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Tumour Marker Guideline Bookmark – Order Yours Now!
Taking too Much Blood Revisited
Dealing with the Media
Pathology Medicine Championing
Acute Kidney Injury
Reliable Non-invasive Discrimination between IBD and IBS

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The monthly magazine for clinical science

Issue 592 • August 2012

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Front cover: The Pathology Harmony bookmark is launched at the National Audit Committee scientific meeting in Birmingham
Sudoku

This month’s puzzle

Last month’s solution

British Academy of Forensic Science
Science and Justice: The Criminal Court

Saturday 22nd September 2012, Guy’s Hospital, London

09.00  Registration/Coffee
10.20  Welcome and Introduction

Drugs and Behaviour
Chair: Professor Mike Kopelman
10.30  Alcohol, Substances, and Violent Assault  Dr Graeme Yorston
11.00  Role of the Toxicologist  Professor Bob Flanagan
11.30  The Lawyers View  Professor Rudi Fortson

What Price Quality?
Chair: Dr Ann Priston
13.00  What Can and What Can’t be Accredited  Mr Brian Smith (UKAS)
13.30  Commercialism and Criminal Justice  Ms Karen Squibb-Williams (CPS)
14.00  A Court Expert Register, Why?  J.A. Coster van Voorhout (NRGD)

Complexities
Chair: Mr Justice Beatson
15.00  Running a Complex Investigation  DI Martin Hepworth
15.30  Statistics – Problems and Pitfalls for the Unwary  Professor Atholl Johnston
16.00  Statistics in Court  Mr Graham Cooke

Cost to include lunch and refreshments:
Members £50.00, non-Members £65.00, Students £20.00, 6 CPD Points
To book and further details Email: lesley@bafsadmin.org
Pathology Harmony is a Department of Health sponsored initiative which aims to look at harmonising areas of pathology practice. Many will be familiar with the work undertaken in Clinical Biochemistry and Haematology with reference intervals and harmonisation of units. Another area of work that Pathology Harmony has been undertaking has been to look at offering practical guidance for those who use our services. One of these initiatives has culminated in the production of a guideline for the use of tumour markers written especially with the non specialist in mind.

This “Tumour Marker Requesting: Guidance for Non Specialists” has important practical information to ensure these tests are used appropriately. This work has been lead by Dr Cathie Sturgeon, from Edinburgh Royal Infirmary and is supported by the key pathology professions including the Association for Clinical Biochemistry, Institute of Biomedical Science and the Royal College of Pathologists.

Please consider distributing this bookmark to your Primary and Secondary Care users. For example, you might like to send enough bookmarks to GP Practices for every GP to have one on their desk. You may also like to consider your oncology teams and junior medical staff who are involved with tumour marker requesting.

Order Your Bookmarks Now
The bookmark can be ordered by emailing: bookmark@pathologyharmony.co.uk Please order enough for all your GPs in multiples of 100
ACB Spotlight Meetings 2012-2013

One-day meetings addressing hot topics in Clinical Science to be held at the Royal College of Pathologists, 2 Carlton House Terrace, London SW1Y 5AF

19th September 2012

Disorders of Haem Synthesis – The Porphyrias

Organised by Mike Badminton & George Elder on behalf of the ACB Scientific Committee

A multi-disciplinary pathology meeting concerning porphyria with haematology and dermatology aspects. Providing an in depth review of current issues from leading practitioners.

Speakers: Mike Badminton, David Rees, Joanne Marsden, Sharon Whatley, Penny Stein, Philip Newsome, Philip Newsome, Robert Sarkany and Jean-Charles Deybach

Topics:
- Overview of Haem Metabolism and the Porphyrias
- Outpatient Management of Acute Porphyria
- Biochemical Diagnosis of Porphyria
- Role of Molecular Diagnostics
- Management of Acute Porphyria – Case Presentation
- Liver Transplantation in Porphyria
- Pathogenesis of Porphyria Skin Lesions
- New Developments in Protoporphyria

4th October 2012

Showcasing Demand Control Initiatives

Organised by Stuart Smellie & Tony Fryer on behalf of the ACB Clinical Practice Section

The NHS faces a number of challenges such as driving up quality of care, making significant productivity gains, ensuring the government’s reforms work. In order to manage planning, production and delivery, any properly run organisation has to balance demand for products and services with resource.

