from a time tested, effective and innocuous medicament. In view of the facts mentioned above, it is the need of the hour to develop *Zuroor-e-qula* into a more user friendly pharmaceutical dosage form for the management and treatment of *qula*. So in this study *Zuroor-e-qula* was modified into a gel form to make it user friendly and having better shelf life. The detail shall be discussed in the presentation.

Keywords: Gel, *Qula*, Stomatitis, *Zuroor*.

Pharmaceutical Design & Development of A Unani Fast Dissolving Dosage Form: An Innovative Approach

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ABSTRACT

In conventional pharmaceuticals, the fast dissolving drug delivery system (FDDDS) has emerged as a new drug delivery technology (NDDT). The main advantage of NDDT is quick relief owing to enhanced bio-availability, rapid dissolution/dispersion and solubility of the formulation. The Unani dosage forms lack such properties altogether. Thus, it warrants to adopt or integrate the NDDT in Unani pharmaceuticals so that Unani dosage forms become more effective. In the Unani system of medicine, Unani single drugs (*mufradat*) as well as compound Unani formulations (*murakkabat*) are prescribed, *inter alia*, for anti-inflammatory, analgesic and anti-arthritic actions in various joint disorders/diseases, especially arthritis, osteoarthritis, gout etc. Their anti-inflammatory and analgesic activities have already been validated by a number of pharmacological and clinical studies in India and abroad. As compared to conventional medicine, the Unani formulations would be as safe and effective, and would possess the same advantages as conventional dosage forms in terms of accuracy of dosing and patient compliance. Moreover, the added advantage of Unani fast dissolving formulation would be faster onset of action without any adverse effects. There is a big scope to revisit the Unani dosage forms in terms of prevailing situation, i.e. need of fast relief and user-friendly approach. Thus, it necessitates to meet the challenge by developing UFDDDS, especially employed as analgesic and anti-inflammatory medicament. To begin with, the joint disorder/disease is a most suitable case for design and development of UFDDDS. Hence, a pharmaceutical strategy has been made to design and develop a Unani fast dissolving dosage form. The details shall be discussed in the presentation.

Keywords: Unani, Fast dissolving dosage form.

Development of Standard Manufacturing Procedure of Tooth Paste: Prepared with same Ingredients as in Sunun Poste Mughilan

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ABSTRACT

The aim of present study was to convert the classical Unani pharmacopoeial formulation, Sunun Poste Mughilan (a panacea for dental diseases) into toothpaste, composed of same ingredients. This work was undertaken with the objective of developing the Standard Operating Procedure (SOP) for manufacturing process of toothpaste. This was developed by assessing three different batches. Each batch was assessed three times for spreadability, foam formation and dispersion time in water. The group which was in range with standard limits was selected as standard batch. All conditions of selected batch were considered as its SOP.

Keywords: SOP, Sunun, Toothpaste, Spreadability.

Pharmaceutical Design and Development of *Marham Zangar* in A Unani Surgical Dressing Material

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ABSTRACT

The treatment of chronic ulcer/wound is a challenge to the patients as well as physicians due to long term care, repeated infection, gangrene, amputation, social stigma, and other risk factors associated with this condition. In the conventional medicine, there is no effective treatment for non healing ulcers, especially diabetic ulcers except amputation which causes disability and lifelong dependency and a social stigma too. Hence, it was a felt need to design and develop an effective and safe medicament from the vast Unani classical literature. Of them, *Marham Zangar* is an important Unani pharmacopoeial formulation mentioned in all almost all Unani pharmacopeias. It is described by Ibn Sina, Al-Razi, Esmail Jurjani, Ali Geelani, Azam Khan and others. It is popularly prescribed for the chronic, infected and septic wounds (*Quruh-e-khabeesah*) because it removes dead and septic part of the wounds effectively. Its efficacy in healing of diabetic foot ulcer has been clinically observed in a number of cases. But there are some disadvantages with the application of *maham*, such as stickiness with the wound, pain and chances of infections. To overcome

these problems, a surgical dressing material in the form of *tulle gras* bandage impregnated with *Marham Zangar* has been prepared. The details of the study shall be discussed in the presentation.

Keywords: Chronic ulcer, *Marham Zangar*, Surgical dressing.

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Pharmaceutical Processing & Evaluation of *Ma' Ul- Hadeed*

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ABSTRACT

In Unani system of medicine, plants, animal and mineral/metallic origin drugs are popularly used for the treatment of various diseases. The pharmaceutical processing of Unani formulations based on plant and animal sources is easier than those of mineral/metallic. The use of mineral/metallic substances were explored earlier by the Alchemists who transformed these substances into potential drugs. Unani physicians developed various pharmaceutical processes into different dosage forms. Of them, *itfa* is a specific process by which the inherent qualities of the metal/mineral are converted into a dosage form known as *ma'* (water). A number of such formulations are mentioned in almost all Unani pharmacopoeias, such as *ma'ul hadeed* (ironised water). In the present study, *ma'ul hadeed* was prepared as per the procedure mentioned in Unani classical literature and evaluated for the presence of iron in it using Atomic Absorption Spectrophotometer (AAS) to ascertain its scientific rationale in Unani pharmaceuticals.

Three samples of *ma'ul hadeed* were prepared according to the number of *put* given. One *put*, five *put* and fifteen *put* were given to the three samples respectively. In the AAS, all the three samples showed presence of iron in order of increasing quantity of according to *put* given, such as 0.137 ppm/litre, 1.5 ppm/litre and 5.2 ppm/litre, respectively. Hence, the study provided pharmaceutical evidence for its usage in Unani medicine.

Keywords: *Itfa*, *Ma'ul hadeed*, AAS

Understanding the Process of Finding Impurities in Pharmaceutical Analysis of Unani Compound Formulations

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ABSTRACT

The primary goal of any drug preparation is to create completely pure and safe products, though in reality marginal amount of impurities/contaminants always has been found to be present in the final product. The presence of the impurities can enhance the level of toxicity and side effect; and that is why an impurity analysis process should always be carried out (always needed to make a quality product). The intention of pharmaceutical analysis should be to omit these impurities completely; if not then their intensity should be taken down to a controllable level so that no possible hazards can take place.

The challenge for the analysers is to determine the quantity of impurities. Once the quantity has been identified it can be ascertained that weather the impurities will cause the toxicity or not. After identifying the impurities and finding its quantity, the next big move for the analysers is to structure the impurity. These processes have to be carried out with high end precision and with cutting edge technologies, so that accurate results can be attained.

Where applicable, possible impurities should be listed, and their probable origin/cause should be discussed. If alternative production processes/sources are described, possible impurities must be discussed separately for each process/route. The process of impurities evaluation starts with basic sampling and ends with the sophisticated technologies like photo spectrometry, chromatographic techniques (HPLC), Atomic absorption spectrometry (AAS) and data analysis etc.

Keywords: Unani, Pharmaceutical analysis, Atomic absorption spectrometry, HPLC.

A Remedial Approach for Identification of Some Unani Controversial Drugs

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ABSTRACT

Unani formulations are made from raw materials (crude forms) obtained from plant (90%), mineral and animal sources (10%). The therapeutic effects of these formulations depend upon the genuine, standard and authentic ingredients. There are many crude drugs in Indian markets that are sold with their regional names and still their botanical identities are questionable. Some drugs are mentioned in the ethnobotanical literatures with equivalent scientific names that are quite different from market specimen. In some other cases more than one botanical names of same drug have been described that also causes confusion among researchers, leading to various confusion in respect of the identification of Unani Drugs. These controversies have arisen due to many factors i.e. primitive ways of description of plants in classical literatures, various nomenclatures of drug in different regions and wide range of distribution of drugs into many continents etc. In the last fifty years many workers including present author had tried to resolve the problem, although these drugs have been mentioned in the text books of some authors of present times where they repeated the same name and characters. Keeping in view of the quality assurance and genuine supply of Unani raw materials to pharmaceuticals an appropriate optimized process for identification of the plants is very much needful. The present paper is focused with some remedial approaches applied for the identification of some controversial drugs like Gule Zufa (*Agastache urticifolia*), Ushna (*Usnea longissima*), Hiran Khuri (*Convovulus arvensis*), Zarnab (*Taxus baccata*), Nagkesar (*Ochrocarpus longifolius*), Iklilul Malik (*Astragalus hamosus*), Toodri (*Lepidium perfoliatum*) and Haloon (*Lepidium sativum*) etc.

Keywords: Unani drugs, Controversy, Identification

Importance of Common Names (vernaculars) of Some Useful Plants of Unani Medicine

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ABSTRACT

Plants are known by several different names. The scientific binominal nomenclature for plants is typically derived from classical or modern Latin or Greek or Latinised forms of vernacular words or coinages. Such names generally are difficult for a layman to learn, remember and pronounce. A vernacular name often includes a descriptive term, either related to appearance of the plant or to the region in which they are found. The use of medicinal plants for treatment is gaining currency across the whole world due to its cost

effectiveness, easy availability and minimal side effects. Unani System of Medicine is known to have a treasure of such plants with several different names such as Arabic, Unani, Urdu, Persian, Hindi, Sanskrit and English etc. These names reflect a broad spectrum of information on local uses, ecology, physiology, anatomy, pharmacognosy, chemistry and several other aspects. The common people will get benefited from these medicinal plants only when they know them by their common names. Therefore it is the need of hour that these medicinal plants should be properly documented with their common names. The most commonly used medicinal plants are being documented in this paper with stress on these vernacular names. These plants are arranged in alphabetical order with their family followed by their local names in different languages with their meaning and etymology of the plant name.

Key words: Unani System of Medicine, Binomial Latin Names, Common names, Etymology

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X-Ray Diffraction (XRD) Analysis of Different Samples of *Gile Armani* (Armenian Bole) and Its Authentication in Reference to Existing Literature

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ABSTRACT

Introduction: *Gile Armani* (Armenian bole) is a mineral origin drug used in Unani system of medicine mainly as astringent, desiccative and antiseptic. Its origin in Unani classical text is said to be Armenia. A crude drug market survey revealed that different types of clay/mineral material are sold under the name of *Gile Armani*. External features of the different sample look very similar i.e. slender pleasant odour, insipid taste, soft, greasy and sticky on tongue; however different sample differed slightly in colour and shape. Keeping in consideration its long standing controversy over identification this study was carried out to ascertain the identity of genuine drug.

