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ACBI NEWS BULLETIN

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among Members

Association of Clinical Biochemists of India
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HEAD OFFICE & SECRETARIAT
Biochem Lab
East Boring Canal Road
Patna-800 001
(Bihar)
kpsacbi@yahoo.co.in

38th ACBICON 2011

National Conference Association of Clinical Biochemists of India

2nd to 6th December, 2011

INVITATION

Department of Biochemistry, Gajra Raja Medical College & J.A. Group of Hospitals
Gwalior (M.P.) India

Dear Colleagues,

We are delighted to invite and welcome you all in this historical city of Gwalior for your participation in 38th ACBICON 2011 (December 2nd to 6th) which is being hosted by Department of Biochemistry, G.R. Medical College & J.A. Group of Hospitals, Gwalior (M.P.). This year will indeed witness a landmark event for all the clinical biochemists gathering from all over India as well as abroad, during which young scientists can present their work and interact with the other colleagues and experts of the field.

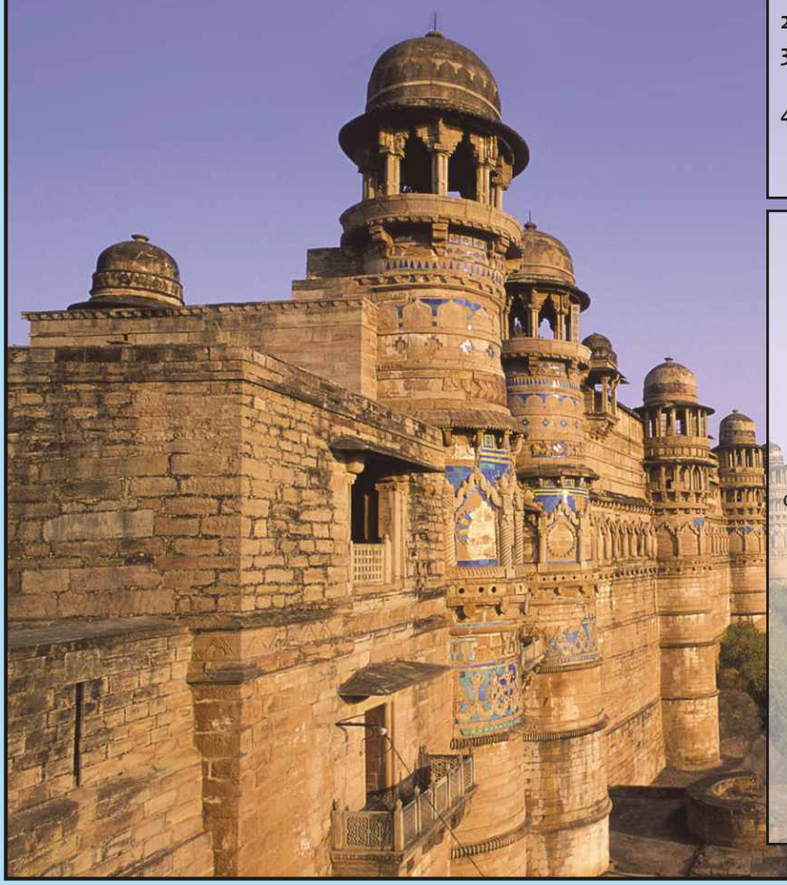
A land of magnificent sights, tales of valour and fierce battles, the echoes of Gwaliors dramatic history, linger on in its rugged forts, glittering crystal chandeliers the exquisitely carved temples and the melodies of Tansen ragas.

On behalf of all members of organizing committee, we invite you all to participate in ACBICON 2011 at Givalior with your colleagues to make this conference a great success.

We are looking forward to welcome you in our classical & glorious city Gwalior

Thank you,

Dr. (Mrs.) Neelima Singh
ORGANIZING SECRETARY



CONFERENCE PROGRAMME

2nd Dec., 2011:	Professional Course
3rd Dec., 2011:	CME/ Workshop • Venue: Gajra Raja Medical College, Gwalior (M.P.)
4-6 Dec., 2011:	Academic Session (Conference) • Venue: ITM Universe, Sitholi, Gwalior (M.P.)

ORGANISING COMMITTEE

PATRON

Dean, G.R. Medical College, Gwalior
Executive Director, ITM Universe, Gwalior

ORGANIZING SECRETARY

Dr. (Mrs.) Neelima Singh
Prof. & Head, Department of Biochemistry
G.R. Medical College, Gwalior
09425339973 (M), 0751-2442800 (R), 0751-2372872 (Fax)
E-mail: acbicon2011@gmail.com

JOINT ORGANIZING SECRETARIES

Dr. Sanjeev Singh
Associate Professor, Department of Biochemistry
G.R. Medical College, Gwalior
09425339972 (M), 0751-2450389 (R)

Dr. Vishall Bharagava
Assistant Professor, Department of Biochemistry
G.R. Medical College, Gwalior
09329782759 (M), 0751-2239293 (R)

ASSOCIATION OF CLINICAL BIOCHEMISTS OF INDIA

Secretariat
Biochem Lab
East Boring Canal Road
Patna - 800 001 (Bihar)
e-mail: kpsacbi@yahoo.co.in

Head Office
Biochem Lab
East Boring Canal Road
Patna - 800 001 (Bihar)
e-mail: kpsacbi@yahoo.co.in

Editorial

Dear members,

Greetings.

This issue of the News Bulletin has a lot of important announcements for all of you to carefully make note of. Continuing with our series on "Lunch with Experts" which was held during the Mumbai ACBI Annual conference, we bring you the 2nd. article in this series. Hat's off to Dr. A. S. Kanagasabapathy for painstakingly getting the discussions written down, editing it and getting it OKed by the other experts. Thank you sir for this grand effort. I must also thank the other members of the "Lunch with Expert" team who helped in bringing their discussion on paper.

I have not been able to get our members to take this Bulletin seriously ! Could some of you give me a good suggestion for improving reader's feedback? ACBI QC Forum was a step in that directions. Please make use of it.

This issue has news on two initiatives that ACBI has taken. The first is the 'TRAINEE COUNCIL' a forum for young scientist/PG's & the second is the TRAINING PROGRAMME TO AVOID PRE-ANALYTICAL ERROR ALONG WITH BD.

Preparations are going on to host the ACBICON 2011 at Gwalior. Dr Neelima Singh & her team are leaving no stones unturned to make it a memorable event. As a Green initiative, the conference brochure has been put on the Web.

Hope to see many of you at Gwalior.

Do keep in touch !

Dr. Rajiv R. Sinha
GENERAL SECRETARY & EDITOR-IN-CHIEF

Dr. K.R. Prasad
EXECUTIVE EDITOR

Contents

ACBI QC Forum

Over the last 3decades ACBI through its constant efforts in spreading the message of QC in medical laboratories in India has created significant awareness among lab personnel on QC. ACBI organises QC lectures in the scientific sessions in annual conferences, QC seminars, QC workshops, etc. During these events the ACBI members utilise the opportunity to get clarification on their queries in routine laboratory performance.

As an extension of these activities, ACBI is proud to announce a novel approach to address several issues on laboratory QC on a regular basis through "ACBI QC FORUM", a special column that will be published in ACBI Newsletter.