This meeting will review the trends in diagnostic testing to meet these aims and discuss and compare actual experiences to share a best practice philosophy.

Speakers: Stuart Smellie, Tony Fryer, David Housley, Tim Lang, Hazel Borthwick and Jenna Waldron

Topics:
- Overview of Demand Control
- Developing a Demand Management Strategy & Assessing its Effectiveness
- The Luton and Dunstable Experience
- Minimum Re-testing Intervals
- Admission Profiles, and an Overview of the West Midlands Demand Management Group
- Case Presentations . . . Tales from the Country

This final session will allow delegates to submit a 200-word abstract on any local demand control initiative you are involved in. With selected entries then giving a presentation of 10 minutes duration and a prize for the best presentation. Closing date for receipt of entries is 14th September 2012.
19th November 2012

**Infections in the Immunocompromised Host**

Organised by Deborah Gascoyne-Binzi and Moira Kaye on behalf of the ACB Microbiology Professional Group

Following last year’s highly successful meeting on Near Patient Testing, this meeting will cover aspects of infections and problems found in immunocompromised patients.

*Speakers: Richard Thompson, Ruth Ashbee, Prof Paul Griffiths, other speakers to be confirmed*

*Topics:*
- Lung Transplants – Immunosuppression Regimes and Infections
- Monitoring Antifungal Agents
- Diseases Caused by Cytomegalovirus and Their Control by Means of Universal Immunisation
- Biological Agents and Infection
- Human Stem Cell Transplantation and Infections

All meetings are approved for CPD.

The discounted rate of £130 is available for all ACB Members with further discount to £90 for Trainees. Trainees are defined by the ACB as those ACB Members still actively working towards FRCPath.

Online registration is now open and the full programme for each meeting can be found on the ACB website Meetings page - http://www.acb.org.uk/site/meetings.asp

The ACB Spotlight Meetings continue to provide a varied and exciting range of key hot topics of current diagnostic and clinical interest. Future meetings for your diary are:

**10th December 2012**

**Liver and Paediatric Biochemistry**
Organised by Stuart Smellie on behalf of the ACB Clinical Practice Section

**28th February 2013**

**Genetic Haemochromatosis Benchmarks**
Organised by Alison May on behalf of the ACB Scientific Committee

**21st March 2013**

**Continuing Controversies in the Immunology Laboratory**
Organised by Berné Ferry on behalf of the ACB Immunology Professional Group

**22nd May 2013**

**Disorders of Sex Development**
Organised by Lesley Tetlow on behalf of the ACB Scientific Committee

**September 2013**

**Integrated Commissioning of Pathology Services-Joining the Dots**
Organised by Lance Sandle and Chris Chalonon on behalf of the ACB Scientific Committee

**October 2013**

**Newer Tests in Gastroenterology**
Organised by Callum Fraser and Ruth Ayling on behalf of the ACB Scientific Committee

**November 2013**

**Clinical Microbiology Issues**
Organised by Deborah Gascoyne-Binzi on behalf of the ACB Microbiology Professional Group

**December 2013**

**Hyponatraemia, Fluid Management and the Treatment of Electrolyte Disorders**
Organised by Stuart Smellie on behalf of the ACB Clinical Practice Section
ACBI Annual Conference 2012
5th-6th October 2012
Croke Park Stadium, Dublin

Friday 5th, Morning Session
Demand Management in Primary Care
Dr Tim Lang, Consultant Clinical Scientist, University Hospital, North Durham