Materials and Methods: Three different types of samples of *Gile Armani* were collected from crude drug market of different cities. X-ray diffraction (XRD) for crystallographic study was undertaken. Powder method of diffraction was adopted. A thorough review was undertaken from various classical as well as contemporary literature for its identity and it was compared with the XRD analysis.

Results: Intensity of the peaks in XRD pattern showed that all three samples were crystalline. Sample No.1 and sample No.3 consisted of similar constituent i.e. $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$ -Kaolinite, CaCo_3 and Fe_2O_3 -hematite with no evidence of silica (quartz alpha). Sample No. 2 consisted of Fe_2O_3 -Hematite; Silica (SiO_2)-Quartz alpha; CaCo_3 and TiO_2 -Titanium Oxide, Anatase with no evidence of Kaolinite. The common view from literature that it is usually prepared by mixing pipe-clay or common chalk with oxide of iron or red ochre seems in concordance with XRD analysis findings which confirmed the presence of iron oxide (Fe_2O_3), pipe-clay (Kaolinite), and common chalk (CaCo_3). Constituents of sample No. 2 resembled Red Ochre as mention in Ayurvedic Pharmacopeia. From the

literature, Armenian Bole sold in the market is either Red Ochre or dried cakes formed by mixture of Red Ochre and pipe maker's clay. Moreover, literature indicates that true Armenian Bole is almost not available in the shops. Details from natural pigments used in painting/Art suggest that name Armenian bole is a case of shift from a locality-related name to a general type mark 'Armenian bole', which was later used for any clayey red of certain technological properties.

Conclusion: Critical review on Gile Armani and XRD finding suggested that fabricated and substitute drug in the name of Gile Armani is present in the market and its import from Armenia as a genuine source is suspicious.

Key words: Gile Armani, Armenian bole, X-RAY diffraction, Clay

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Formulation and Comparative Characterization of a Herbo-Mineral Unani Medicine Prepared by Classical and Modern Method

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ABSTRACT

Kushta post baiza murgh (KPBM) is a herbo-mineral formulation used by Unani physicians. In the present study KPBM was prepared using classical and modern methods and studies on certain physico-chemical parameters so as to find out which method of preparation gives better quality of *kushta*. KPBM was first prepared by classical method using cow dung cakes as heat source to yield *kushta post baiza murgh* classical (KPBC). Heat pattern was recorded and implemented in muffle furnace for the preparation of *kushta post baiza murgh* furnace (KPBF). Both *kushtas* were then analyzed on classical and modern parameters. Positivity of classical tests indicated that both *kushtas* were correctly prepared according to Unani literature. FTIR (Fourier-transform infrared spectroscopy) spectra of both *kushtas* showed peaks of Calcium oxide, amine, organic matter, pectin material and other functional groups. TGA (Thermogravimetric Analysis) plots of both *kushtas* showed different pattern of weight loss at different temperatures with over all weight loss of 46.03% and 32.87% in KPBC and KPBF respectively. DSC (Differential scanning calorimetry) of KPBC showed five endothermic peaks whereas KPBF showed three endothermic peaks no further sign of structural or conformational change. KPBF on account of having greater oxide content, lesser weight loss during TGA and DSC analysis was found of better quality. Therefore, it might be concluded that furnace is a better option over classical method for preparation of KPBM.

Key words: Differential scanning calorimetry, Fourier-transform infrared spectroscopy, *Kushta post baiza murgh*, Thermo gravimetric Analysis, Unani.

Traditional and Contemporary Techniques of *Kushta* Analysis

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ABSTRACT

Kushta an ancient dosage form is claimed to be very effective and potent. A number of metals and minerals are converted either into their carbonates or oxide form by the process of *Ihraq* or *Taklees*, the product thus obtained is known as *Mukallas* or *Kushta*. As per classical literature the toxic character of metallic ingredients is eliminated when the raw material is subjected to scrupulous purification / processing and calcinations steps. The quality of *Kushta* can be evaluated on the basis of some classical parameters as colour, odour, taste, consistency, floats on water, lusterless, fineness etc. But in present scenario a detailed study on the physico-chemical characteristics of *Kushta* is required to allay the fears about its toxicity. These physicochemical characterization can be done with the help of instrumental techniques. The present review aims at discussing the classified and contemporary techniques that may be standardized in *Kushta* preparation.

Contemporary methods includes: Fourier Transform Infrared (FTIR) Spectroscopy, Scanning Electron Microscopy (SEM), X Ray Diffraction (XRD), Flame Photometry, Thermo-gravimetric Analysis (TGA), Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES), Microwave Plasma-Atomic Emission Spectrometer (MP-AES), Atomic Absorption Spectrometry (AAS), ION Chromatography, Flame Atomic Absorption Spectrophotometry (FAAS), Graphite Furnace Atomic Absorption Spectrophotometry (GFAAS), Differential Scanning Calorimetry (DSC) etc. These techniques are useful in studying qualitative and quantitative difference in inorganic as well as organic chemical constituents in *Kushta* as well as other characteristics.

Keywords: *Kushta*, Analysis, Traditional, Contemporary, Techniques.

Physicochemical Analysis and Safety Study of Unani Formulation *Kushta-E-Tila*

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ABSTRACT

KushtaJat (Calx) made of metals and minerals have been in use for therapeutic purpose in Unani System of Medicine since centuries. The *Kushta-e Tila* containing gold was selected for this study. For preparation of *Kushtajat*, samples of raw materials were procured from local market and prepared by modern and conventional methods. They were subjected to

comparative physicochemical and gravimetric analysis to determine the metallic content and to detect the impurities. Thereafter the metals were subjected to calcination process in accordance with the procedure mentioned in National Formulary of Unani Medicine for preparation of Kushta. The heat was provided by traditional furnace (Potable tandur) and by Muffle Furnace. In process heat quantification was done with the help of Digital Pyrometer. The Kushtas was prepared according to the method described in NFUM and cowdung cakes (Upla) were used as the source of heat. During the process of calcination the pattern of rise & fall of Temperature was recorded & the thermogram was prepared the same thermogram was used to maintained the temperature when the second sample of Kushtas was prepared by muffle furnance. The two sample of Kushtas were subjected for physicochemical & gravitometric analysis. The purity of the finished product (calcined) was assessed by various analytical tests like by Scanning Electron Microscopy, (SEM) and Transmission Electron Microscopy (TEM), XRD, ICPAES, AAS, EDAX methods. For Safety evaluation of Kushta LD₅₀ was determined in animal experimentation. The comparative analysis of *Kushta-e Tila* by using various modern techniques clearly points on the superior quality of kushta prepared by traditional method, in terms of particle size and toxicity.

Keywords: Kushta-e-Tilas, Modern method, Traditional method, Calcined Product, TEM, SEM, Unani Medicine.

[P-74]

A Brief Prospective of Analytical Testing for Heavy Metals Used in the Preparation of Unani *Kushtajats* (Herbometallic Drugs)

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ABSTRACT

Unani System of Medicine (USM) is now being accepted as complimentary and alternative system of medicine globally and consequently the demand for USM has increased manifolds. But the global share of USM still lag way behind the Traditional Chinese medicine (TCM), mainly because of the heavy investment by Chinese government on practical implementation of modern technology in their standardization. Moreover TCM industry has specifically responded favorably to the global concern of toxic element contamination in their products.

In the context of Unani system of medicine, where herbometallic or herbomineral (kushtajats) formulations are said to be made biocompatible through traditional detoxification processes, the western medical science on the contrary has raised the safety concern for heavy metals of these formulation in the recent past. Demand and acceptance of USM would not increase unless Government of India in general and USM industry in particular, focus on the standardization of USM. The need of the hour therefore is to develop a set the protocols for the purpose of standardization of USM.

In this paper, we will discuss the application and merits of analytical testing such as Energy Dispersive X-ray Analysis (EDAX), Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), Integrated Coupled Plasma Atomic Emission Spectroscopic analysis (ICPAES), Atomic Absorption Spectroscopy (AAS) and Namburi's Phased spot testing (NPST) etc. These techniques can be used effectively to prepare and standardize the Kushtajat.

[P-75]

Renewed interest in Leech Therapy for the Treatment of Non-Healing Ulcers

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ABSTRACT

Non-healing ulcer also known as a callous or chronic ulcer is a challenging disorder for a medical person. It takes a lot off time and significant treatment costs to be cured. The reported beneficial effect of leeching in the treatment of various ulcers compelled us to conduct this study. The aim of this study was to evaluate the effectiveness of leech therapy in promoting the healing process in non-healing ulcer. Twenty patients of either sex ages of 35 to 60 years were selected for the study. Medicinal leech (*Hirudo medicinalis*) was applied to the area surrounding the non-healing ulcers. The numbers of leeches were applied on ulcer depending upon the size of the ulcer. The ulcer was assessed once a week for healing by using various parameters. After leech therapy it was found that the ulcers showed healing on different stages. It is concluded from the study that leech therapy is an effective adjunct therapy in the management of non-healing ulcer.

Key words: Leech therapy, Non-healing ulcer

[P-76]

Synthesis of Zinc Oxide Nanogel for the Treatment of Skin Diseases

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ABSTRACT

This paper uses an easy methods (based on prepration of Unani Medicine) to prepare ZnO nanogel with the hexagonal wurtzite structure using zinc nitrate and urea for the first time in our laboratory. There are 18 bacteria strain for easy growth in the media, among them 6-10 are fungal while rest are +ve and -ve Bacteria. ZnO show activity by reacting with them,

this antibacterial activity of ZnO was successfully tested in our research Laboratory. The structural, compositions and morphology characterization of the as synthesized ZnO nanosheets was performed using X - ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), Field emission scanning electron microscopy (FESEM), energy dispersive spectroscopy (EDS) and high resolution transmission scanning electron microscopy (HRTEM). The average thickness of ZnO nanosheets is found to be 12 nm, with the average diameter up to 90 nm. Antibiotics provide the main basis for the therapy of microbial (bacterial and fungal) infections. Therefore, our synthesized gel is used for the treatment of skin diseases.