We appeal to all ACBI members to feel free to ask questions on various topics such as:

- Internal Quality Control — External Quality Assessment
- Interpretations — Corrective actions
- Preanalytical errors — Analytical and post analytical errors
- Statistical calculations — Six sigma and Sigma metric
- Equipment validation — Method validation
- Reference materials — Calibration
- Traceability — Uncertainty of Measurements
- Internal audit — Accreditation

You are requested to send your questions through e-mail to Dr. A.S.Kanagasabapathy (askanag@gmail.com).

The questions will be passed on to experts (both national and international) in the respective areas of specialization, clarifications will be obtained from them and will be published in ACBI Newsletter under the "ACBI QC FORUM" column along with the names of members who ask the questions as well as the experts who offer clarifications.

Please note that as the space in our Newsletter is limited, only a specific number of questions and answers will be published within the allocated space in each issue of the Newsletter. However, please be assured that all questions and answers will be covered in the subsequent issues.

We appeal to our members to make the best use of this opportunity and make this academic exercise of ACBI a grand success.

Dr Rajiv R. Sinha
EDITOR-IN-CHIEF, ACBI NEW BULLETIN & GENERAL SECRETARY, ACBI

Obituary

ACBI lost a Senior Member : Dr. V. Mallika

Born on 27 March 1948, Dr. V. Mallika, came to Delhi at a very young age during her school days. She did both her graduation and post graduation (MD Biochemistry) from Maulana Azad Medical College. A very intelligent and understanding person, she was also a very good administrator. She was Director-Professor and head of Biochemistry department GB Pant Hospital when she breathed her last right in the department in her room on 3rd may 2011.

Dr. V. Mallika worked in Maulana Azad Medical College, AIIMS and G.B. Pant Hospital in different capacities over a period of 30 years. She was very warm and affectionate and considered her department like her family. Her strong personality made her stand for the right cause for everyone. She was a life member of ACBI. She was active member of review committee of ICMR and lead assessor for NABL. She has numerous publications to her credit. She was given due recognition by the state government and was awarded the 'Delhi State Award'.

She will always be remembered by all her students, colleagues, acquaintances and all her friends spread all over India and abroad. We pray to almighty that her soul rests in peace.

FORTHCOMING EVENTS

5th FIMSA INTERNATIONAL CONGRESS OF IMMUNOLOGY

New Delhi, 14-17, March 2012

Dear colleague,

Preparations for the 5th FIMSA International Congress of Immunology to be held in New Delhi, March 14-17, 2012 are in full swing. The theme of the Congress is ***"Translational Immunology in Asia-Oceania".*** The congress will be followed by a 3-day Advanced Course in Immunology from March 18-20, restricted to 75 students and young researchers, selected on merit through competition.

The congress will commence on March 14 in the evening with the inaugural function and Keynote address by Prof. Sir Gustav Nossal, University of Melbourne, Australia. The main congress will have 2 Master lectures each in the morning and evening to be delivered by high impact scientists on topics of translational importance. Further, the congress will have 3 theme based symposia each day, scheduled from 10.30 a.m. 1.00 p.m. and an equal number of workshops in the afternoons. The symposia will be addressed by eminent speakers (5 per symposium), while the workshops will provide opportunity to young Immunologists from the region whose abstracts will qualify for oral presentation. Hence there will be a total of 10 master lectures, 9 symposia and an equal number of workshops.

We already have an impressive list of speakers who have confirmed their participation in the congress. This includes Abul Abbas (USA), Rafi Ahmad (USA), Nina Bhardwaaj (USA), Xuetao Cao (China), Chella David (USA), Nirmal Ganguly (India), Sudhir Gupta (USA), Joshy Jacob (USA), Jorge Kalil (Brazil), Guna Karupiah (Australia), Stefan Kaufman (Germany), Sirini Kaveri (France), Nicholas King (Australia), Shigeo Koyasu (Japan), Vijay Kuchroo (USA), Nirbhay Kumar (USA), Kouji Matsushima (Japan), James McCluskey (Australia), Kamal Moudgil (USA), Kodi Ravichandran (USA), Reinhold Schmidt (Germany), Nilabh Shastri (USA), Hannes Stockinger (Austria), Yosuke Takahama (Japan), Pran Talwar (India), Gregory Tsay (Taiwan), Shinya Yamanaka (Japan), Moncef Zouali (France). In addition to this, there are several others who will be added after their confirmation is received.

The highlight of the congress will be a Round Table Session on March 15 entitled, ***"Gender Equality and Career opportunities in Immunology"***. This session is sponsored by the Career Development Committee of International Union of Immunological Societies (IUIS). Further, dedicated time has been allotted for the poster session over light snacks. There will be a number of poster and oral presentation awards for the young researchers by the organizing committee of the congress. We are happy to announce that the Annals of the New York Academy of Sciences has also confirmed a few poster and oral presentation awards. The Annals will also publish proceedings of the Congress.

We assure you that the FIMSA 2012 Congress will be a great scientific event in the area of Immunology. You are requested to visit the Congress Website **www.fimsa2012.com** regularly for ***early bird registration*** and information on **abstract submission.** Bursary awards for young scientists will be announced soon.

Looking forward to seeing you in Delhi next year.

With best regards,

Prof. Narinder K. Mehra
Congress President

Prof. D. Nageshwar Rao
Organizing Secretary

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INVITATION TO CORPORATE MEMBERS FOR CONTEMPORARY ARTICLES

The corporate members are invited to send articles on current and future trends in instrumentation and testing techniques in Laboratory Medicine for publication in News Bulletin. The articles can directly be sent to Editor-in-Chief, ACBI News Bulletin, Dr. Rajiv R. Sinha at : kpsacbi@yahoo.co.in.

CLINICAL CHEMISTRY TRAINEE COUNCIL: NOW IN INDIA

In May 2011, the journal *Clinical Chemistry* launched a new initiative entitled *Clinical Chemistry* Trainee Council. This program has just been made available in India. This initiative is an extension of the educational program of the journal that is meant to reach trainees in clinical chemistry and laboratory medicine throughout the world. The journal currently publishes a variety of educational materials including Clinical Case Studies, Q&A (a virtual roundtable discussion among a group of experts about a hot topic), and the Guide to Scientific Writing (a series of 14 articles). In addition, the journal periodically publishes interviews with world scientific leaders and articles about prominent clinical chemists (Inspiring Minds) that can be of great interest and serve as an inspiration to young scientists. Through the Council, the journal will make these materials available to trainees free of charge. The materials can be accessed via a special website that has been specifically designed for this purpose. The website will also enable the journal to provide the trainees with Webcasts (lectures by leading international scientists), Pearls of Laboratory Medicine (10-15 minute presentations about a laboratory test), and CouncilChat (a chat room directed by 6 junior faculty members from around the world). In addition, the trainees will have access to our more than 70 popular podcasts, which have been downloaded over 230,000 times in the last 2 years.

To access the website, please log on/go to www.traineecouncil.org.

The recently launched English version of this program targeted over 7,000 MD/PhD trainees and future leaders in clinical chemistry and laboratory medicine in 25 countries. In November of 2011, this initiative will be launched in Spanish during COLABIOCLI in the Dominican Republic and in 2012 in Russian, Arabic and Chinese. In the near future, we hope to produce a Portuguese version of the program.

