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# *The Spectrum*

## *Newsletter*

**Pakistan Society of Chemical Pathologists**

**www.pscp.org.pk**

**Volume No 5; April 2017**



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‘The Spectrum’ and PSCP welcome participants of 8<sup>th</sup> Annual Course of PSCP to held at CMH Lahore Medical and Dental College, Lahore from 28<sup>th</sup> April 2017 to 29<sup>th</sup> April 2017.  
May this event be a total success

# From the Chief Editor's Desk

In the name of Allah the most Merciful and the most Benevolent. Alhamdulillah, 5<sup>th</sup> Edition of ***The Spectrum*** is in your hands. We could not publish this edition at the end of 2016 according to the previous tradition; this delay is deeply regretted. The main reason was immense commitments of the editorial staff. Occurrence of this 8<sup>th</sup> PSCP Course provided us a big motivation to publish The Spectrum. Once again it would not have been possible without moral support of my editors ***Dr Sara Reza*** and ***Dr Maryam Rafique***, who always persuaded me to continue the tradition without gap. We cherish the efforts of ***Prof (Brig) Abdus Sattar and Prof Asim Mumtaz (President PSCP), Dr Nusrat Alavi, Secretary PSCP and Dr Nadia Mehmood*** for arranging the 8<sup>th</sup> PSCP Course. We pray a big success of this great educational activity. ***We dedicate this issue of "The Spectrum" to the "Chem Path Family"*** the name given to the WhatsApp Group of PSCP Members. The group is now the most rapid and effective mean of communication between the members. Its popularity has surpassed our Facebook group ***"Pakistan Society of Chemical Pathologists"*** which used to be a very active and popular IT-Based communication means at one time.

In this issue we have very useful article on ***"Advanced Instrumentation in Clinical Chemistry"*** by Dr. Ayesha Hafeez, a very talented Consultant in Chemical path. ***"Laboratory Tests Repertoire to Facilitate the Organ Transplantation Program"*** by Dr Sahar Iqbal is another information dense article telling us about a new and very important area of patient care. Dr Younas has written about an important aspect of lab management i.e. ***"Communication Within the Laboratory and Other Departments of Healthcare Setup"***. ***"Self Discovery in the Quest to Discover God"*** is written by a very promising junior trainee of AFIP Rawalpindi. A brief introduction of Functional Divisions of PSCP has also been given in this issue.

**Prof (Brig) Aamir Ijaz,  
Armed Forces Institute of Pathology,  
National University of Medical Sciences, Rawalpindi.**



## Message from President PSCP

It gives me immense pleasure to write my first message for 'The Spectrum' as President PSCP. I am greatly indebted to Allah Almighty who has bestowed upon me the great honour of leading an organization of highly professional persons. I will also request all members of PSCP to accept my deepest gratitude on selecting me for this important post. I also want to pay sincerest tribute to our predecessors Prof Asma Shaukat and the previous council for their outstanding performance and keeping the flag of PSCP so high. Their tenure was indeed a total success. On behalf of all the office bearers and members of the PSCP Council I want to extend my sincere pledge that we will not leave any stone unturned for the uplift of this society.

Since its first issue 'The Spectrum' has become a symbol of PSCP tradition. I have always been a great fan of this newsletter. Prof Aamir and his team of editors i.e. Dr Sara Reza and Dr Mariam Rafique deserve commendation of highest degree for maintenance of such a superb standard of this publication. I hope this newsletter will become a greater source of education and entertainment for the PSCP members in future by becoming a quarterly or bimonthly issue.

We have several plans for improvements of PSCP outlook during our tenure; we have already started working on some of them e.g. Identification Cards for the life members. We will also make our website more interactive and informative in near future. There are several publication projects in hand, too, e.g. a book on reference values and conversion tables. Prof Aamir Ijaz also plans to compile all his teaching material in one book by the name of '*Laurels in Chemical Pathology*'. We wish successful accomplishment of his projects and extend all moral and material support. Such a book indeed will be a great contribution in Chemical Pathology education in Pakistan. Once again I want to offer my greatest gratitude for the editors of '*The Spectrum*'

**Prof Asim Mumtaz**

Prof of Chemical Pathology  
President PSCP



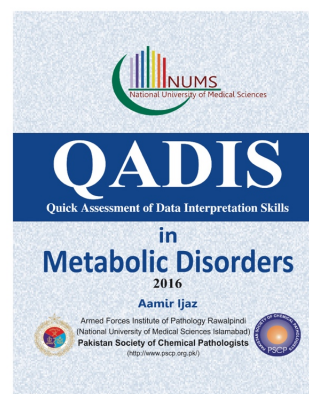
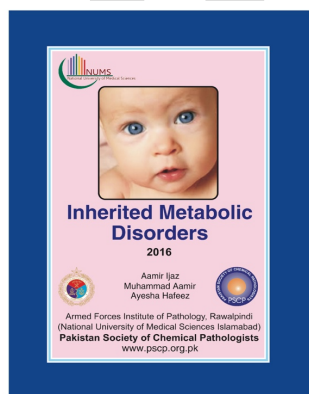
## Another Smooth Transition