Research Highlights:

Hydrothermal Method: - This method is used to synthesized ZnO nanosheet

An antibacterial Agent: - ZnO nanosheet is very useful for antibacterial agent

XRD: - Hexagonal wurtzite structure of ZnO is confirmed using XRD.

Keywords: Nanostructures; X-ray diffraction; Antibacterial activity

[P-77]

Concept of Nanomedicine in Unani System

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ABSTRACT

Since large quantity of crude herbal drug is administered to the patient in Unani system of treatment the same medicine on nanoscale can substantially reduce the quantum of drug without altering its composition and efficacy. To measure, manipulate and organize matter on nanoscale i.e. of the order of 1/1000, 000, 000 meter is referred to as nanoparticles. When size of the substances fall in the above region their solubility in aqueous medium increases, as a consequence of which the mobility of molecules also increases. The efficacy of such nanomedicine depends on its size, shape and concentration, which allows it to be absorbed quickly and distributed uniformly in the human system. In the nano form many properties of the drug are altered, for instance their solubility, toxicity, absorption/diffusion in the body becomes faster alleviating the patient from adverse effects. The drug is therefore, transported to the target cells easily without causing damage to the normal cells.

A systematic development of medicines to nano dimension has motivated the researchers to produce inexpensive system to be practically used for the treatment of many ailments in Unani system in most effective way.

With regard to their characterization different spectroscopic and thermal techniques, SEM, TEM and XRD may be employed.

Green Synthesis of Nanometals Using Different Parts of Plants and the Potential of their Antibacterial Efficacy

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ABSTRACT

India is a copious source of well-recorded and well- practiced knowledge of traditional herbal medicines. They are also in great demand because of their efficacy, safety and fewer adverse effects as compared with modern medicines. A big challenge is to deliver the herbal formulations in a sustained manner to the infected region at the “*minimum effective level*”.

The infectious diseases are one of the leading causes of death of children, adolescents and olds killing approximately half of the population in the tropic region. Development of alarming resistance of microbes towards antimicrobial agents is a major global public health problem. Thus, we need to have effective alternate antimicrobials to combat such resistant bugs.

Nanomaterials seem to have emerged as the *panacea* of all technical ills due to their nanoscale structures. Nano carriers will help in targeted drug delivery system and will also increase the therapeutic value by reducing toxicity and increasing bioavailability. Various physical and chemical methods have been employed for nanometal synthesis. Biosynthesis of nanometals using different parts of plants is now being done to overcome the high cost and to minimize the use of hazardous chemicals in the conventional methods of synthesis. The nanometals synthesized using different parts of plants have been proven to be effective antibacterial agents.

Our work in this direction will describe the recent advancement in green synthesis of nanometals using different parts of various plants and the potential of their antibacterial efficacy.

Development of Nano Drug Delivery System for Unani Medicines (UNIM-105) Against CCl₄ Induced Hepatotoxicity

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ABSTRACT

The several studies have the various approaches for the treatment of liver disorder. Recent efforts in liver diseases research have been geared towards designing highly effective novel drug delivery systems. Despite many benefits of nanotechnology, concerns arise about its potential stimuli-responsive drug delivery system on humans and the environment. Due to the unique physiochemical properties of the nanoscale materials, their behavior may differ from the larger bulk forms. In the present study a Unani Drug UNIM-105 was selected to

convert it into a nanoform and study its natural Hepatoprotective effect as compared to bulk dose. Temperature-sensitive amphiphilic polymer poly (N-isopropylacrylamide-co-HEMA) has been synthesized and used to encapsulate the extract of UNIM-105 drug, in core-shell nanoparticles formed by a membrane dialysis method. We have developed a hydrophobic and hydrophilic core-shell architecture structured micellar formulation that has the capability of carrying the Unani medicines and delivery them at specific site. The critical association concentration of the polymer is determined to be 10 mg/L and UNIM-105 was easily encapsulated (80%) into the nanoparticles. The nanoparticles are spherical in shape, and their size was found to be below 200 nm. Biodegradable polymers would allow the drug release only at the inflammatory site. In the present investigation from the results of biochemical assays and histopathological study, it was clear that the nanoform of UNIM-105 exhibited significant hepatoprotective activity as well as antioxidant activity against CCl₄ induced hepatotoxicity in albino wistar rats in comparison with traditional form of Unani drugs UNIM-105.

Keywords: Nanoparticles, Unani medicine, UNIM-105, Hepatotoxicity, Liver disorder

[P-80]

Nanotechnology: It's Application in Medical Arena and Scope in Unani Medicine

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ABSTRACT

Herbal medicines have been widely used around the world since ancient times. The advancement of phytochemical and phyto-pharmacological sciences has enabled elucidation of the composition and biological activities of several medicinal plant products. The effectiveness of many species of medicinal plants depends on the supply of active compounds.

Nanotechnology is an advanced scientific technique in the 21st century for the drug discovery having the property of self-targeting. The nanoparticles can be used for targeting, due to their distinctively small size, at the infected pathological areas. It is one of the fastest developmental, the most potential and the far-reaching high and new technologies in current world, and it greatly promotes the development of biological medicine and bioavailability enhancement of herbal drugs.

With the application of nanotechnology of nanomization of herbal drugs, it will make the development of nano-herbal medicine possessing high bioavailability, which consequently will open the new era of herbal drug discovery. Treatment of chronic diseases like cancer using targeted drug delivery nanoparticles is the latest achievement. *Kushta*, a product used in Unani System of Medicine is a metallo-medicine in powder form of nano to submicron size. At present, several nano drugs are under investigation for drug delivery and more specifically for cancer therapy. The purpose of this study is to review nanotechnology-based drug delivery systems and herbal medicines and scope in unani medicine.

Keywords: Herbal drugs, Nanotechnology, Nano particles, Bio availability, Unani medicine.

Applications of Nanotechnology in Herbal Medicine

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ABSTRACT

Nanotechnology is the science that deals with matter at the scale of 1 billionth of a meter (i.e., 10^{-9} m = 1 nm), and is also the study of manipulating matter at the atomic and molecular scale. A nanoparticle is the most fundamental component in the fabrication of a nanostructure, and is far smaller than the world of everyday objects that are described by Newton's laws of motion, but bigger than an atom or a simple molecule that are governed by quantum mechanics.

Nanoparticles have unique and well defined physical and chemical properties which can be manipulated suitably for desired applications. Nanomedicine involves utilization of nanotechnology for the benefit of human health and well being. The use of nanotechnology in various sectors of therapeutics has revolutionized the field of medicine where nanoparticle of dimensions are designed and used for diagnostics, therapeutics and as biomedical tools for research. It is now possible to provide therapy at a molecular level with the help of these tools, thus treating the disease and assisting in study of the pathogenesis of disease. In recent year, the nanomization of herbal medicines has attracted much attention. Nanoparticle like nanospheres have a matrix type structure in which the active ingredient is dispersed throughout (the particles), whereas the nanocapsules have a polymeric membrane and an active ingredient core. Nanomization possesses many advantages, such as increasing compound solubility, reducing medicinal doses, and improving the absorbency of herbal medicines compared with the respective crude drugs. With the application of nanotechnology of nanomization of herbal drugs, it will make the development of nanoherbal medicine possess high bioavailability, which consequently will open the new era of herbal drugs.

Nanotechnology Approaches in Unani Medicine

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ABSTRACT

Nanotechnology is the ability to measure, design, and manipulate at the atomic, molecular and supramolecular levels on a scale of about 1 to 100 nm in an effort to understand, create, and use material structures, devices, and systems with fundamentally new properties and functions attributable to their small structures. The advent of nanotechnology is considered to be the biggest engineering innovation since the industrial revolution. Proponents of this

new technology promises to re-engineer the man made systems 'atom to atom' sparking a wave of novel revolutionary commercial products from machines to machine. The various types of nanoparticles are being used in different fields of health and medicinal system such as metallic, inorganic, organic and polymeric etc. Now-days scientists are being focused on the nano herbal medicines due to wide applications of traditional medicinal systems. Several studies have been done on nano herbal formulations as nano curcumin, nanoparticles of kalonji etc. Unani traditional medicines are one of the great approaches in the health and medicinal system and by approaching nanotechnology to this system, one can create a very useful tool in designing future novel nano Unani formulations with improved bioavailability profiles and less toxicities. This novel development of combination of both Unani medicines and nanotechnology may develop an attractive symbiosis between green revolution and Unani formulation with realistic prospectus to minimizing the toxicity of chemicals in edible products and to provide better treatment for patients.

[P-83]

Nano Conversion of Unani formulations

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ABSTRACT

Fatal disorder is the disease state in which treatments have the more patient incompliance. The objective of this study is to tell about the synthesis of the nano based system in such a way that enhances the solubility of poor bioavailable drugs and to make these administrations easy. The rationale behind selection of Unani drugs is the bulk dose, good patient compliance in the traditional system of medicine. Temperature-sensitive amphiphilic polymer poly (N-isopropylacrylamide, HEMA, vinyl pyrrolidone, PEG etc.) may be synthesized and used to encapsulate the extract of Unani drugs, in core-shell nanoparticles formulations by various methods such as a membrane dialysis method, ARTP methods etc. The nanoparticles will be formed in the form of micelles that have spherical in shape, and their size will found to be below 100 nm. The encapsulation efficiency can be affected by fabrication of temperature, initial drug loading and polymer concentrations. In vitro release of the Unani formulations from the nanoparticles will be responsive to temperature changes. These temperature-sensitive nanoparticles would make a promising carrier for intracellular delivery of Unani drugs and will make a revolutionary boom in the traditional system of medicine. As a gist of this study we can say that a hydrophobic and hydrophilic core-shell architecture structured micellar formulation can be formulated that has the capability of carrying the Unani medicines and deliver them at specific site.