TRAINING PROGRAMMES IN (1) BEST PRACTICE IN PHLEBOTOMY (2) PREANALYTICAL VARIABLES IN LABORATORY MEDICINE

by BD Diagnostics Preanalytical Systems and endorsed by ACBI

Several studies have indicated that nearly 68% of all errors in laboratory testing are associated with the preanalytical phase phlebotomy (blood collection) being a major component of this phase. The key preanalytical errors associated with phlebotomy include hemolysis, improper clotting, patient identification errors, transcriptional errors, insufficient volume to perform test, in adequate patient preparation, incorrect specimen collection time, overfilling/underfilling of specimen collection vials, contamination etc.

The primary reasons behind the magnitude of errors and unsafe practices associated with preanalytical phase are due to:

- Extremely poor preanalytical awareness.
- Lack of phlebotomy training schools in the country.
- Limited focus on phlebotomy as a discipline in medical technology and nursing schools with most of the learning being on-job.
- Lack of standardized phlebotomy guidelines as part of curricula in medical and para-medical institutions across the country.

BD Diagnostics Preanalytical Systems in India has been committed to improving phlebotomy practices across the country thereby contributing to improved patient care, healthcare worker safety, and hospital productivity. During the last ten years, BD in India has put tremendous efforts towards increasing the awareness of laboratory personnel in better and safer blood collection practices. We have reached out to several professional bodies to highlight the need for improvement in this area. We have supported various studies to demonstrate that laboratory errors can be easily reduced by using better practices. Every year BD India conducts more than 200 training programs for healthcare workers, training close to 2000 healthcare workers in a year on best practices in blood

collection. All these programs are provided free of charge to the participants.

In addition to the above, for the last five years we have also been involved in annual 'GOOD CLINICAL LABORATORY PRACTICES' training program that you have been conducting every year. BD participates in the program through a half day session on 'BEST PRACTICES IN PHLEBOTOMY' and 'BEST PRACTICES IN PREANALYTICAL PRACTICES' and hands-on training on phlebotomy practice using training arm. We believe that the participants in this program get an opportunity to learn better practices, which otherwise have not been available to them in their respective training courses.

A. ABOUT THE COURSE*

Course Delivery Outline

The course is delivered through 4-5 hour sessions consisting of classroom lecture and practical sessions.

Participants for the Course

Laboratory / Nursing staff, Staff with Quality responsibilities, Laboratory Managers etc. Five local ACBI members will be admitted in the course free of charge.

Topics Covered in the Course

1. Blood collection equipment
2. Safe blood collection using venous and capillary collection methods.
3. Preanalytical errors, why they occur and how to prevent them
4. Practical session : hands-on practice using training tools.

* The date and place of the proposed training programme will be displayed on the Association website (www.acbindia.org) on a monthly basis.

CONFERENCE HOST CITY

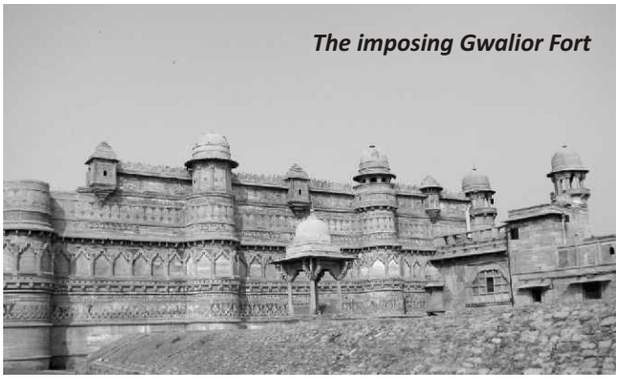
GWALIOR

Gwalior, the formerly princely state of Madhya Pradesh, is famed for its outstanding palaces, sacred temples and glorious monuments. Gwalior is justly famous for at least three things: its imposing fort, Mian Tansen, and the first epigraphic evidence of zero. According to legend, Gwalior began from a meeting between Suraj Sen and the hermit Gwalipa, who lived on the hilltop where the fort stands. A cradle of great dynasties, this fabulous city was in existence over the centuries sice 8th century AD.

The magnificent Gwalior fort overlooks the entire city and gives an enthralling look to the scenic ambiance of the town. Many spectacular monuments of the yester-years, provides an exceptional charm to the city. Gwalior was also the birthplace of the great musician Tansen. A Tansen Sangeet Sammelan is held every year to com-memorate his memory.

A sprawling city where tradition is entwined with modernity, Gwalior presents a enthralling and a beguiling appeal to the tourists. The most prominent among them is the Gwalior Fort. Built in the 15th century on a hilltop by Raja Mansingh Tomar, it gives a breathtaking view of the city. *Man Mandir* is a major attraction of the fort. It is also known as *Chitra Mandir* or Palace of Paintings. *Gujari Mahal* within the fort is has now converted onto a museum is known for its collection of Jain and Hindu artifacts. The Fort is also known for many *temples* and *chhatris* (memorials built to commemorate the former Scindia rulers) in its precincts. The *Sas-Bahu Temple* and *Teli-ka Mandir* within the fort are beautiful architectural examples.

Other tourist attractions in Gwalior are the *Surya Mandir*; a replica of the famous Sun Temple in Orissa. Another must see museum is the Scindia Museum.



The imposing Gwalior Fort

ACBI QC Forum

Proceedings of 'Lunch with the Experts'

(A special event conducted during the 37th ACBICON, Mumbai, December 2010)

Dr. A.S. Kanagasabapathy (askanag@gmail.com • Mobile No: 09704335533)
Dr. Sucheta Dandekar (sucheta.dandekar@gmail.com • Mobile No: 09821076406)

During the 37th ACBICON at Mumbai in December 2010 Dr. Sucheta Dandekar organized an exciting event **Lunch with the Expert** on all the three days of the conference with the objective of providing the opportunity to the delegates to freely and effectively interact with the invited specialists on specific subjects during the lunch time. About 25-35 delegates actively participated in the deliberations each day. Summary of the proceedings of the first day event (December 13, 2010) was published in the last issue of ACBI Newsletter. In the current issue, we are pleased to provide a summary of the proceedings of the second day event (December 14, 2010), covering the topics on Avoiding laboratory errors, POCT and Quality Assurance.

INVITED EXPERTS

Dr. DONALD S. YOUNG (Past-President of both the American Association for Clinical Chemistry - AACC) and IFCC and a past-Chairman of the Board of Editors of Clinical Chemistry. Author or co-author of the series of books on the Effects of Drugs, Diseases, Herbs and Pre-analytical Variables on Clinical Laboratory Tests).

Dr. JOCELYN M. HICKS (Past President of IFCC and AACC. Founder and Past President of the International Association of Pediatric Laboratory Medicine).

Dr. GHASSAN SHANNAN (IFCC treasurer and President of the Syrian Clinical Laboratory Association of Pathology & Lab Medicine)

Views expressed in this forum are individual views of the experts. ACBI does not assume any responsibility of the views expressed.

Dr. R. SELVAKUMAR : Good Afternoon friends, we have circulated the questions that have been asked by various people, I would request Dr.Young to answer the questions regarding **avoiding laboratory errors**.