The election committee comprising Col Muhammad Dilawar (rtd), Brig Muhammad Rafi Butt and Dr Nadia Mehmood conducted the election process for the term 2017-2018. Keeping the tradition of PSCP, all members of the Council as well as office bearer were elected unopposed. Editors of The Spectrum congratulate Prof Asim Mumtaz and his team to become the 8<sup>th</sup> President and Council of PSCP. We wish them best of luck.

At the same time we also want to appreciate Prof Asma Shaukat and her team for taking PSCP at new heights during their tenure and for setting a very high standard of performance.

## New PSCP Publications

During 2016, two new books were published under the auspices of PSCP:



**Inherited Metabolic Disorders:** This book is a collection of PSCP Guidelines on IMDs. It contains the! definition, types, clinical presentations and diagnostic approach. Then some! Individual disorders are discussed in some in details with clinical scenarios.

















**'QADIS'** is a mammoth task of compiling all the cases along with the relevant explanatory material with references. Another innovation in this compilation is making it a 'workbook' rather than a simple description. So each case (patient) data is followed by an appropriate space, so that the students can write the answers based on their existing knowledge, which will become a mean to activate their prior knowledge

## CONGRATULATIONS!!!!

Two of our members have successfully defending thier PhD thesis and obtaining a PhD Degrees. Wonderful achievement Dr. Wafa. Please accept our facilitations:

-  Dr Wafa Omer Ansari
-  Dr Asma Naseer Cheema

*During 2016 and 2017 many of our associate members have passed FCPS Part Examination in Chemical Pathology We offer our warmest congratulations to all of them i.e.*

-  Dr. Saima Bashir, AFIP Rawalpindi
-  Dr. Shagufta Yousaf, CMH Hyderabad
-  Dr. Shahnaz Noor, QAMC Bahawalpur
-  Dr. Sabahat Tariq, SZMC&H Rahim Yar Khan
-  Dr. Haura Ali, LNH Karachi
-  Dr. Salma Ayub, SIUT Karachi
-  Dr. Erum Saleem, Zia-Ud-Din University, Karachi
-  Dr. Ghulam Murtaza, AS&RC Kohat
-  Dr. Safia Asim, AFIP Rawalpindi
-  Dr. Sadiq Khan, QAMC Bahawalpur
-  Dr. Masood Ansari, MM&DC Multan
-  Dr. Nudrat Fayyaz Khan, QAMC Bahawalpur
-  Dr. Kiran Imran, SIUT Karachi
-  Dr. Majida Yousaf, CMH Lahore
-  Dr. Ayesha Siddiqa, QAMC Bahawalpur
-  Dr. Sibtain Ahmed, AKU Karachi

*Wish you all a bright future filled with the promise of a wonderful career.*

## Glimpses from 7<sup>th</sup> Annual Course PSCP





## International Collaboration

Dr Sibtain (PSCP Member) with Prof. Ozben, Dr Beastall And Prof. Ferrari At Fcc General Conference At Taipei



## PSCP Seminar in Lahore

A One-Day Seminar on Newborn Screening and Inherited Metabolic Disorders was conducted on 1<sup>st</sup> April 2017 in collaboration with ZB Foundation and Chughtai Lahore Lab. Event was attended by more than 75 Chemical Pathologists, Paediatricians and Gynaecologists.



Group of Chemical Pathologists in PSCP Seminar in Lahore



## **Communication Within the Laboratory and Other Departments of Healthcare Setup.**

The laboratory manager must communicate effectively and frequently with appropriate departmental and hospital administrators, hospital departmental, hospital committees, and medical staff to keep them informed of the laboratory's role in achieving the hospital's goals. Today's successful laboratory manager fosters a staff of "knowledge worker." That is, empowered staff members who participate in management decisions. This manager combines empowerment and participative management with the added value that comes from experience and judgment gained as information is gathered and distributed. When staff combines experience and judgment with information, Information becomes knowledge. This process is especially helpful in setting and implementing the short-term and long-term goals of the strategic plan. In addition, the staff must be valued for their experience and judgment, which is based, in part, on their performance and productivity, competency, entrepreneurial skill, risk taking, and creativity.

**Lt Col Muhammad Younas,  
Consultant Chemical Pathologist,  
CMH Malir (NUMS)**

## **Advanced Instrumentation in Clinical Chemistry**

### **1. Evidence Investigator**

A semi-automated, medium through-put, rapid analyser which uses a state-of-the-art analytical technique, that is Biochip array technology. Biochips are solid state devices with discrete testing regions. Nearly 50 drugs /substances can be detected in one sample (whole blood/urine).