Ancient Unani Formulations and Nanoparticles

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ABSTRACT

Herbal drugs have been recently getting more attention because of awareness regarding their potential to treat a number of diseases. However, several problems such as poor solubility, poor bioavailability, low oral absorption, instability and unpredictable toxicity of many formulations limit their use. In order to overcome such problems, nanotechnology can play a vital role. Improved pharmacokinetic and bio-distribution of therapeutic agent can be achieved by the small size and high surface area to volume ratio of nanoparticles. Among the novel drug delivery systems (NDDS); nanoparticles are considered to be an important one. It is considered as an advanced scientific technique of 21st century. Unani System of Medicine uses a number of preparations that can be said to simulate as the nano particles. Kushta, an oral formulation is used in various systemic diseases due to its high bioavailability. Kohl, an ophthalmic preparation is used in ophthalmic disorders for its better absorption locally. Bukhoor and Nufookh are used as aerosols through nasal mucosa for immediate effect. Zimad, Shiyaf and Tila as nanoparticles are used as topical applications. Nanosciences are extensively seen as having a great potential to bring benefits to many areas of herbal research and its applications.

Keywords: Nanoparticles, Herbal, Bioavailability, NDDS

Scope of Nanotechnology in Unani Medicine: Challenges and Limitations

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ABSTRACT

Understanding, shaping and combining matter at the atomic and molecular scale is called Nanotechnology. It helps to improve and even revolutionize many technology and industry sectors such as information technology, energy, environmental science, medicine, homeland security, food safety and transportation among many others. It has the potential to bring major advances in medicine. It may help in the diagnosis, prevention and management of the various diseases. With reference to Unani System of Medicine, this technology may also prove beneficial in the preparation of various drugs which may be more effective and fast in their actions. Besides the benefits of this technology in Unani System of Medicine, it has some limitations and challenges. Some of them are as follows:

- Most of the Unani Pharmaceutical companies and research institutes lack enough budgets for the research at this level.

- In Unani Medicine, drugs are used as a whole that minimizes the side effects of drugs because the Musleh (Correctives) of the drugs are present in their own. So the concept that Unani drugs have no side effects may be hampered by this technology. \
- In Unani Medicine, drugs have been used in crude forms or after a little modification so the question arises that whether the nanoparticles of Unani drugs will be considered as Unani Drug or Modern Drug. Like many drugs in modern allopathic system are also produced by herbs, animals and minerals.
- Mizaj (Temperament) is the basic concept of Unani Medicine. Drugs are prescribed according to the temperament of drugs as well as of patients. Hundreds of years have passed but no scientific parameters have been developed for the determination and validation of the temperament of drugs. Determination of the temperament of nanoparticles will be a big challenge for us.

These challenges and limitations of this nanotechnology in Unani Medicine will be discussed in detail in full length paper.

Key Words: Nanotechnology, Unani Medicine, Musleh, Mizaj

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Nanoparticles as a Versatile Tool: Application and Perspective in Herbal Medicine

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ABSTRACT

Herbal medicines (Unani Medicine) have been explored since ancient times; however, recent advancement in phytochemical sciences has elucidated the composition and function of bioactive of plant and herbal extract more efficiently. The activity of these bioactive is limited by their intrinsic properties such as solubility and permeability resulting in their lower bioavailability and toxicity. The herbal medicines are also prone to physical degradation and chemical degradation of their bioactives. Furthermore, efficacy of many herbal bioactives also abolished by their inability to cross the lipid membranes of the cells due to excessively high molecular size resulting in decrease in bioavailability and efficacy. Therefore, it has been widely proposed to combine herbal moieties with nanoparticles because nanostructured systems might be able to potentiate their action by delivering the sufficient concentration of active constituent in controlled fashion to the desired site of action. Furthermore, These novel formulations proven to have remarkable advantages over conventional formulations in term of solubility and bioavailability enhancement, protection from toxicity, improved stability and tissue macrophages distribution, protection from physical and chemical degradation. The article presents current status of the nanoparticle based herbal formulations with emphasis on their formulation, characterization and in vitro analysis, with examples of currently marketed preparations.

Novel Drug Delivery System and Nanoparticles: A Scientific Approach To Deliver Unani Drugs

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ABSTRACT

Novel drug delivery system is a novel approach to drug delivery that addresses the limitations of traditional drug delivery systems. Traditional system of medicine has a vast knowledge based on Unani Medicine whose potential is only being realised in the recent past years. Novel drug delivery system for herbal medicine includes targeted delivery, reduced solubility, enhanced absorption and metabolism of drug.

Unani medicine may use a scientific approach to deliver the component of a drug in a sustained manner to increase patient compliance and to avoid repeated administration. This can be achieved by designing novel drug delivery system for herbal constituents. One such novel approach is nanotechnology. Nano sized drug delivery system of herbal drug have a potential future for enhancing the activity and bioavailability of drug. Nano sizing may lead to increased solubility of components, reduction in dose via improved absorption of active ingredient. The particle size and surface characteristics of nanoparticles can be easily modified for controlled and targeted drug delivery.

Modern phytopharmaceutical research solves the scientific needs for herbal medicines as in modern medicine, which gives way for developing novel formulations such as dispersions, liposomes, solid lipid nanoparticles and so on. Herbal drug have enormous therapeutic potential which should be explored through some value added drug delivery.

Detail will be discussed in full length paper.

Key Words: Unani medicine, Bioavailability, Nanotechnology, Nano particles

Flood Catastrophe in J&K and Role of Indian Systems of Medicine (AYUSH) in Managing the Health Care – An Appraisal

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ABSTRACT

J&K witnessed its worst flood catastrophe from 5th Sep 2014 resulting in colossal loss of life & property. All the Major Health care facilities and tertiary care hospitals in Srinagar inclusive of ISM Sector (AYUSH units, ISM dispensaries) were inundated for 10 days resulting in major breakdown of Healthcare facilities to people in general and flood victims

in particular. Keeping in view the spirit of “work is worship” Directorate of Indian Systems of Medicine took a bold step to establish a Make-shift AYUSH Hospital at Shaltang on 14th September 2014. Subsequently around 205 free AYUSH camps were organized in flood affected areas to provide free AYUSH treatment, First-aid, counseling and awareness and immunization (Measles and Vitamin A) in collaboration with Directorate of family welfare J&K. Besides 20 mobile camps were organized in district Srinagar where a team of doctors and para-medical staff were deputed on boats in flood affected areas. A total of 135933 patients (mostly flood victims) were treated from 14-09-2014 to 09-10-2014 in different camps. Patients attending the camps complained of diverse clinical manifestations pertaining to different systems. 30% patients were suffering from RTIs, 31% patients were complaining of skin ailments, 9% patients reported with GIT, 4% patients reported with psychiatric disorders, 5% patients were having CVS disorders, 11% with MSDs, 2% with Gynaecological disorders and 9% with other disorders like PUO, UTI, injuries, conjunctivitis etc. Mostly patients developed RTIs, skin allergies/infections and injuries. Besides people of flood affected areas reported with psychiatric disorders including depression, PTSD, Insomnia due to loss of life and valuable property. It is highly recommended that a disaster management cell may be constituted and AYUSH emergency drugs may be formulated in future to cope up with such disasters effectively. The details will be discussed in full length paper.

Key Words: Flood, AYUSH, Emergency Drugs

[P-89]

Studying the Sensory Acceptance of Some Food Products Containing Freeze Dried Powder of *Capsicum annuum*

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ABSTRACT

Capsicum annuum (fruit) has a large number of nutraceutical properties. Being a rich source of Vitamin C it is used internally as well as topically by large number of health professionals to treat various diseased conditions. This study was undertaken to develop some food products using freeze-dried powder of capsicum and to study sensory acceptance of these food products. For this purpose fresh red capsicum were freeze dried to moisture content at 4 g/100 g sample and powdered which was then used in making three food products namely biscuits, buns and salad seasoning in the ratio of 1%, 2% and 4%. The sensory evaluation was done with 14 trained judges and 40 untrained panellists for appearance, taste, texture, colour, odour and overall acceptability using a nine point hedonic rating scale. Results were analyzed using one way analysis of variance at significance level of $p < 0.05$. No significant difference was obtained for biscuits at 1%, 2% and 4% incorporation level for any of the attribute except colour which was liked most at 2% incorporation level. The buns improved in texture, odour, taste and overall acceptability as the percentage of incorporation of capsicum powder increased from 1% to 4%. The colour was most preferred at 2% and no

significant difference was observed at any incorporation level for any of the attributes in salad seasoning suggesting that capsicum powder can be easily used in these up to 4% of the total weight without any undesirable effects from the consumers.

Key words: Nutraceutical, Freeze dried powder, Sensory evaluation, Hedonic scale.

[P-90]

Bioelectrical Impedance Analysis (BIA) Instrument and its Relevance in Unani Tib

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ABSTRACT

Bio-electrical Impedance Analysis or Bioimpedance Analysis (BIA) is a method of assessing body composition, the measurement of body fat in relation to lean body mass. It is an integral part of a health and nutrition assessment. It uses the difference of conductivity based on the biological characteristic of tissue. Conductivity is proportional to water and electrolyte; it decreases when cell shape is closer to a round form. Adipose tissue is composed of round shape cell and contains relatively less water than other tissues like muscle, so conductivity is decreased according to the increase of body fat. When subtle alternating current signal flows in human body, electricity is flowing through water which has high conductivity. Impedance of body-composing constituents like water, fat, muscle and so on appears different from one another and the impedance has steady relationship to body composition, therefore body composition can be evaluated using impedance. BIA provides a reliable estimate of total body water under most conditions. It can be a useful technique for body composition analysis in healthy individuals and in those with a number of chronic conditions such as mild-to-moderate obesity, diabetes mellitus, and other medical conditions in which major disturbances of water distribution are not prominent. BIA values are affected by numerous variables including body position, hydration status, consumption of food and beverages, ambient air and skin temperature, recent physical activity, and conductance of the examining table. Reliable BIA requires standardization and control of these variables.