QUESTION: *Should identification of lab errors be a collective team effort or should the responsibility lay with the team leader or designated person? How can these errors be minimised ?*

Answer: Dr. Young :

I think the big issue is to identify errors and problems in first phase and what we need to do, is to ***become friends with the clinicians***, so that they are going to share their concerns and problems with you and you should attempt to sort out the issues in a ***friendly way rather than in an accusatory way.*** So, what you need to do is to have physicians taken to a level that if they feel some discomfort with the test results, they will call the lab director and it is fair for them to say that a large number of test results (for instance all calcium) might seem to be low; that is the time when you should really worry, which probably means the values are really low. There is nothing like physician's experience of having seen a lot of similar results to recognize that the mean has shifted from what it used to be. So, I think the first move is to try to get the physicians to openly discuss with you. I think within the laboratory it has to be very much a **team approach**, so no single person could be assigned responsibility of finding problems, but **it should be a collective issue.** So it is a team effort; you really need to have somebody to review all the data every day not to try and look at whether this number makes sense, but just to see if there are more abnormal or fewer abnormal results than usual, because that will give you again a signal that something is wrong. The largest proportion of errors that take place are really in the pre-analytical stage and the next high proportion of errors are in the post-analytical stage. Testing with the help of the products that are now manufactured at a very high level it is less likely that a problem is truly related to the analytical site of the whole testing process. So it is worthwhile to have somebody to do a quick review of all the results coming out of the machine. If you have a computer system that is sufficiently sophisticated you can do what is called ***auto verification*** where the same patient's today's result can be compared with yesterday's result and the computer can say this is an acceptable result based on the physiological changes recognized in a patient who is likely to have a

disease, or and so then it can block that particular result from getting reported.

I don't think that any of the auto verification systems are sufficiently sophisticated to look at today's urea and creatinine measurements and compare with yesterday's urea and creatinine measurements. You do have a large variations and ratio of urea to creatinine.

You know the areas which are likely to be producing more errors like the ICUs where people are particularly busy and have got a whole lot of things to do. And when people are busy they are less likely to do their job well than when they are under less pressure. And the other areas where the people are under pressure are the emergency room and in the labor and delivery rooms. These are the areas where there are likely to be errors, these are the areas where you need to monitor what is going on.

Question: Dr. Selvakumar

*Well, you were talking about this auto verification that is you were talking about the **delta check**, isn't it?*

Dr. Young: Yes, basically it is the delta check.

Dr. Selvakumar: *Most of the modern analysers do the delta check if you want to, but then you are saying most of the modern software are not good enough to say that yesterday's urea and creatinine are good enough to compare with today's urea and creatinine. With reference to a transplant patient, transplant surgeons get worked up if there is an increase of creatinine by 0.2mg/dL, (This is followed as the rule of thumb). So isn't it something that you setup rather than software automatically by default does it?*

Dr. Young: I think most manufacturers with any system they have, whether it is an instrument or a computer, offer a simple comparison of today's urea versus yesterday's urea. What would be more sophisticated is to have all measures of renal function being cross checked just as with Liver Function Tests. The AST probably should not be changing if the ALT is not changing. You probably are doing a better job when you are comparing analytes against itself in different occasions.

Dr Hicks: Can I just ask you a clarification related to the question you just asked?

When you set a value, for example a set point of creatinine, how well do you integrate the coefficient of variation of the method into that? Because, you have to be very careful not to test again, if it is only on the edge of the coefficient of variation unless you have got a trend in the pitfall for more than one day.

Dr. Selvakumar: *Yes, actually if you take creatinine, the methodology itself is subject to 0.2mg/dL imprecision. So, basically 0.2mg/dL increase really does not mean anything, but then from the transplant surgeon's point of view even if there is an increase of 0.2mg/dL he immediately gets alarmed.*

Dr. Hicks: We suggest the nephrologists to send a repeat sample, and if there is further increase then suggest proceeding as required. Now a days most instruments report to a 2nd decimal, so that gives you a greater ability to look at level changes as compared to a single decimal point.

Dr. Shannan: There is always a problem with the reference range we use and whether it is clinically effective. Take potassium for instance, when we say 3.5mmol/L as the lower limit and we have a patient with 3.4 for us as a laboratory it is not much of a difference. But for the clinician it means something. So we have to educate them our limits/where our limits can be, because it can be critical sometimes. For example, potassium on a particular day was 2.5mmol/L and if it is 3.0 the next day, then the clinician feels somewhat happy. However, if the value drops to 2.8 or 2.9mmol/L, the clinician gets worried. For us as a laboratory it is not significant, but for the clinician it is crucial.

Dr. Selvakumar: *Any other questions from audience?*

Question from the audience: You said that some of the errors may have their origin from the pre-analytical process. Which of the pre-analytical process do you think are more prone to errors?

Dr. Young: Certainly the most dangerous one is the **misidentification of the patient.** You should have in place a requirement that the information on the request form matches exactly the information on the tube to which you transfer the blood. You should also have a requirement that **there should be two identifications of the patient**, firstly the first name and the last name, and secondly a number either a hospital number or a government identification number. The date of birth is again something that doesn't change. But you should never use the location or address of a patient, because patients might move from one ward to another or change address.

So I think the most dangerous one is misidentification of the patient. Then you have the issues of **hemolysis** and the change of analyte concentrations, particularly for the hormones where there is a typical **diurnal variation**. You need to be able to **record the date and time specimen collection.** You should monitor the time from the time the specimen was collected to the time it is received in the laboratory. This is important because for many specimens the level will start deteriorating once it is collected and for analytes like prothrombin time and PTT, you want to make sure it is done within 2hrs of sample collection. For urine analysis, you want to make sure it is done within 2 hrs of

collection, because the specimen begins to deteriorate. Urine is typically hypotonic, so it is going to lyse, whatever cells there were, so the number of cells is going to appear different.

What you need to look at is when you have an error what is the **typical error**? And you put most of your effort trying to correct the most typical errors. And then you progress; once you have the major error corrected you then go out to the next important one. Or you also look at where are the errors taking place and put in your effort here to clear the errors.

There was a well known thief, who was asked why does he always rob the bank? And he answered appropriately "That's where the money is". It is therefore most important to know where to put our effort. It is going to be frustrating, for instance, emergency department staff often will have hemolysed specimens and you can work and work trying to train them to do the things right, but in the spur of the moment, you should remember, they are always busy and there are lots of things going on; even the best performer is going to cause a hemolysed specimen occasionally. So the whole philosophy is to put your effort where you are likely to have the biggest "returns" and getting a change.

If you look at the frequency of the errors, by far the **most common one is hemolysed specimen and fairly lesser is using the wrong tube.** You do have issues for not mixing the specimen adequately for hematology or doing it too vigorously for biochemistry in causing lysis of cells. Again the most common of errors is hemolysis but certainly the most dangerous one is misidentification of the patient. But for physicians, when there really should be low potassium, but because of hemolysis, seems to be normal potassium, that's the kind of error which is very difficult to catch.

Dr. Hicks: I would like to add a point to this. I worked in a children's hospital, where a lot of children are on intravenous feeding or intravenous blood transfusions and **withdrawing blood from the wrong site is a very dangerous error**. It may not be as frequent in huge operations as in Dr. Young's hospital. Once a sample is drawn from incorrect site and the physician is saying "this result cannot be right", the first question you ask is probably "look into the IV".

Question from the Audience: *How does hemolysis affect hormone measurements? You measure hormones using chemi-luminescence methods, so how does hemolysis affect hormone analysis?*

Dr. Young: I can't give you a specific answer, but I think it is inappropriate to use hemolysed sample for anything unless they are irreplaceable specimens and so we have policies which say you will do certain tests on specimens for which you feel you really want to get the right specimen under certain rigidly defined conditions normally. I think in most cases you don't test hemolysed specimens.