Biochemical Diagnosis of Phaeochromocytoma: From Routine Laboratory Testing to Disease Stratification and Personalised Medicine
Professor Graeme Eisenhofer, Professor and Chief in Clinical Neurochemistry, Dresden, Germany

The Management and Treatment of Neuroblastoma
Dr Anne O’Meara, Consultant Oncologist, Our Lady’s Hospital for Sick Children, Crumlin

Friday 5th, Afternoon Session
Generic Substitution of Immunosuppressive Drugs in Transplantation
Professor Teun Van Gelder, Professor in Clinical Pharmacology, Netherlands

Kidney Transplantation in Ireland – Recent Observations
Professor Peter Conlon, Consultant in Nephrology, Beaumont Hospital, Dublin

Acute Kidney Injury – How Do we Define it?
Dr Andrew Lewington, Consultant in Nephrology, St James University Hospital, Leeds

Saturday 6th, Morning Session
The Biochemistry of Inflammation – How Discoveries are Leading to Better Medicine for Inflammatory Diseases
Professor Luke O’Neill, Director of Biochemistry & Immunology, Trinity College, Dublin

Integrating Platform Technologies into Point-of-Care Diagnostics
Professor Michael Berndt, Director of Biomedical Diagnostic Institute, Dublin City University

Genomics and Human Disease: Advances and Clinical Applications in the Post Genome Era
Dr Patrick Buckley, Clinical Scientist, Department of Neuropathology, Beaumont Hospital, Dublin

Saturday 6th, Afternoon Session (2pm-4pm)
Role of Law in the Regulation of Science, Medicine & Technology
Mr Asim A. Sheik, Barrister-in Law, Lecturer in Legal Medicine, UCD

The Role of Toxicology in Emergency Medicine
Professor W.T. Tormey, Consultant Chemical Pathologist, Beaumont Hospital, Dublin

Registration: Early Bird Full Conference (before 20th Sept):
€90; Delegates with a poster: €60; Students: free

Accommodation: Croke Park Hotel which is opposite the stadium at reduced delegate rates.
Further information can be found on our website: www.acbi.ie
or contact Geraldine Collier on Email: geraldinecollier@beaumont.ie
Deacon’s Challenge
No 135 - Answer

A teenage male presents to A&E after a session of “binge drinking” with a plasma sodium concentration of 125 mmol/L and a body weight of 72 Kg. As no other cause can be found for his hyponatremia a diagnosis of “beer potomania” is made. Stating any assumptions you make, estimate the fluid excess in Litres.

The lowest urinary solute concentration achievable by the kidney is approximately 50 mmol/L. Therefore the maximum volume of urine (and free water clearance) is limited by solute availability. In beer potomania the ingestion of large volumes of fluid (with a low solute content), often aggravated by poor nutrition, results in insufficient solutes to excrete the excess volume of water. A dilutional hyponatraemia ensues with excess fluid shared between the ICF and ECF compartments.

Since sodium is mainly confined to the ECF and the concentrations of plasma and ECF sodium are equal:

\[
\text{Total ECF Na (mmol)} = \text{Plasma Na (mmol/L) } \times \text{ECF vol (L)}
\]

Assuming there is no change in total body sodium after the binge drinking session and there is no sodium shift between compartments or significant changes in the concentrations of other osmotically active species:

\[
\text{Initial ECF Na (mmol)} = \text{Final ECF Na (mmol)}
\]

Therefore:

\[
\begin{align*}
\text{Initial plasma Na (mmol/L) } \times \text{Initial ECF vol (L)} &= \text{Final plasma Na (mmol/L) } \times \text{Final ECF vol (L)} \\
\end{align*}
\]

The final plasma Na concentration is given as 125 mmol/L.

The initial plasma Na is unknown, but it would be reasonable to assume a “normal” value of 140 mmol/L.