Mizaj is a core concept of Unani Tib, whole Unani therapy in context of diagnosis and treatment revolves around proper identification of individual mizaj. Generally method used for determining mizaj is Galen 10 parameters which is much objective. BIA Instruments can serve as diagnostic tool which helps to understand our mizaj or body type which helps in maintaining optimal health and also to lead a balanced personal, family and professional life. This paper is a step towards analyzing the potential of BIA instruments to be used for determination of mizaj.

Therapeutic Validation of Al Hijamah (Cupping Therapy) in Osteoarthritis of the Knee

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ABSTRACT

Background: *Al Hijamah* (Cupping Therapy) is an integral part of regimenal therapy used in Unani System of Medicine. It has been successfully practiced by Greeko-Arabic physicians in the management of musculoskeletal and neurological disorders since antiquity. Osteoarthritis is the commonest form of arthritis and is a major cause of pain and disability in the elderly. The incidence of arthritis has increased considerably in present scenario.

Objective: The present study was aimed to evaluate the efficacy and safety of *Al Hijamah* in the patients of knee Osteoarthritis on scientific parameters.

Methodology: The study was conducted in the Regimenal Therapy Unit of 50 Beded Govt. Unani Hospital Srinagar J&K India. 75 patients of OA were enrolled in the trial after obtaining their informed consents. All the patients were clinically assessed and diagnosed on the basis of thorough history, clinical and radiological examination of the affected joint. Then *Al Hijamah* (Dry Cupping) was applied on the affected joint for a period of approximately 15-20 minutes over four weeks. The efficacy was assessed on the basis of Western Ontario and McMaster University (WOMAC) Score and Visual Analogue Scale (VAS) Score.

Results: The results were analyzed statistically by using Paired Student's t-test. There was a significant reduction in the WOMAC and VAS scores of post-treatment group (P <0.01) as compared to pre-treatment group.

Conclusion: It was concluded that *Al Hijamah* may be used safely and effectively in the management of Osteoarthritis.

Key words: *Al Hijamah*, Cupping Therapy, Osteoarthritis, Unani medicine.

Plants Secondary Metabolites and Enhancement of *Quwat al-Hafizah*

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ABSTRACT

Humans consume a wide range of foods, drugs, and dietary supplements that are derived from plants and which modify the functioning of the *Markazi Nizam-e-Nafsaniyah* (central nervous system). The psychoactive properties of these substances are attributable to the presence of plant secondary metabolites, chemicals that are not required for the immediate

survival of the plant but are synthesized to increase the fitness of the plant to survive. In many cases, the effects of these phytochemicals on the human CNS might be linked either to their ecological roles in the life of the plant or to molecular and biochemical similarities in the biology of plants and higher animals. This review assesses the current evidence for the efficacy of a range of readily available plant-based extracts and chemicals that may improve brain function and which have attracted sufficient research in this regard to reach a conclusion as to their potential effectiveness. Many of these phytochemical/extracts can be grouped by the chemical nature of their potentially active secondary metabolite constituents into alkaloids (caffeine, nicotine), terpenes (ginkgo, ginseng, valerian, *Melissa officinalis*, sage), and phenolic compounds (curcumin, resveratrol, epigallocatechin-3-gallate, *Hypericum perforatum*, soy isoflavones). They are discussed in terms of how an increased understanding of the relationship between their ecological roles and CNS effects might give way the field of natural, phytochemical drug discovery. Detail will be discussed in full length paper.

Key Words: Plant secondary metabolites, Alkaloids, Markazi Nizam-e-Nafsaniyah.

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Employing Modern Technologies in Unani Medicine

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ABSTRACT

Ancient Unani scholars used most advanced technologies of their times rather, some of those techniques were invented by them. Now a days use of science and technology in Unani medicine is considered to be a sin. But the fact is to present ourselves in this age we must have to prove our proficiency and efficacy on modern parameters. Keeping this in view, this work suggests use of few modern technologies for the sake of Unani Medicine. For example, for standardization of lon e boal spectrophotometry can be employed. Rooh e nafsani can be measured as the nerve conduction velocity. *Quwwat-e-haiwania* can be expressed as an analogue of mechanical workdone by heart. Similarly, various technologies of biochemistry biophysics fluid hydraulics thermodynamics and nanotechnology can be employed for the validation of the basic concepts of Unani medicine.

Historical Perspectives of *Kulliyat-e-Advia* in Drug Formulation and Efficacy

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ABSTRACT

Since thousands of years Unani system of medicine is promoting health in the form of physical, spiritual and mental wellness. Eminent unani physicians and philosophers had given knowledge and ideas in physiology, anatomy, pathology and bacteriology. They have also enunciated about *Kulliyat-e-Advia* (principles of general pharmacology) and *Saidala* (Pharmacy).

To know about drugs in Unani system comprehensively, one should cognize the *Kulliyat-e-Advia* which comprises of principles of action of *Advia* (drugs), source and temperament of drugs, drug compounding, efficacy, side effects and their correction, antidotes, absorption and metabolism of drugs and life span and collection as well as preservation etc. Systematic study of *Kulliyat-e-Advia* is necessary to make the drugs more effective and fast acting.

Following Greek philosophers, Arab scholars had given attention towards *Kulliyat-e-Advia*. In the period of *Khalifa Abbas* the renowned physicians i.e. *Uhna Bin Masoiah*, *Sabur Bin Sohail*, *Yaqub Al Kandi* and *Saleh Bin Kaisan* had described *Qarabadin* according to diseases. In lieu of them other scholars like, *Ishaq Bin Hunain*, *Mohammad Bin Zakaria Razi*, *Masuiah Al Mardini* etc had written the books of *Qarabadin* in last years of *Khilafat-e- Abbasiyah*. Arab physicians were first who gave the word distillation, sublimation and fermentation processes. First book regarding principles of pharmacy wrote by *Abul Abbas*, *Najibuddin Samarkandi* and *Daud Bin Abul Bayan*.

Ancient Unani Medicine scholars were well known about *Kulliyat-e-Advia* and uses its knowledge in formulating compound drugs; this paper aims at highlighting historical perspectives of *Kulliyat-e-Advia* in drug formulation and efficacy.

Key Words: *Kulliyat-e-Advia*, *Saidala*, *Qarabadin*.

Munzijate Balgham with Reference to their Mechanism of Action in Stroke Rehabilitation

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ABSTRACT

The basic line of treatment of Falij Balghami is use of *Munzijate Balgham* followed by *Mushilat* and *Muqawwiyat*. *Munzijat* is the group of drugs which suitably modifies the consistency of morbid *Akhlat* to make them able to evacuate from the tissues, vessels and

interstitial spaces. They act either by liquefying the consistency of Ghaleez Akhlat, or by thickening the Raqeeq Akhlat. Nuzj occurs over a period of time which varies according to the affection of different morbid akhlat.

Conventional treatment of stroke entails the use of Antiplatelet, Anticoagulant, and Fibrinolytic drugs which resembles to the mechanism of action imparted by munzije balgham drugs endowed with properties such as Tahleel, Taqtee, and Talteef.

Neuroplasticity and Neuroprotection are considered the fundamental theories behind the long term neurorehabilitation in patients of stroke. Recent studies have proven the effect of a few herbal drugs used as Munzijate Balgham in enhancing Neuroplasticity and Neuroprotection. Studies on human subjects suggest effectiveness of Munzijate Balgham in improving motor power, gait rehabilitation and alleviation of spasticity.

This paper aims at reviewing some common Munzijate Balgham with reference to their mechanism of action in Stroke Rehabilitation.

Key Words: *Munzijate Balgham*, Neuro rehabilitation, Hemiplegia, Faliij

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Unani Treatment Option for Correction of Presbyopia

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ABSTRACT

Presbyopia is a problem attributed to age-related loss of accommodation. Two major Muslim philosophers and physicians, Al-Razi and Ibn Sina, provided a lasting impact on Muslim medicine. Through their compilation of knowledge into medical books they each had a major influence on the education and filtration of medical knowledge in Islamic culture. bn al-Haitham changed the traditional view by putting forward the theory that the objects are seen by rays passing from them towards the eye and not by the opposite process. Most of his successors did not agree with his view, but Al-Birni and Ibn Sina independently and fully agreed with him. Ibn al-Haitham solved a number of optical, problems on the basis of the mathematical knowledge of his day. Ibn al-Haitham dealt with such a medley of topics as the structure of the eye, optical illusion, perspective, binocular vision

Keeping all in view a study was conducted to evaluate the efficacy of ocucure, a herbal formulation for the treatment of presbyopia compared to leutivit (Placebo). The therapeutic evaluations of these medicines were conducted on 111 clinically and microscopically diagnosed cases at Dr. Muslim Eye Care Hospital Karachi.

According to the statistical analysis presbyopia was cured in 17 patients (28.81%) out of 59 patients by the use of ocucure (Test drug), and in 6 patients (11.53%) out of 52 by the use of leutivit (control drug). The finding from this study demonstrated the following salient clinical assessment; there was statistically significant difference when comparing the effectiveness of herbal medicine ocucure to leutivit (Placebo) for the treatment of presbyopia as described in the thesis. This is clearly evident that ocucure possesses a therapeutic value

for the treatment of presbyopia and its associated symptoms but the rate of complete improvement is low in both therapies.

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Work of Ibn Sina on Four Humours Applying Clinical and Conventional Laboratory Techniques

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ABSTRACT

This research study was conducted to understand the philosophical bases of Tibb-e-Unani and play an important role in the advancement of Unani medicine concepts in regard with modern science and technology. The aims of this study are to explain and interpret the theory of Humors (Akhlat) of Unani medicine, Identification of humors as physiologically identified fluids in human body and Biochemical/ laboratory oriented identification of one or more types of humors.