Question from the Audience: *But if you are in a situation where you should do the test, you cover yourself by adding the comment that "the specimen was hemolysed, therefore the results should be interpreted appropriately".*

Dr. Young: Yes, you certainly should, but the comment is likely to be ignored and the physician would read the number.

Question from the Audience: *Is there any interference caused by lipemic sample and the icteric sample on the chemiluminscent assays?*

Dr. Young: I think lipemic samples are inappropriate ones. But it doesn't really matter handling icteric ones, because you are not going to have the icterus going away and unless it is interfering with a particular wavelength it is not going to be causing an issue and most of the hormone assays are not going to be affected.

Question from the Audience: *Is it possible for IFCC to come out with a small booklet consolidating pre-analytical, analytical and post analytical errors? As a society ACBI can purchase this booklet, make copies and distribute to our members and physicians. We need to design a small booklet for the convenience of users.*

Dr. Hicks: This is a good question. Both Dr. Young and I have discussed quite aggressively that these types of special lectures should be available on the web. So there will be no issue in providing the information to the people.

Suggestion from the audience: I strongly feel that the guidelines for accreditation should include the point that every physician should know these pre analytical, analytical and post analytical errors. It should be a part of the accreditation policy for a hospital.

Comment from audience: I do agree with this view because in India there are a lot of physicians who do the sample collection at their end. Pre-analytical errors are very common such as mixing up of the samples and the way how they draw the samples. These things really matter as these would lead to medico legal cases.

Dr. Shannan: It is not only in India, it happens all over the world. The incidence is up to 60% of the errors in the lab are coming from the pre analytical part. So it is probably mixing up of the samples, using wrong anticoagulant, wrong concentration of the anticoagulant, hemolysed specimen, wrong temperature, standing for more than 2 3 hrs after collection, etc. The laboratory should establish a

proper quality system to solve these problems. The laboratory must use appropriate indicators to find out if the personnel are following the procedures properly. You should regularly monitor this through analysis of quality indicators. You have to make sure you are using the right color and right tube with the right anti-coagulant. We should always tell the technician not to ask the patient "are you Mr. XYZ?", but ask "what is your name?". Because, probably the patient is generally frightened and just nods his head. These are small things but really do create problems. If a lab has a coding system then it is perfect!

Question from the Audience: *You have suggested that we should process the samples within 2 hrs, but in govt. institutions we face problems with facilities. We have collection centers in the peripheries and the samples are transferred from peripheries to the central laboratory (sometimes transported in syringes). How should we get control over these procedures?*

Dr. Young: I think the transport system has to be preferably done by an external company. You have to set rules for them, that the samples have to be collected and delivered to your laboratory within a specified time and if not you will no longer use the services of that company. I don't think it is really appropriate for the hospital to own the transport system, that way the hospital becomes responsible if the drivers are sick or on leave. So you want somebody else to shoulder all the responsibilities but they all have to be trained to meet your standards.

Dr. Selvakumar: Actually you must have your **Sample Rejection Criteria**. If the sample is not delivered within the specified time as per the standards, you should not accept the sample. Initially there may be agitation, but once you establish that these are your rejection criteria, people will fall in line, but of course with government institutions it will be difficult.

Suggestion from the audience (1): In fact, the lab has to mention this as an important accreditation criterion in the Quality Manual. Test Report should specify the sample collection time and test reporting time to enable the physician to get to know the turn around time.

Suggestion from the audience (2): Sir, can I give you a suggestion? If the basic technician at the periphery centrifuges the sample and sends the plasma or serum as required in temperature controlled conditions (ice pack / ice box), then it is a win-win situation for all the patient does not suffer and the sample does not get deteriorated, etc..

Suggestion from the audience (3): Some hospitals or laboratories have gone ahead and taken the responsibility of sending a phlebotomist and collecting the blood samples directly from the patient in the hospital and transporting the same in the proper or required manner. This avoids the pre-analytical errors to a great extent and the responsibility lies with the central laboratory.

Dr. Young: I agree. This is good.

Comment from the audience (1): That would require more man-power; instead we can train the paramedical staff in the hospitals to do the same.

Comment from the audience (2): If the lab and the hospitals are in the same place then it does not matter much but if they are far away from each other then it becomes a problem.

Dr. Shannan: It does not matter who does all this. But if you have a good system that is what you call accreditation system—you will never have these mistakes. If we are now trying to solve the problems piece by piece, you can't solve easily. You cannot really have a piece here and a piece there you solve it here and you discover another one there. So you have to have a complete system in place and then you can really say "OK, we are sure about our results."

Point of Care Testing (POCT)

Question: *How is quality control maintained in point of care testing? From your perspective what are the critical success factors from point of care?*

Are there any particular areas where you believe that the routine lab test is better done with point of care device?

Dr. Hicks: I think it is critical for anything to do with point of care testing and actually by most accreditation standards all laboratory testing must be under the control of the lab directors, including point of care testing. If you are going to have a point of care testing, you must have a **point of care testing coordinator** who is a laboratory staff member. Depending upon the size of the point of care testing program, the coordinator can either be somebody who has more than one job in the laboratory or made exclusively responsible for POCT as a full time job. That person will be responsible for reviewing the QC results daily. Some of the point of care devices have an electronic QC built into them, but even so you should be running some sort of external proficiency testing, and checking out at least once daily the point of care QC results. If you move towards accreditation, many of these things are laid out for you, what you should do and what not. **The critical factor for success for the point of care (POC) program is the POC coordinator.** There must be excellent training whoever does the POC testing. In the US it is usually nurses. When I first set up a POC program, which was one of the first in the US and certainly the first in Jones hospital, the nurses said "we don't have the time, we don't want to do it", etc. Later they ended up saying this is wonderful, because they can get the answer to the doctor quickly, do

not have to keep going into the computer to see if the lab has the results and do not have to keep calling them; it is actually saving their time.

During our first accreditation exercise after we set up our POC, I was thrilled because the head nurse came to me and said "is there anything I can do to help this accreditation go smoothly?" I talked to her about silly things like walk in to make sure the specimens/reagents are not outdated etc., She was wonderful. She helped us get full marks on our POC testing. **So you have to get friendly with these people.** The training there has to be followed up every 6 months, some accreditation programs say a year. The issue here is the problems get worse with bigger the hospital because you have to train several nurses. I was talking to Dr Young about this; His hospital trains nearly 3000 nurses a year. In a smaller children's hospital it was 500 nurses and it was a bit more manageable. So you can see why you need a POC coordinator because the responsibility is always with the laboratory. You must have a written record of who were trained, when they were trained and by whom they were trained.

Question: *Should the staff operating POC equipment have a training certificate that they are competent to operate this?*

Dr. Hicks: If you want to give a certificate, if it makes the nurse feel better, do it, but **it is not the certificate—it is the action.**

Question from the Audience: *How do you decide what POC test to do?*

Dr. Hicks: In general the answer to that is where the results can be provided quicker for physician's action where that is necessary, where speed is necessary is your best answer.

Question: *Since the technology of the POCT device differs from the main laboratory analyzer and the sample is whole blood instead of plasma, can we hormonise values using a factor as suggested in some recent publications?*

Dr. Hicks: Results can be related to mainframe analyzers. It is difficult with glucose because you are dealing with whole blood when you are doing POC and you are dealing with plasma when you are working in the central laboratory. You generally have to do a comparison on working with what we might call "conversion factor" or at least you know what the difference is. It is not going to be such a huge difference to misdiagnose.