### **2. Biochrome 30+ amino acid Analyzer:**

This is a dedicated, state of the art amino acid analyzer based on ion exchange chromatography for the detection and quantification of amino acids in plasma, urine and cerebrospinal fluid. Upto 40 different amino acids or their metabolites can be quantified in a single run. Various aminoacidopathies/inherited metabolic diseases can be diagnosed based on results of amino acids and other routine preliminary biochemical investigations.



### **3. HPLC**

A sensitive, efficient, rapid and economical technique utilizes a form of column chromatography that pumps a sample mixture or analyte in a solvent (known as the mobile phase) at high pressure through a column with chromatographic packing material (stationary phase). The stationary phase [silica or any other polymer] is packed in a tube or column or is coated onto the inner surface of tube or column. HPLC instruments equipped with diode array detectors are in routine clinical use.



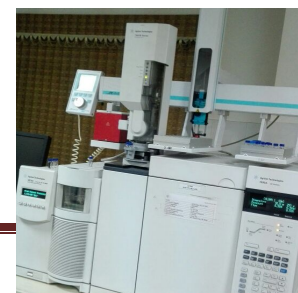
### **4. GC –Headspace**

Headspace sampling is essentially a separation technique in which volatile material may be extracted from a heavier sample matrix and injected into a gas chromatograph for analysis. This instrument is reserved for analysis of alcohols and other volatile substances in whole blood and urine. The representative sample of the headspace vapor is transferred to the gas chromatograph and into the GC column for analysis. The GC headspace is coupled with flame ionization detector.



### **5. GC-MS**

GC-MS combines the resolving power of gas chromatography with the detection specificity of mass spectrometry. Complex mixtures of chemicals may be separated, identified and quantified. Applications of GC-MS technology in clinical chemistry include



detection and quantification of various analytes including drugs and their metabolites, proteins, vitamins, steroids, toxins, pesticides and organic acids. Other than chemistry, the instrument also has a wide range of applications in pharmaceutical, food and beverage industry, and chemical warfare detection industries.

## **6. LCMS/MS triple quadrapole**

This analytical instrument combines the resolving power of liquid chromatography with the detection specificity of mass spectrometry. Liquid chromatography separates the sample components and then introduces them to the mass spectrometer. The mass spectrometer creates and detects charged ions and the data may be used to provide information about the molecular weight, structure, identity and quantity of specific sample components.

LCMS is utilized for drugs of abuse/toxicological analysis, in biological fluids like blood, urine, gastric lavage, hair and various body tissues (autopsy samples). In clinical chemistry, the instrument has a vast utility including analysis for various drugs and metabolites, proteins, vitamins, steroids, toxins and metabolites in newborn screening systems.

## **7. LCMS-TOF**

The liquid chromatography is coupled with time of flight mass analyzer. Ions formed from the sample by the pulsed beam arrive at the detector in order of their mass/ charge ( $m/z$ ) ratios. The TOF system enables compound identification by matching fragmentation patterns of various compounds with a compatible MS/MS software library. Screening of unknown compounds in a mixture can be reliably done utilizing this technology.



Lt Col Dr Ayesha Hafeez  
Consultant Chemical Pathologist  
AFIP (NUMS), Rawalpindi



## **Clinical Laboratory Tests Repertoire to Facilitate the Organ Transplantation Program**

Transplantation is a rapidly emerging discipline for patients with end-stage organ failure, offers a treatment that improves quality of life and increases life expectancy. Solid organ transplantation has become the therapy of choice for end stage diseases of kidney and liver after advancement in surgical techniques and diagnostic facilities over a decade. To ensure a successful transplantation, clinical laboratory plays a vital role by providing diagnostic, screening and monitoring services before, during and after the procedure. To facilitate a transplantation project, a clinical laboratory must be equipped with a complete repertoire of mandatory tests. A sample of clinical laboratory investigations package is shown in the table.

Dr. Sahar Iqbal  
Consultant Chemical Pathologist &  
Assistant Professor Pathology  
Dow University of Health Sciences  
Karachi

### **Congratulations to New Life Members PSCP**

1. Dr. Lubna Sarfraz
2. Dr. Muhammad Usman Munir
3. Dr. Sara Reza
4. Dr. Irum Noor
5. Dr. Sadia Bashir
6. Dr. Farheen Aslam
7. Dr. Saleha Zafar
8. Dr. Qurat-ul-Ain
9. Dr. Majid Latif



## Self Discovery in the Quest to Discover God

Sometimes a piece of music, a soft melody or a rhythmic symphony takes you by your hand and rushes you to the deepest corner of your heart, makes you feel what you had long forgotten about your being, makes you go through the truest, most vivid shades of your soul and then brings smiles, tears, frowns and much more; which even the most picturesque words cannot depict and what can only be felt by us, me and you.