This is a descriptive and observational study to select subjects, assess and collect prospective data in a research study. It is uni-center evaluation based study, conducted on the healthy subjects living in Karachi, at Shifa-ul-Mulk Memorial hospital for Eastern Medicine, Hamdard University, Karachi.

Individuals of both genders (20 years – 50years of age) consisting of 100 healthy candidates registered and evaluated. As a first step complete medical history was recorded. Thereafter, dominant body humor and temperament were evaluated according to clinical trial Performa. Then the laboratory investigations of all the registered candidates were carried out where in complete blood picture, lipid profile, liver function tests, random and fasting blood sugar levels, serum urea, uric acid and creatinine levels were obtained. The data so recorded were treated in statistical term with SPSS version 17 and accordingly mean and standard deviation of all these were calculated and with Anova the p values were determined as <0.05 which are quite significant. Temperature, pulse, respiratory rate and blood pressure consist of systolic and diastolic blood pressure and the height and weight were recorded which displayed significant p values as < 0.05. Out of 100 candidates 25 candidates of each humor and temperament were assessed by cross tabulation.

In conclusion the four humors play a part in deciphering to maintain the function of different systems of body exhibiting the humoral and temperamental characteristics thus ultimately cause disease due to qualitative and quantitative changes. Therefore, humors play a pivot role in the regulation of body functions to maintain health.

Food Industries and Environment

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ABSTRACT

The food-processing industry has special concerns about the health and safety of the consumer. Key resources used by the food-processing industry include the water, raw materials and energy. Traditionally, the food-processing industry has been a large water user. Water is used as an ingredient, an initial and intermediate cleaning source, an efficient transportation conveyor of raw materials, and the principal agent used in sanitizing plant machinery and areas. Although water use will always be a part of the food-processing industry, it has become the principal target for pollution prevention, source reduction practices. The key environmental issues for the food industry include the following: Wastewater. Primary issues of concern are biochemical oxygen demand (BOD); total suspended solids (TSS); excessive nutrient loading, namely nitrogen and phosphorus compounds; pathogenic organisms, which are a result of animal processing; and residual chlorine and pesticide level solid waste. Primary issues of concern include both organic and packaging waste. Organic waste, that is, the rinds, seeds, skin, and bones from raw materials, results from processing operations. Inorganic wastes typically include excessive packaging items that are, plastic, glass, and metal. Organic wastes are finding ever-increasing markets for resale, and companies are slowly switching to more biodegradable and recyclable products for packaging. Excessive packaging has been reduced and recyclable products such as aluminum, glass, and high-density polyethylene (HDPE) are being used where applicable. Use of any of these advanced processes improves the final wastewater effluent quality and also increases the likelihood of recycling renovated processed water ultimately making the food industries environment friendly.

Key Words- Food Industry, Environment, BOD, COD, Waste, Water

Epigenetics and Chronic Tuberculosis

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ABSTRACT

Tuberculosis has evolved as a major health crisis globally, causing about 2 million death per year. In recent years, researchers indicate the role of epigenetics on gene expression and phenotype in the field of cancer. *Mycobacterium tuberculosis* (Mtb) has also evolved strategies to promote their survival by dramatically modifying the epigenome of the host cell through histone acetylation and DNA methylation. Other epigenetic mechanisms such as chromatin

remodeling and non-coding RNAs might have role in chronic persistence of Mtb, but yet to be explored. IFN- γ , one of several immune effectors important for controlling Mtb infection, mediates the transcription of several genes including MHC-II transactivator (CIITA) which itself is necessary for the expression of MHC-II molecule. However Mtb infection blocked the CIITA transcription through inhibition of SWI/SNF binding and histone deacetylation at CIITA promoter. A very recent work showed Mtb infection causes aberrant methylation of certain CpG sites over Toll-like receptor (TLR) 2 promoter, thereby lowering its expression on monocytes. TLR2, a pattern recognition receptor, gets activated upon Mtb infection and triggered MyD88-dependent and independent signaling pathway, leading to Th-1 predominant immune response and reduced viability of Mtb. Further analysis of DNA methylation at both genome and specific gene level might help in designing of drugs for the cure of tuberculosis.

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Forestalling of Morbidity Perspective of Unani Medicine

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ABSTRACT

It is a general belief that Unani products are safer than the synthetic or modern medicines notwithstanding the fact that many Unani formulations contains heavy metals as essential ingredients. It reflects the potential of morbid behavior of drugs of Unani System of Medicine. Thus the expanded use of these medicines has led to the concerns relating to its safety, quality and effectiveness as some of the drugs are even made of heavy metals like arsenic, mercury, copper, zinc, gold and silver. The poor quality control of these products, especially production at local level, causes health hazard as some products may have unusually high concentration of poisonous ingredients that may be prove to be fatal.

Unani drugs also harbor the biological contaminants that potentiate acute food poisoning. It has been reported that the stored drug samples harbor mycotoxin producing fungi in high frequency. Further, the practices used in harvesting, handling, storage, production, processing and distribution make medicinal plants subject to contamination.

No one wants to harm patients, but unfortunately any drug or the procedures will sometimes do just this. A foremost duty of the preventive expert is to identify the risks and the risk factors in the shortest possible time so that harm can be avoided or minimized. When communicated effectively, this information may allow a rational use of Medicines and thus can prevent many adverse reactions. This will ultimately help each patient to receive optimum therapy, and on a population basis, will help to ensure the acceptance and effectiveness of the system of Medicine.

Nanoparticles and their Applications in Unani Medicine with Reference to Bhadbhuja Ki Chhat Ki Rakh

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ABSTRACT

Nanoparticles are particles between 1 and 100 nanometers in size in nanotechnology, a particle is defined as a small object that behaves as a whole unit with respect to its transport and properties. Nanoparticle research is currently an area of intense scientific interest due to a wide variety of potential applications in biomedical, optical and electronic fields. The National Nanotechnology Initiative has led to generous public funding for nanoparticle research in the United States.

Nanomedicine is the medical application of nanotechnology. Nanomedicine ranges from the medical applications of nanomaterials, to Nano electronic biosensors, and even possible future applications of molecular nanotechnology. Current problems for nanomedicine involve understanding the issues related to toxicity and environmental impact of nanoscale materials (materials whose structure is on the scale of nanometers i.e. billionth of a meter). Functionalities can be added to nanomaterials by interfacing them with biological molecules or structures. The size of nanomaterials is similar to that of most biological molecules and structures; therefore, nanomaterials can be useful for both in vivo and vitro biomedical research and applications. Thus far, the integration of nanomaterials with biology has led to the development of diagnostic devices, contrast agents, analytic tools, physical therapy applications, and drug delivery vehicles. The use of bhad bhuje ki chhat ki rakh is since beginning of Unani Tibb. The Rakh is sterile, absorbent and having strong penetrating power because of its smallest (Nanoparticles) size. It is used in different marham (ointments), which has its own importance and a good field of research.

Pharmaceutical Processing & Evaluation of *Arq-e-Maa-ul-Laham*: A Protein Based Unani Formulation

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ABSTRACT

Apart from *Ilaj-bil-dawa* (Pharmacotherapy), *Ilaj-bil-tadbeer* (Regimenal therapy) and *Ilaj-bil-yad* (Surgery), a significant mode of management/treatment is *Ilaj-bil-ghiza* (Dietotherapy). In Unani classical literature, a number of single drugs and formulations find mention as *Ghiza-e-dawae*, i.e. an equivalent to a new term nutraceutical. Their importance lies in the fact that most of illnesses arise as a result of deficiency/malnutrition, prolong disorder/disease related to diet and regimen. **Materials & methods:** *Arq-e-Maa-ul-Lehm*

(AML) was prepared as per procedure laid down in NFUM-1. The parameters for qualitative analysis such as ninhydrin test, biuret test, xanthoprotein test and lead acetate test were done for the presence of protein on the basis of colour and precipitate. The Lowry's method based on UV-visible spectroscopy at the absorbance of 660 nm was employed for determination of total protein concentration. **Observations & Result:** All qualitative tests were found to be positive which indicate that the presence of protein in ALM, and 4.7mg/ml concentration was reported in the quantitative analysis. **Conclusion:** The study provides scientific basis for its therapeutic use in Unani medicine and validates the formulation too.

Keywords: Unani, *Arq-e-Maa-ul-Leham*, *Ghiza-e-dawaae*/nutriceutical.

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Musli Safaid (*Chlorophytum borivilianum*) – A Potential Unani Drug in the Prevention of Free Radical Induced Damages

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ABSTRACT

Musli Safaid (*Chlorophytum borivilianum*) is a well-known Unani drug. Its references are available in the Unani classics namely; *Kamil al-Sana'at*, *Al-Qanun Fi'tTib*, *Al-Jami li Mufredat al-Adviyawa wal-Aghziya* and *Khazain al-Advia*. Therapeutic potential of MusliSafaid has been mentioned in various disorders such as; *Qillat-i-Mani* (Oligospermia), *Riqqat-i-Mani* (Decreased viscosity of semen), *Jarayan* (Spermatorrhoea) and *Sailan-ur-Reham* (Leucorrhoea). Some Unani physicians also advocated its use in Amraz-e-Mafasil (Musculo-Skeletal disorders) and also in restoring general health. Recent studies conducted on scientific lines explore new vistas for its potential as antibacterial, antifungal, aphrodisiac, antipyretic, immunomodulatory, anti-diabetic, anti-hyperlipidaemic, anti-tumor, anti-mutagenic and chemomodulatory potential. The present study focused on determination of the free radical scavenging activity of *C. borivilianum* under the oxidative stress which results in generation of disease causing free radicals. For the purpose of study, *in vitro oxidation systems* were used where in the free radical scavenging activity of crude ethanolic root extract of *C. borivilianum* was determined using different antioxidant assays like DPPH, FRAP and Nitric Oxide. Beside this phytochemical analysis of the crude extract of *C. borivilianum* was done using preliminary phytochemical tests. HPTLC profiling was also done in order to confirm the presence of active constituents although further studies are needed to identify and characterize these phytoconstituents. Preliminary phytochemical analysis revealed the presence of several bioconstituents like saponins, tannins, flavanoids etc. *In-vitro* antioxidant assays performed showed the significant antioxidant activity of our extract. The percentage inhibition of radicals showed the radical scavenging activity of *C. Borivilianum* upto a significant level.