Question: *Are there other tests better done in the main laboratory?*

Dr. Hicks: I would say that INR, PT, PTT in the POC equipment have not been shown to be as good as or as precise as done on the main laboratory equipment. I think the scenario will change because the demand is huge. With congestive heart failure where the patient can do the testing at home, the equipment has to be more reliable.

Question: *What is the difference in the quality of POC testing by the nurses Vs Central laboratory technicians?*

Dr. Hicks: I mean in general, technicians are going to give better results because they are trained in it and it's our responsibility to train the nurses to do well.

Question: *POCT has taken the lab into the hands of the patient for monitoring, but in my place the patients are not trained to use the glucometer and get unreliable results. What is the role of POC in the Indian context?*

Dr. Hicks: It is absolutely essential that the patients / parents are educated on how to do the testing. You can't just give someone the instrument and tell "read the instructions, go home and use it". It is actually unethical. You have to spend the time to educate them. In the US every endocrine area has a diabetes educator. Actually, we even raise money to make sure there is a diabetes educator on the weekends as well, so that a parent won't come in with a child critically ill on a Friday and will have to wait till Monday afternoon to learn how to help their child with the instrument. You cannot put testing in any event in the hands of the public to take home an instrument.

Question: *Should the central laboratory be responsible for servicing or maintaining the machines?*

Dr. Hicks: The POC coordinator has to work with the nursing staff on that and also on what machine should be used. The lab has the responsibility to make sure that the machines work and also make sure that they are easy for the nursing staff to use.

Question: *Is it necessary for the ward / ICU always to make a written record of POCT values in the patient chart and should it be accompanied by a signature?*

Dr. Hicks: Absolutely! The record should be maintained in the computer or a manual register and it should be accompanied by a signature. The records should consist of patient's results and QC data.

Question from the Audience: *When a QC is being done, is it the responsibility of the central laboratory or the POCT section?*

Dr. Hicks: It is the responsibility of the central laboratory. The POCT coordinator from the central laboratory should review the QC data on a daily basis and ensure that the performance is good with patient sample testing.

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Quality Assurance

Brief note from **Dr. A.S. Knagasabapathy**

Quality Management : All activities of the overall management function that determine quality policy

objectives, implement them by means such as quality planning, quality control, quality assurance, and quality improvement within the system (NCCLS)

Quality System : Organizational structure, resources, processes and procedures needed to implement quality management (ISO, NCCLS).

Quality Assurance (QA) : All planned or systematic actions necessary to provide adequate confidence that a service or product will satisfy given requirements for quality. QA is the comprehensive term that refers to all aspects of operation starting from preparation of the patient to sample collection, sample analysis, recording of the result and its dispatch. Laboratory QA includes the following three phases:

- Pre-analytical
- Analytical (Internal Quality Control IQC & External Quality Assessment EQA)
- Post analytical

Quality Control (QC) : QC is the study of those errors, which are the responsibility of the laboratory, and of the procedures used to recognize and minimize them, including all errors, which arise within the laboratory between the receipt of the specimen and dispatch of the report.

The watchword for reliability: Accuracy and Precision

Accuracy : Closeness of agreement between true value and the mean of measurement results obtained over large number of observations. This can be quantitatively expressed as **Bias.**

$$\text{Bias} = \frac{\text{Observed value} - \text{True value}}{\text{True value}} \times 100$$

Good accuracy means minimum Bias.

Precision : Closeness with each other of the large number of observations in measurement process, under prescribed conditions. This can be quantitatively expressed as percentage of coefficient of variation (% CV). Good precision means minimum % CV.

Repeatability (Within Run) : Closeness of the agreement between the successive measurements of the same sample and with the following conditions:

- The same measurement procedure
- The same analyst
- The same measurement systems used under the same conditions
- The same location

Repeatability (Between Run) : Closeness of the agreement between the results of successive measurements of the same sample and with the following conditions:

- The same measurement procedure
- Different analysts
- Different measuring systems
- Different locations and at different times

Analytical measurement range, AMR : Defined by the College of American Pathologists (CAP) as the range of numeric results a method can produce without any special specimen pre-treatment, such as dilution, that is not part of the usual analytic process. (**Same as reportable range)**

Clinical reportable range, CRR : Defined by the CAP as the lowest and highest numeric results that can be reported after accounting for any specimen dilution or concentration that is used to extend the analytical measurement range.

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Question: *What are the components of quality management?*

Dr. Shannan : These are Qualiy Control, Quality Assurance, Quality System & Quality Management. These are essential ingredients towards achieving accreditation and hence the laboratory must comply with all these components.

Analytical Measurement Range (AMR) is defined as the range of analyte values that a method can directly measure without any dilution. To verify this you can run a sample and see if it is within the acceptable measurement range of the assays. You have to run the low, middle and high level samples to assess the linearity of the system you are using.

Unless we have stringent standards we cannot maintain good quality of measurement. That is why in our country we have standards like FDA, CE, etc. We have to be very critical in not buying materials that are cheap in quality.

Question: *We find triglycerides spiked QC sera fairly turbid. Should such sera be rejected for QC analysis?*

Dr. Shannan: Whenever you handle turbid patient samples or QC sera, you can conveniently use an appropriate blank or a clearing agent.

Question: *How many labs should be included in analysing data obtained for a parameter from interlab comparisons?*

Dr. Shannan: It will be ideal to involve a large number of labs for this purpose, since statistical evaluation of very few labs will be unreliable.

Dr. Hicks: It is most essential for the laboratory to monitor all aspects of quality assurance. One important aspect is to monitor turn around time (TAT). I will be happy to quote one of the recent surveys conducted in our hospital to identify problems towards reducing TAT. For this purpose, several aspects were meticulously looked

into from beginning to end in the entire laboratory operation. We found out enormous delay in getting samples between 11 am and 2 pm and identified the problem as non-availability of adequate number of nurses / phlebotomists during this period for drawing blood as too many were going out for lunch at the same time. This is just to emphasize the point that all aspects of QA should be thoroughly investigated to improve lab performance.

Dr. Hicks: I would like to talk about the practice in IFCC which will be helpful to you. It is about a program applicable for those laboratories which are not accredited. This is a program which has been aimed at persons less than 40 years, to go to accredited laboratories for undergoing proper training on various accreditation activities. Towards this IFCC will pay the airfare and reasonable stay allowance. For instance, lab personnel from Nigeria were sponsored to undergo this training program in one of the very good accredited labs in South Africa. After the training they were encouraged to incorporate all the important aspects of the training into their laboratories.

You can find out more information on such training programs from the IFCC website.

IDENTIFY CARDS FOR ACBI MEMBERS

Photo Identity card of ACBI is mandatory for members to attend the Annual Conferences, all meetings and also for exercising their voting rights. All Life, Associate Life and Corporate members are requested to fill up the Identity Card Application Form and send it to the Head Office address along with a **Demand Draft of ₹ 100.00, in favour of "Association of Clinical Biochemists of India" payable at "PATNA".** If you have already sent the same, please ignore this.

The ACBI Identity Card Form can be downloaded from www.acbindia.org.