The above expression still contains two unknowns – the initial and final ECF volumes. One solution would be to assume an initial ECF volume of 14 L (a typical value for an adult male). The calculation then becomes relatively straightforward:

\[
\begin{align*}
14 \times 140 &= \text{Final ECF vol (L)} \times 125 \\
\text{Final ECF vol} &= \frac{14 \times 140}{125} = 15.7 \text{ L} \\
\text{ECF excess vol} &= \text{Final ECF vol} - \text{Initial ECF vol} = 15.7 - 14 = 1.7 \text{ L}
\end{align*}
\]
This ECF volume is then multiplied by 3 (since the ECF is normally approximately a third of total body water):

\[
\text{Fluid excess} = 1.7 \times 3 = 5.1 \text{ L}
\]

It is possible to perform this calculation (and obtain a similar result) without assuming a value for the initial ECF volume:

\[
\text{Initial body wt (Kg)} = \text{Final body wt (Kg)} - \text{Water excess (Kg)}
\]

Substituting final body wt = 72 Kg

\[
\text{Initial body wt (Kg)} = 72 - \text{Water excess (Kg)}
\]

Assuming that initially the total body water was a normal 60% of body weight, and that a third of this was located in the ECF we can write:

\[
\text{Initial ECF (L)} = (72 - \text{Water excess}) \times \frac{60}{100} \times \frac{1}{3} = 14.4 - (0.2 \times \text{Water excess})
\]

Assuming the excess water that accumulates is divided between the ECF and ICF in the normal ratio of 1:2, then the following expression can be written for the final ECF vol:

\[
\text{Final ECF (L)} = \text{Initial ECF (L)} + (0.33 \times \text{Water excess})
\]

\[
= 14.4 - (0.2 \times \text{Water excess}) + (0.33 \times \text{Water excess})
\]

\[
= 14.4 + (0.13 \times \text{Water excess})
\]

Substituting these two ECF volumes and the plasma sodium concentrations into the original equation gives:

\[
140 \times \{14.4 - (0.2 \times \text{Water excess})\} = 125 \times \{14.4 + (0.13 \times \text{Water excess})\}
\]

which can be solved for water excess:

\[
2016 - (28 \times \text{Water excess}) = 1800 + (16.25 \times \text{Water excess})
\]

\[
(16.25 \times \text{Water excess}) + (28 \times \text{Water excess}) = 2016 - 1800
\]

\[
44.25 \times \text{Water excess} = 216
\]

\[
\text{Water excess} = \frac{216}{44.25} = 4.9 \text{ L}
\]

**Question 136**

A new drug for the treatment of rheumatoid arthritis is metabolised in vivo to its active metabolite (MW = 142) by a plasma enzyme. The metabolite is cleared by glomerular filtration. A patient (body weight = 75 Kg, GFR = 100 mL/min) failed to respond to treatment. Kinetic studies showed that the patient’s enzyme obeyed simple Michaelis-Menten kinetics with respect to drug concentration ($K_m = 80 \mu\text{mol/L}$ and $V_{max} = 5 \mu\text{mol/min/L plasma}$). Calculate the maximum achievable steady state plasma concentration (in mg/L) and comment on the significance of this result if the therapeutic range for the metabolite is 80-140 mg/L.
Dealing with the Media in Manchester

Karolina Stepień, Manchester Royal Infirmary

The Standing Up for Science Media Workshop in Manchester

A Standing Up for Science day was recently held at the University of Manchester. The workshop was a guide for early career researchers to learn how to deal effectively with the media. Scientific organisations and professional bodies supported the event. The Association for Clinical Biochemistry was one of the sponsors of the meeting. High-quality talks were given by speakers with experience in the media and communicating ‘good science’ to the public.

The morning session, entitled ‘Science and media’ was focussed around the changing image and role of science and scientists in the public domain. Panellists discussed what happens when research announcements go wrong, statistics are manipulated or risk factors are distorted, given the name ‘bad science’ by the forum.