Effect of Herbal Unani Compound Drug in Cases of *H. pylori* Positive Antral Gastritis

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ABSTRACT

Introduction: Gastritis is a well known medical entity since centuries. Common symptom of *warm-e-meda* are burning sensation in upper abdomen, pain in epigastric region, nausea vomiting, regurgitation, epigastric heaviness, indigestion etc.

Different single and compound drugs and various regimen of treatment have been advised in Unani Medicine. Loabiyat, samaghyat, musaffiat like Elva, Khuranjan, Khatmi, Gaozaban, Asl-us-soos, Asgand and compound drugs like Majoon-E-Dabeed-ul-ward, Jawarish Anarain, Sharbat Anar, Jawarish Mastagi etc. have been shown to have effect in *warm-e-kabid*.

Material and Methods: Study was conducted on 247 patients from February 2011 to May 2013. On arrival of the patients having symptoms of gastritis Upper G.I. endoscopy was done to confirm antral gastritis. It was also confirmed that whether the patients with antral gastritis were *H.pylori* +ve or -ve. The drug compound was prescribed for 12 weeks and at the end the symptomatology was recorded, Upper G.I. endoscopy was repeated and test for *H.pylori* +ve or -ve was repeated.

Results and Observation:

Out of 247 patients 150 were *H.pylori* +ve patients and 97 were *H.pylori* -ve. Total Percentage of patients who become *H.pylori* -ve with normal upper GIT & clinical improvement after using the drug compound was 89.09 %, 5.45 % of patients remained *H.pylori* +ve with normal upper GIT & clinical improvement. 3.63 % patients were with *H.pylori* & antral gastritis who did not repeat afterwards (defaulters), 1.8 % patients did not get clinical relief, hence stopped treatment in midway.

Conclusion: This study confirms that the used Unani Drug compound relieves the symptoms of gastritis as well as makes the patient *H.pylori* free, confirmed by Upper G.I. endoscopy and Biochemical tests.

Key words: Antral Gastritis, Endoscopy, *H.pylori*.

**Influence of *Pochonia Chlamydosporia* in Inducing Systemic Resistance
Against *Meloidogyne Incognita* Affecting *Vigna Mungo* L. (Ur'd)
A Highly Proteinaceous Crop**

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ABSTRACT

Root knot nematode, *Meloidogyne incognita* is a destructive soil pathogen of pulses causing enormous yield loss and thus economic instability. So far a number of microbial antagonists have been tested with some promising results against the nematode. Studies under greenhouse pot experiment were carried out to evaluate the effect of a rhizospheric microbial antagonist *Pochonia chlamydosporia* on defence related enzymes in black gram, *Vigna mungo* L. A highly proteinaceous crop, to alleviate the biotic stress caused by *Meloidogyne incognita*. Pharmacologically, extracts of *Vigna mungo* have demonstrated immunostimulatory activity in rats and is also benefits Nervous system disorders. Results of the current investigation reveal that antioxidant activities like superoxide dismutase (SOD), peroxidase (POX) and proline content in black gram was maximum when the antagonist fungi was applied 15 days prior to the nematode inoculation as compared to the simultaneous and later inoculation. Likewise all phytomorphological parameters showed significant improvement whereas pathological parameters *viz.*, number of eggs, eggmasses and nematode population showed significant reduction. Hence, it may be concluded that *Pochonia chlamydosporia* is a potential biocontrol agents of *M. incognita* that directly influences the nematode reproduction by infecting nematode eggs and eggmasses and indirectly by eliciting the defense enzymes thus making the plant immune against the nematode.

Key words: *Meloidogyne incognita*, *Pochonia chlamydosporia*, *Vigna mungo*, SOD, POX, Proline.

Applications of Novel Drug Delivery System for Unani Medicine

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ABSTRACT

Novel drug delivery system is a novel approach to drug delivery that addresses the limitations of the traditional drug delivery systems. The drug delivery system used for administering the herbal medicine to the patient is traditional and out-of-date, resulting in reduced efficacy of the drug. If the novel drug delivery technology is applied in herbal medicine, it may-

- Improve therapy by increasing the duration of action and reducing the side effects.
- Increase patient compliance through decreased dosing frequency and convenient routes of administrations.
- Achieving targeting of drugs to a specific site to reduce unwanted side effects and obtain maximum efficacy.
- Lead to reduction in dose and thus reduction in side effects of drugs.

Standardized plant extracts or mainly polar phytoconstituents like flavonoids, terpenoids, tannins, xanthenes when administered through novel drug delivery system show much better absorption profile which enables them to cross the biological membrane, resulting enhanced bioavailability. Hence more amount of active constituent becomes present at the site of action (liver, brain, heart, kidney, etc.) at similar or less dose as compared to the conventional plant extract or phytomolecule. Hence, the therapeutic action becomes enhanced, more detectable and prolonged. Several excellent phytoconstituents have been successfully delivered using NDDES. Hence there is a great potential in the development of novel drug delivery systems for the plant actives and extracts.

Key Words: Novel Drug Delivery, Phytoconstituents, Phytomolecule.

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Health benefits of Honey

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Unani drugs have been an integral part in the treatment therapy of various diseases. Despite of great advance observed in modern medicine in recent decades, Unani drugs still make an important contribution to health care, in which honey is one of the nature's most splendid gift to mankind and best remedies as its health benefits mentioned in Quran & Hadiths.

- In Holy Quran it is stated, "There comes from their (honey bees) beliefs a drink of many colors in which there is healing of mankind".
- The prophet (PBUH) used to drink honey with water daily in the morning.
- Honey is a food, supplement of food, preventive, means for treating some disease, and is being used in cosmetics. So honey has a wide range of application as mentioned below-
- Honey is taken in the morning before breakfast mixed with water for the prevention of constipation.
- If it is eaten before sleep with water and warm milk, calm down the Nervous System and provides a restful and healthy sleep.
- Daily use of honey as a supplement enables to remove the excess water from blood and reduce blood pressure.
- Honey alleviates cough and inflammatory joint pains. It also helps to stop the children's bed wetting. Taking 2 tsf of honey with every meal relieve the muscles cramps.
- Honey prevents the occurrence of blister and skin deformities due to burns.

- Though honey has more calories than sugar, when it is consumed with warm water, it helps in digesting the fats stored in the body. Similarly honey and lemon juice as well as honey and cinnamon help in reducing in weight.
- Honey has antibacterial and antifungal properties, so it is often use as a rational antiseptic.
- Honey contains nutraceuticals, which are very effective for the removal of free radicals from the body. As a result, our body immunity is improved against many conditions even potentially fetal ones like cancer or heart disease.

In the views of the above mentioned beneficiaries honey is the best Unani drug to preserve, to promote and to restore the physical and mental health of an individual

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Study of Diuretic Activity of Kabab Chini (*Piper cubeba*)

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ABSTRACT

Kabab chini (*Piper cubeba*) is an important drug of Unani Medicine, widely described to be effective in urogenital disorders, and is being used by physicians from ancient times. The present study was designed to evaluate the diuretic activity of Kabab chini (*Piper cubeba*) in albino rats. The powder of Kabab chini was administered to the experimental rats orally at doses of 800 mg/kg/BW and 1200 mg/kg / BW / p.o. in two different groups of animals two other groups of albino rats received frusomide (20 mg/kg) and normal saline (2 ml/animal) served as standard and controlled groups. The diuretic effect of the test drug was evaluated by measuring urine volume, sodium, potassium and chloride content. The findings observed in both the groups were compared with control groups using one-way ANOVA with Dunnett's multiple pair comparison test. Urine volume was significantly increased by the two doses of Kabab chini in comparison to control group. Both the doses have exhibited dose dependent excretion of electrolytes when compared to control group. The diuretic effect was found to be significant statistically ($P < 0.05$).

Keywords: Diuretic activity, Kabab chini, (*Piper cubeba*), Unani Medicine.

Use of HPLC in Conclusively Distinguishing Between Two Important Unani Drugs Confounded With Each Other Namely Suranjan Shirin And Suranjan Talkh

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ABSTRACT

Suranjan is one of the prime drugs used for arthritis in Unani System of medicine. Two varieties of the drug are available in the market under the name of Suranjan. In Unani Medicine they are named as Suranjan Shireen and Suranjan Talkh which are identified as *Colchicum autumnale* and *Colchicum luteum*. These two varieties are often mutually confused with each other and likely to have significantly different therapeutic behaviour. So there is a need of distinguish between the two varieties of Suranjan.

Some studies have been undertaken to the comparative pharmacology but distinguishing their botanical and phytochemical identification has not been attempted by accurate methods. To resolve the problem one method is to accurate estimation of colchicine content. High Performance Liquid Chromatography (HPLC) is one of the best techniques for accurate estimation of colchicine content. So, the present study was designed to distinguish the two varieties of Suranjan by accurate estimation of colchicine content through HPLC. 3 gm of the powdered drug was extracted in petroleum ether and dissolved in 6 ml of 75% ethanol to yield test sample. Standard solvent used was methanol at flow rate of 1ml/minute. The peaks eluted was detected at 245 nm and identified with authentic standard at 3.2 minutes of Retention time. It was compared with both varieties of Suranjan and was found that colchicine concentration was higher in Suranjan Talkh (7.6%) as compared to the Suranjan Shireen (7.4%). Therefore the present study offers a phytochemical concentration criterion, namely, colchicines content to distinguish between Suranjan Shireen (*Colchicum autumnale*) and Suranjan Talkh (*Colchicum luteum*) by an objective parameter.