Notice for ACBI Meetings of 2011

Attention Please! Members of ACBI & ACBI Executive Committee

Please note the dates, timings and Venue of the next EC & GB meetings

Meeting	Date & Time	Venue
Editorial Board of IJCB Meting & other sub-committees meetings	Saturday December 03, 2011 5.00 to 6.00 pm	B.S. Auditorium G.R. Medical College, Gwalior
Pre GB EC meeting	Saturday December 03, 2011 6.00 to 8.00 pm	
General Body Meeting	Monday December 05, 2011 5.00 to 6.30 pm	Conference Hall, ICM Universe Gwalior
Post GB EC meeting	Tuesday December 06, 2011 8.30 to 9.30 am (With Breakfast)	ICM Universe Gwalior

Dr. Rajiv R Sinha, General Secretary, ACBI

ACBI Election Notice

Call for Nominations to fill up vacancies in Executive Council of ACBI, 2012

Position	Number of Vacancies	Position	Number of Vacancies
1. Vice President	One	2. Joint Secretary (Headquarters)	One
3. Executive Council Members	Six	4. State Representatives	All the States

Duly filled nominations for the above posts are invited from the eligible members duly proposed and seconded by the Members of the Association. Nominations may please be submitted in the format given below to :

Dr. Sucheta P. Dandekar
PRESIDENT, ASSOCIATION OF CLINICAL BIOCHEMISTS OF INDIA
Professor & Head, Department of Biochemistry
Seth G. S. Medical College & KEM Hospital, Parel, Mumbai - 400 012 (Maharashtra)

The Last date for receiving the Nominations: November 3rd, 2011
The Last date for withdrawal of Nominations: November 15th, 2011

Dr. Rajiv R. Sinha
General Secretary, ACBI

NOTE: REQUIRED QUALIFICATIONS FOR VARIOUS POSTS

Secretary, Vice President-II : A candidate for these posts should be a life member of at least 8 years standing and have been regularly attending Annual Conferences of the Association. He/ She should be holding a senior post in his/her work place. He / she has shown aptitude for working for the association by taking up some responsibilities of the Association in the past.

Joint Secretaries and Treasurer should be a Life member of at least 5 years duration and should have attended at least 3 Annual Conferences in the last 4 years.

Six Elected Council Members: should be a Life Member and who have attended at least 2 conferences in the last 4 years.

State Representative should be a life member who has attended conferences regularly in the last 5 years and is fairly active in Association activities.

Format of the Nomination Form for Positions in Executive Council

I. . . . . propose the name of Prof./Dr./Mr./Ms. . . . . .
. . . . . bearing Membership No. . . . . for the post of . . . . . .

PLACE : . . . . . SIGNATURE: . . . . . .

DATE: . . . . . MEMBERSHIP NUMBER: . . . . . .

I, ... second the proposal.

PLACE : . . . . . SIGNATURE: . . . . . .

DATE: . . . . . MEMBERSHIP NUMBER: . . . . . .

I, ... accord my consent to the proposal.

PLACE : . . . . . SIGNATURE: . . . . . .

DATE: . . . . . MEMBERSHIP NUMBER: . . . . . .

ACBI BENEVOLENT FUND : AN APPEAL

The Executive Council and General Body were concerned to know the fact that one of our very senior members is suffering due to lack of money for his treatment and upkeep. For such situation many organizations have created 'Benevolent' fund to assist their members in dire need. We should also have compassion when any of our members are in need of financial help. Therefore the G.B. has decided to create a Fund to help our needy members and has sanctioned ₹ 50,000 from ACBI account for this fund. The IJCB Board has also decided to contribute ₹ 25,000. Many members have agreed to send money for the fund. Dr. B.C. Harinath has contributed ₹ 17,000 which includes the money he got as recipient of ACBI-A.J. Thakur award for Distinguished Clinical Biochemist. Some members have sent ₹ 1,000 / 2,000 /3,000 as their contribution.

I solicit your support and request you to send money for this noble work as much as you like. The money be sent to the TREASURER, ASSOCIATION OF CLINICAL BIOCHEMISTS OF INDIA, BIOCHEM-LAB, EAST BORING CANAL ROAD, PATNA - 800001 by bank draft in the name of "ACBI BENEVOLENT FUND" payable at Patna. It is proposed to publish the names of members who contribute to this fund in News Bulletin.

Dr. S.P. Dandekar, President

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LIST OF DONORS TO ACBI-BENEVOLENT FUND : AS ON 15.09.2011

1. ACBI	₹ 50,000.00	8. Dr. Anand Saran, Patna	₹ 1,000.00
2. Dr. B.C. Harinath, Prof. & Director, JBTDR Centre, Wardha	₹ 16,000.00	9. Anonymous Donor, Mumbai	₹ 5,000.00
3. Dr. S.P. Dandekar, Prof. & Head, Department of Biochemistry, Seth G.S. Medical College, Mumbai	₹ 1,000.00	10. Dr. Rajiv R Sinha, Patna	₹ 1,000.00
4. Dr. Sujata W., Biochemistry Deptt., PGI, Chandigarh	₹ 1,000.00	11. Dr. Harbans Lal, Rohtak	₹ 2,000.00
5. Dr. K. P. Sinha, Retd. Professor of Biochemistry, P.M.C.H. & Advisor	₹ 1,000.00	12. Dr. S.J. Makhija	₹ 1,000.00
6. Dr. B.N. Tiwary, Patna	₹ 1,000.00	13. Dr. T.F. Ashavaid, Mumbai	₹ 3,000.00
7. Dr. Uday Kumar, Patna	₹ 1,000.00	14. Dr. T. Malati, Hyderbad	₹ 1,000.00
		15. Dr. R. Arivazhagan, Chennai	₹ 1,000.00
		16. Dr. Praveen Sharma, Jaipur	₹ 4,000.00
		17. Dr. K.L. Mahadevappa, Bangalore	₹ 1,000.00

Branch Reports

Report from Delhi Branch

Delhi State branch of ACBI organized the 2nd Y. Subbarow Oration which was delivered by Honorable Padma Bhushan Dr. P.M. Bhargava on 10th February 2011. The function was organized at Vallabhbhai Patel Chest Institute. A large number of delegates attended this prestigious meet . The hall was jam packed and every body enjoyed the scientific feast and other arrangements.

Report from Bihar Branch

Bihar Branch of ACBI organized a 1 day BIHAR ACBICON 2011 on the 1st May 2011. It was a Workshop (Professional Course) on ACID-BASE BALANCE. The session was inaugurated by Dr. Girdhar J. Gyani, Secretary-General, Quality Council of India. The workshop attracted not only Biochemists & Pathologists from all over the state but, also had many Physicians, especially those in the field of critical care Medicine. The workshop started with Dr D. M. Vasudevan, Past President, ACBI & Distinguished Professor of Biochemistry, Amrita Institute of Medical Sciences, Kochi, taking us through "ACID BASE BALANCE INTRODUCTION". The second speaker was Dr Kannan Vaidyanathan, I/c Clinical Biochemistry Lab, Amrita Institute of Medical Sciences, Kochi who spoke on "ABG Instrumentation". The 3rd. session was on the topic - :"QA of Blood Gas Analysis" and Dr. A.S. Kanagasabapathy, Formerly, Professor & Head, Department of Clinical Biochemistry, CMC, Vellore, took the audiences thru the total gamut of how to maintain the quality of the ABG report. After a sumptuous lunch, we had the last speaker, Dr. N. P. Verma, Consultant Physician, ICU I/c, Sahyog Hospital, Patna & Secretary, Critical Care Society of India (Bihar Branch). Dr Verma's talk was on "ACID-BASE from a Clinicians Perspective"

Call to Senior Members

ACBI is in the process of starting the course on **Diplomate of Indian Board of Clinical Chemistry (DIBCC)** under the guidance of Association of Clinical Biochemists of India (ACBI).