The passion, the yearning to be there! May it be the end of the longest conquest or the top of the highest mountain, it is what you aim at. You fly high without wings, you start running without the warning whistle and run your very own race of existence, and then eyes sparkle like never before, the ecstasy is everlasting and the joy eternal, so very pure!

The big question is when do you hear that piece of music? What is the point in your life when a mere soft melody makes you what you are supposed to be in the real sense? Answer to this most inquisitive question is, when you start speaking the truth to yourself. Being 'true' and 'thankful' and facing the reality, while making peace with it is seemingly the hardest, yet in reality the easiest task to do.

Once it actually happens, the divine faith in GOD'S MIRACLE enlightens you and Heaven's refulgence is bestowed upon you till eternity.

Man is the biggest miracle of God. Thus self-discovery leads him to his Creator and his soul to its destiny...!

***"He is your Lord and to Him you shall return".***

***"Those who 'believe' and do 'good deeds' And humble themselves before their Lord; They are the companions of Paradise, And there they shall live forever".*** Chapter: 11, HUD (Al-Quran)

Dr. Alveena Younas  
1<sup>st</sup> Year Trainee  
Chemical Pathology  
AFIP (NUMS), RWP

# **Functional Divisions of PSCP**

## **Proposal for Executive Council Meeting**

### **to be held at UHS Lahore on 5<sup>th</sup> Nov 2015**

**Background:** PSCP is a professional organization established to promote educational, research and professional activities of Chemical Pathology. With the passage of time PSCP has increased its role in imparting knowledge and skills and bringing trainees and qualified Chemical Pathologist at one platform by holding conferences and other CME activities. Now there is a need to establish some structures, which can provide a rendezvous to function in a more organized way with continuity. To achieve this goal following Functional Divisions (FDs) have been established:

- a. **Research and Collaboration Division**
- b. **International Collaboration Division**
- c. **Education and Publication Division**
- d. **IT Division**

#### **Statutory Aspects:**

- a. FDs will be sub-constitutional functional bodies established to implement charter and goals of PSCP for which it was created. So as such no amendment in constitution will be required to constitute them.
- b. FDs will be established by majority decision of Executive Council (EC) and General Body (GB) of PSCP. Approval of GB may be obtained at a later period if its session is not likely to be held in near future.
- c. EC will be authorized to make any changes in the mandate of these FDs or number of members in any FD.
- d. Similarly EC will be able to create or abolish an FD if required
- e. All decisions of EC will be forwarded to GB for approval.
- f. Publication, Education and Research Cell (PERC) established earlier after the approval of EC will be abolished.

#### **Composition and tenure of an FD:**

- a. Composition of FD will be as under:
  - i. Chair
  - ii. Members (one or two)
- b. All FDs will be constituted for a period of FOUR YEARS i.e. for tenures of two ECs.

- c. Members and Chair of the FDs will be allowed to be re-elected in the next FD.
- d. A prerequisite for election as Chair of the FDs will be at least one year of membership of the same division.
- e. Office bearers, councillors and provincial co-ordinators of PSCP will not be allowed to be elected in any FD during the tenure of their appointment.

## **Function Divisions PSCP for 2017-18**

### **a. Research and Collaboration Division**

Chair: Prof. Rizwan Hashim, FMC, Islamabad

Member: Maj. Dr. Safia Fatima (AFIP)

### **b. Education and Publication Division**

Chair: Prof. Brig. Aamir Ijaz, (AFIP)

Members: (1) Lt. Col. Dr. Ayesha Hafeez (AFIP)

(2) Dr. Sara Reza (QAMC Bwp)

### **c. International Collaboration Division**

Chair: Prof. Dishad Ahmed Khan (NUMS Islamabad)

Members: (1) Dr Imran Siddiqui (AKU Karachi)

(2) Dr. Lena Jaffery (AKU Karachi)

### **d. IT Division**

Chair: Brig. Asif Nawaz (AFIP)

Members: (1) Lt Col Asif Ali Memon (AFIP)

(2) Lt Col Asma Hayat

### **PSCP Zoom Lectures**

During 2016-17 a series of PSCP Lectures were conducted using a software known as ZOOM. About 42 Zoom Lectures have been delivered so far. This series became very popular in PG students of Chemical Pathology. Lectures were attended at more than 20 sites all over the country and in Canada. Students also record the lectures and place them at another web-based programme called 'Dropbox'.

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Karachi.**

**\*Gambat Institute of  
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**“We use the strength of our techs for validating test results,  
not delivering specimens”**