Key Words: HPLC, Colchicine, Suranjan Shireen, Suranjan Talkh, *Colchicum autumnale*, *Colchicum luteum*.

Non Alcoholic Fatty Liver Disease (Nafld): And it's Future Treatment

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ABSTRACT

Non Alcoholic Fatty Liver Disease (NAFLD) is a chronic liver disease that affects a high proportion of the world's population. According to modern concept, if more than 5-10% of liver's weight is fat then it is called as fatty liver. It has four stages viz. steatosis, non alcoholic steatohepatitis, fibrosis and cirrhosis. In Unani system of medicine, liver is one of the Aazae-raisa(vital organs) and it is the

centre of Quwwahe-tabbiya. According to Unani concept, most of the diseases occur due to Sue-mizaj (sada or maddi) which results in Zaufe-kabid. Warne-kabid is known from ancient times and Renowned Unani physicians like Galen, Ali-bin-Rabban Tabri, Razi, and Ibne-Sina described its etiology and clinical features in detail in Unani literature. The prevalence of Non Alcoholic Fatty Liver Disease ranges from 9-36.9% and is closely associated with diabetes mellitus, obesity and hyperlipidaemia. Several medications with potential benefit are being evaluated and deserve further investigation through experimental studies and well controlled clinical trials.

Keywords- Non alcoholic fatty liver disease, steatosis, steatohepatitis, Quwwahe-tabbiya, zaufe-kabid, warme-kabid.

[P-111]

Therapeutic Evaluation of Neem (*Azadirachta indica* A. Juss.) in Patients of Qooba (Dermatophytosis)

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ABSTRACT

Qooba (dermatophytosis) is one of oldest and commonest skin ailments. Despite recent advances in medical field, fungal infections of the skin are on the rise. So, present study was designed to evaluate the efficacy of Neem (*Azadirachta indica* A. Juss.) in patients of dermatophytosis in the Department of Moalajat, AKTC and hospital. This was a randomized standard control clinical trial in which Neem was taken as a test drug while Fluconazole was taken as a standard control. All the patients were randomly allocated into 2 equal groups (test and control), comprising of 50 patients in each group. The patients of the test group were advised to take capsule Neem 500 mg (aqueous extract) orally twice daily for 6 weeks and to apply Roghan-e-Neem on the affected areas for the same duration. Similarly, the patients of the control group were given fluconazole 150 mg once a week for 6 weeks and were also advised to apply its gel (0.5%) twice daily for the same duration. Statistical evaluation showed significant improvement in both the groups, however no statistical difference was found between the two groups.

Key words: Qooba, Dermatophytosis, Neem, *Azadirachta indica*

[P-112]

Management of Migrane (Shaqqea) in Unani System of Medicine

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ABSTRACT

Migraine (Shaqqea) occurs in specified area of head and disturbs its functions, which can be due to external or internal factors. The internal factors may be *maddi* (involving matter) or *sadah* (which do not involve matter). *Shaqqea* -Arabic word, is derived from the word, *Shaq* - means a part or a side, due to which it is named as *Shaqqea*. The cause is either *riyah haar* or *imtila*. In Unani the basic principle of treatment is *Ilaj bil zid* i.e treatment is in contrast to nature and *Mizaj* of the disease and is

adopted in two ways i.e. observational and rational methods which are employed through diet, drugs, regimes, manipulation techniques and operations.

[P-113]

Herbal Remedies of Wetlands Macrophytes in Aligarh (Uttar Pradesh), India

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ABSTRACT

Wetlands provide a unique habitat for several medicinal plants. In spite of their commercial value, the local community utilizes good number of these plants for various curative purposes. A number of these plants are very sensitive to the fluctuation in the normal physico-chemical parameter of the wetland. A slight alteration of the wetland may result in the disappearance or the extinction of these plants. This will ultimately result in large scale economic loss in terms of the medicinal product. Apart from the loss of plants, this will also result in the loss of local knowledge on the medicinal properties of these plants which very often can't be retrieved. Attempt has been made to document some of the little known medicinal properties of wetland plants used by local community of Aligarh, Uttar Pradesh.

[P-114]

Morpho-anatomical and physicochemical investigation of *Cannabis sativa* (Cannabaceae)

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ABSTRACT

Cannabis sativa L. is *dioecious* herb belongs to the family Cannabaceae. Whole plant is reported for various ethnobotanical and therapeutic uses. All parts viz. leaves; stem and root were studied for macroscopical, anatomical, physicochemical and phytochemical, aiming to provide anatomical data to increase the quality control of this plant drug. Scanning electron microscopy techniques were used for floral parts which showed the presence of thread like trichomes and non-glandular trichomes. Microscopically, leaf surfaces covered with numerous glandular and non- glandular trichomes with or without cystolith. Stem showed the presence of characteristics gelatinous bast fibres along with resin ducts. Interestingly, leaf and stem showed presence of druses of calcium carbonate and calcium oxalate were as rectangular prismatic crystals of calcium oxalate were found in root only. Phytochemically, the various extracts showed the presence of diverse phytochemicals such as alkaloids, terpenoids, glycosides, polyphenols, steroids, tannins, resin etc. Leaf showed the maximum concentration of sugar, starch, flavonoids, phenol, and tannin content as compare to stem and root. The above finding will serve the purpose of quality control and assurance for the future studies.

Key words: *Cannabis sativa*, Medicinal plant, Morphoanatomical diagnosis, Pharmacognosy, Quality control, Scanning electron microscopy.

A critical study of dimensions of *Mizaj-e-Advia* (Temperament of Drugs) in relation to the chemical properties with special reference to its active principles/alkaloids

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ABSTRACT

In Unani system of Medicine basic classification of the drug is according to its origin i.e. Herbal, Animal & Mineral Drugs and if present in their natural form are called *Mufrad* (Simple) and combination of simple drugs is called *Murakkab* (Compound). In fact the naturally occurring drug is not Simple one but is composed of large number of ingredients (compounds) – organic or inorganic or both, having diverse qualities and function, of which some are more active than others performing synergistic or corrective functions.

Mizaj (Temperament) is the pattern resulting from the interaction of the opposing qualities of elements. These elements divide into minute particles to secure intimate contact with one another, emerges a new pattern of qualities which is uniformly distributed among the particles of all the elements.

All the different ingredients of a drug have different molecular structure (*Surat-e-Nau'yah*) and therefore their temperaments are also different. When the compounds of different temperaments assemble together in particular drug, there develops one resultant temperament in the natural compound, which is the sum total of all the temperaments. The temperament of active ingredients dominates.

Because of the temperament the chemical properties one drug differ from those of others.

The temperament of an artificially prepared compound drug is the sum total of the temperaments of all the naturally occurring single ingredients constituting the compound.

Like the temperaments of other smaller or bigger compounds in the microcosm or the macrocosm, the temperaments of the drugs are also expressed in the terms of four *kayfiyat* (qualities) – Hot, Cold, Moist and Dry (*Har, Barid, Ratab* and *Yabis* respectively). These qualities signify particular meanings when attributed to drug in regard to their potencies.

All drugs carrying temperamental qualities are graded into four degrees according to the potency of their qualities heat, cold, moistness and dryness. (For example: A hot drug is graded as hot in Degree I, Degree II, Degree III, and Degree IV each of which has its own quality and chemical property)

Key Words: *Mizaj* (Temperament), Drugs, Qualities, Chemical properties, Active Principle

Marham-e-Dakheliyoon: A Pharmacognostical Study

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ABSTRACT

Marham-e-Dakheliyoon is a compound formulation for use in the patients of Gynaecological problems like cervicitis, cervical erosion and cervical swelling. Its name is Dakheliyoon is due to “Luabat” (mucilage). It is mentioned by *Hakeem Kabeeruddin* in his famous book “*Bayaz-e-Kabeer*”, its also mentioned in other books like *Matab-e-Hameed, Kitab-ul-Murakkabbat, Rehbar-e-Moalijat, Kitab-ul-Hawi*. The preparation has been used since old ages by *Unani* Physicians and the product is time tested. *Marham-e-Dakheliyoon* is used locally in cases of cervicitis, which is an inflammatory condition following Injury (*Tafarruq-ittesal*) or Infection (*Tadya*) and according to *Unani* physicians by *Sue-mizaj*. *Marham-e-Dakheliyoon* is composed of *Tukhm-e-Khatmi, Tukhm-e-Kanucha, Tukhm-e-katan, Tukhm-e-Hulba, Isapghol, Murdarsang* and *Oil of Zaitoon*. *Tukhm-e-katan* has *Muhallil-e-warm* (Anti-inflammatory) *Mulattif* (Demulcent), *Mulaiyan* (Laxative), *Qabiz* (Astringent) medicinal actions. *Isapghol* has *Mohallil* (Resolvent), *Mulayyin* (Laxative), *Musakkin-e- Alam* (Analgesic), *Muzliq* (Demulcent) medicinal actions. *Tukhm-e-Kanucha* has *Mulattif* (Demulcent), *Daf-e-Nuzj* (Cathartic), *Mufatt-e-Sudad* (Deobstruent), *Musakkin-waja-ul-uzn* (Analgesic for otalgia) actions. *Tukhm-e-Khatmi* has *Mulattif* (Demulcent), *Daf-e-Nuzj* (Cathartic), *Mufatt-e-Sudad* (Deobstruent), *Musakkin-waja-ul-uzn* (Analgesic for otalgia), *Habis* (styptic) actions. *Tukhm-e-Hulba* has *Jali* (Detergent), *Muhallil* (Antiinflammatory), *Munjiz* (Concotive), *Munafiss-e-balgham* (Expectorant) medicinal actions. *Murdarsang* has *Akkal* (Erosive), *Jali* (Detergent), *Mujaffif-e-Quruh* (Cicatrizent), *Munaffis-e-Ratubat* (Purifier/Liquidifier) actions. *Zaitoon* has *Murattab* (Hydrating), *Mulaiyyan* (laxative), *Muhallil* (Resolvent), *Musakkin* (Sedative) actions.

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