The aim of the course is to impart training to graduates, to render them proficient to:

(a) perform the medical biochemical techniques

(b) interpret the results of various tests and to interpret the clinical significance of biochemical lab test results

(c) supervise the medical biochemistry laboratories

(d) Identify biochemical diagnostic agents or tests useful in diagnosis and monitoring response to therapy.

The total course is divided into 30 topics and 6 modules. It is time for us to prepare the teaching matter for this course. I call upon faculty of Biochemistry preferably working in clinical biochemistry lab in medical colleges or in specialized laboratories. Those who are interested in this important aspect, may send their names to the Dr. D.M. Vasudevan at dmvasudevan@yahoo.co.in.

Full syllabus is available on the ACBI website (www.acbindia.org)

IMPORTANT NOTICE

UPDATION OF ADDRESS

All members are requested to view ACBI website (www.acbindia.org) to check their name and address in Directory of members. If your name does not appear in the Directory, or there is error or discrepancy, please draw our attention immediately either by e-mail (kpsacbi@yahoo.co.in) or by post to Dr. Rajiv Ranjan Sinha, Secretary, ACBI, Biochem-Lab, East Boring Canal Road, Patna - 800001

ACBI MEMBERSHIP ADMISSIBILITY RULES

ELIGIBILITY CRITERIA : Membership of the Association is open to teachers & research scientists in the discipline of Biochemistry, Clinical Biochemistry, Immunology, Pathology, Endocrinology, Nutrition, Medicine and other allied subjects in a medical institution and also to persons holding M.B.B.S., M.Sc.(Biochemistry or Clinical Biochemistry) and are engaged in research or practice of clinical Biochemistry in hospital or in private laboratory.

ASSOCIATE MEMBERSHIP : Those graduates who do not fit in the above criteria, but have an interest in Clinical Biochemistry are eligible to become Associate Members.

CORPORATE MEMBERSHIP : A company dealing in biochemical and instruments for biochemistry laboratories can become corporate members.

SESSIONAL MEMBERSHIP : Those persons who are not members but want to attend ACBI National Conference and attend and/or present papers have to become Sessional Member. This membership will be valid for that conference only. If he/she fulfils all eligibility criteria for membership and again pays the next years Annual membership fees, they will be admitted as Annual Member of ACBI.

MEMBERSHIP FEE : (a) Annual Member: ₹ 600.00 annually, **(b) Life Member**: ₹ 5130.00 (₹ 5000.00- once + ₹ 30.00 for L.M. Certificate posting + ₹ 100.00 for Identity Card (or ₹ 1800.00 annually for 3 consecutive years.) **(c)** For persons residing in other countries: US $200.00 **(d) Associate Life Members**: ₹ 5130.00 (₹ 5000.00 once + ₹ 30.00 for L.M. Certificate posting + ₹ 100.00 for Identity Card, **(e) Corporate Member**: ₹ 25,000.00 one time payment. **(f) Sessional Member**: ₹ 600.00 **(g) IFCC subscription** (optional): ₹ 1500.00 once. [LIFE MEMBERS please note : For Hard copy of Journal: ₹ 200.00 per year for postage (or ₹ 1,000.00 for 6 years). Money to be sent to Editor, IJCB (at Jaipur). **The Membership Application form can be downloaded from www.acbindia.org.**

For Web viewing, please send your email id to editor. For more information log on at **www.ijcb.co.in**

Prescribed fee should be paid by **Bank Draft** only payable to **"Association of Clinical Biochemists of India"** at **Patna. NO CHEQUE PLEASE.** The completed application (along with enclosures) & draft should be sent to **Dr. Rajiv R. Sinha, Secretary, ACBI, Biochem-Lab, East Boring Canal Road, Patna-800 001,** preferably by registered post.

Photograph: Please affix a passport-size photo on the form & enclose a stamp-size photo with the form. DO NOT STAPLE OR PIN.

Photograph: Please affix a passport-size photo on the form & enclose a stamp-size photo with the form. DO NOT STAPLE OR PIN.

ID Card Form: Please fill the Identity Card form and send along with duly filled Membership Application form (Available at Association website www.acbindia.org).

The ACBI Membership Application Form can be downloaded from www.acbindia.org.

Invitation to Members for Case Histories

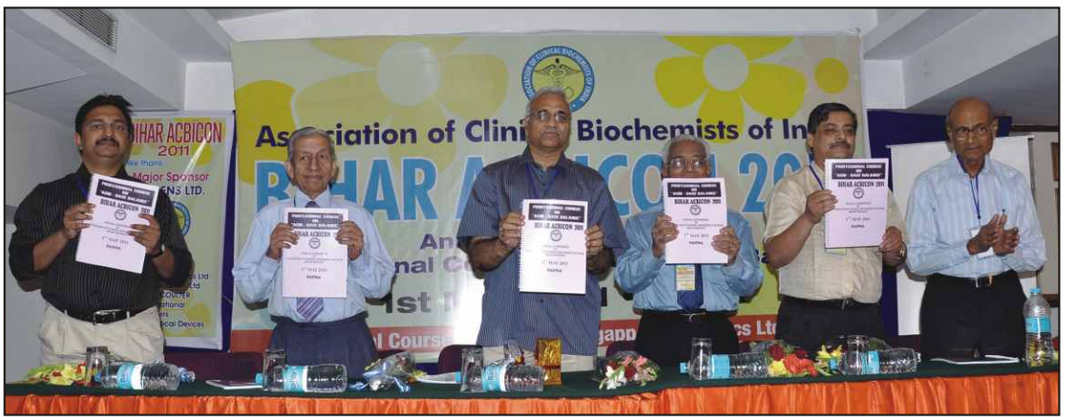
Members are invited to send Case History with Biochemical Investigations of Interesting cases or cases with unusual presentations. Your experience will help others. Please share it with us on ACBI News Bulletin. Send your write up to Dr.Shyamali Pal at : shy23_pal@yahoo.co.in.

Call for Proposal to Host 38th Annual Conference of ACBI

The proposal to host 39th. Annual conference of ACBI should reach the Secreteriat latest by 15th. November 2011. Please contact Secretary **Dr. Rajiv R Sinha** at <kpsacbi@yahoo.co.in> or visit www.acbindia.org for rules and format of application.

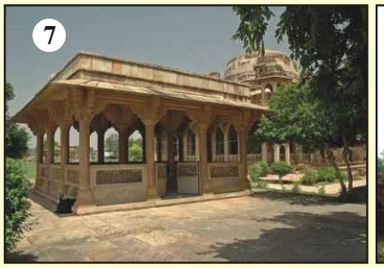
Glimpses from Delhi Chapter of ACBI

Glimpses from Bihar Chapter of ACBI



Regd. No. Patna 29/75-6

Gwalior welcomes you to ABICON 2011



Gwalior

City where you can find History breathing

1. Sas-Bahu Temple inside Gwalior fort
2. Gate of the Gujari Mahal, Gwalior
3. Tomb of Mohammad Ghaus, Gwalior
4. Jai Vilas Palace, Gwalior
5. Town Hall, Lashkar (Gwalior)
6. Surajkund inside Gwalior fort
7. Tomb of Tansen, Gwalior
8. Surya Mandir, Gwalior
9. Jain sculptures and rock carvings inside Gwalior fort