Professor Matthew Cobb of the University of Manchester strongly advised delegates to ‘impact across the globe’ by writing blogs and using Twitter.

Professor Trevor Cox of the University of Salford, who has contributed to approximately 60 BBC programmes himself, stressed that it is always important to ask the journalist what the angle of the interview is; otherwise, ‘you may be caught up in something against you’. Looking for an interesting argument for their article, journalists can use your story in a way that may be damaging for you. Thus, you may need to prepare your answers in advance, depending on the theme of the article.

Finally, Dr Carl Rowbottom of The Christie Hospital gave detailed advice on how to prepare for the interview. Information should be written down and structured. He stressed that it is essential to interact with the journalist to avoid any misinterpretation of the information. With time and experience in press interviews, scientists will learn to get the message across.

Directly Approach the Reporter

In the afternoon, a panel of experienced journalists explained how they approach stories, and balance the need for news and entertainment with reporting science. Liza Williams, Health Reporter for the Liverpool Echo, gave an overview of her everyday work, how she approaches scientists to obtain news for her articles, and what topics are eye catching. Victoria Gill, Science Journalist for BBC Nature online, said that to avoid the misinterpretation of research results, she recommended the use of direct quotes from speakers’ talks. She also advised the scientists in the audience that if they wish their results to be presented in the media, they need to approach the journalist themselves. Rebekah Erlam from BBC Radio 5 Live emphasised that scientists with no experience of dealing with media need to ‘shadow’ their supervisors, and senior members of their research team and observe how they promote their research results and handle media debates, particularly when the discussion becomes more polarised.

Help from Communications Professionals

The ‘nuts and bolts’ session offered practical guidelines for early-career researchers on having their voices heard in debates about science. Lisa Parker-Gomm, the External Relations Manager of the Institute of Physics and Engineering in Medicine, emphasised that all organisations should have a Press Officer to deal with the media. She advised that all scientists working for their organisations, ‘need to go to a Press Officer to get their news out’. All researchers are core ambassadors for
their work and need to learn how to frame their communications in their debates with the media. Victoria Murphy and Julia Wilson of the Sense About Science organisation encouraged us to respond to other forms of ‘bad science’ and contact the media directly. In fact, in the discussion, some of us recounted contacting radio science journalists directly via email or leaving a message on their answering machines, to attempt to correct ‘bad science’, such as untrue and misleading scientific definitions or unproven scientific theories, but we were unsuccessful in getting our message across. Top tips from the panel for when we come face-to-face with a journalist is to keep the points concise, interesting and even humorous.

**Wider Dissemination of Research Results**

Overall, the conclusion was that original research results should be published not only in scientific papers, but also as ‘scientific news’ in a daily newspaper to educate the general public. In addition to the excellent scientific programme, the organisers ensured that we had time for networking in a pub at the University of Manchester campus.

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**ACB Wales Region Autumn Scientific Meeting**

**Toxicology and Therapeutic Drug Management**

**Wednesday 14th November 2012**

**Christchurch Centre, Newport**

**09.30** Registration and Coffee

**10.15** Collaborative Working - Labs and Addiction Services

*Dr Julia Lewis, Consultant Addiction Psychiatrist and Clinical Lead Gwent Specialist Substance Misuse Service*

**11.00** The Use of the Laboratory in the Management of Poisoned Patients. What Do You Need and What’s Out There?

*Dr John Thompson, Director, National Poisons Information Service, Llandough Hospital, Cardiff*

**11.45** Developments in Therapeutic Drug Management

*Mike Hallworth, Consultant Biochemist, Royal Shrewsbury Hospital, Shrewsbury*

**12.30** Lunch and Trade Stands

**13.30** Cyanide Poisoning

*Dr Alun Hutchings, Cardiff Toxicology Laboratories, University Hospital, Llandough*

**14.15** Members’ Presentations

**15.15** Coffee

**15.30** Audit Presentations

**16.30** Award for Members’ Presentation

*Registration: Day delegate rate: £35 for ACB Members, £40 for non-ACB Members. Registration via the ACB website. Registration closes on Friday 2nd November.*

*CPD accreditation: 4 points*

*For further information, please contact: Fiona Stratford, Clinical Scientist, Royal Gwent Hospital, Newport Tel: 01633 238462 or email: fiona.stratford@wales.nhs.uk*
Championing Pathology and Laboratory Medicine

Joe O’Meara, ACB Public Affairs Officer

The Presidents of the Association for Clinical Biochemistry (ACB), Royal College of Pathologists (RCPath) and Institute of Biomedical Sciences (IBMS) together with the Chief Executive of the British In Vitro Diagnostics Association (BIVDA), the Scientific Director for NHS London and the Global and European leads for Labs Are Vital from Abbott gave an important boost to the programme to Champion Pathology and Laboratory Medicine at a workshop event on 31st May.

Financial Targets Impact on Pathology

The programme, to champion the cause of Pathology and Laboratory Medicine was established in the summer of 2012 by the executive of Labs Are Vital. It was inspired by the financial crisis affecting the global economy and impacts being felt in UK public expenditure, healthcare included. The financial reality is already impacting on laboratory medicine in England and other areas of the UK.

Keynote addresses by Archie Prentice, President of the RCPath, and Fiona Carragher, Science Director for NHS London, showed us that there were clear opportunities to influence the future while bringing home the reality of the Government’s financial targets and the likely impact on Laboratory Medicine. The challenges and opportunities are largely common across the interests of all the organisations.

Speaking With One Voice

There was lively discussion of the messages which need to be delivered to demonstrate the value of Laboratory Medicine. Professional involvement is vital in transforming patient services whilst maintaining quality and safety and improving efficiency.

We need to catalogue our successes in this arena and amass the data that will support our approaches to key decision makers – who include in their number fellow clinicians and other professionals as well as senior management, service commissioners and Board members and politicians. We also need to identify and even create opportunities to disseminate this information.

Local Networks of Support

The second part of the workshop concentrated on refining key messages and providing advice and guidance to our champions on the best ways to communicate those messages in a clear and concise manner.

The ACB has identified most of its champions through its Council, with the Regions all being invited to identify at least one local member to represent them. They, in turn, will need a network of others locally to support them in their work, assist with delivering messages and gather examples of good practice to feed back into the support network. This work needs support from members at all stages of their careers. The more experienced will bring that experience to bear but the more recent entrants to the profession will bring new ideas and enthusiasm and energy. The future of the profession is theirs!

Contacts at a high level within the structures of the organisations involved are working rapidly to establish a core collaboration to support the initiative and the Labs Are Vital initiative will be a key support tool and mechanism. There are other organisations facing the same challenges and needing to exploit the opportunities and the collaborative approach is likely to grow to involve them.

We Can all be Champions for Laboratory Medicine

Every member can play a part in ensuring the success of this initiative. We need to exploit the opportunities available to ensure that the transformations that are an inevitable
consequence of the Government’s activities take place in as constructive a way as possible, maintaining the vital contribution of Laboratory Medicine and ensuring that best practice becomes the common practice throughout the UK – and beyond!

Information on how to help will be communicated widely through our publications (notably ACB News and the ACB website) and through the Labs Are Vital website. A first step for anyone who hasn’t already done so would be to sign up as a supporter through that website (www.labsarevital.co.uk). You can also help by letting us know about examples of best practice or efficiency from your lab or region. There are already some examples of these on the Labs Are Vital website under the heading of “Labs and Lives”. If you can let us have a short description we can help to put it into a structured form and add it to our armoury.

Healthcare Science Awards Winners 2012

Healthcare Scientist of the Year
Rachel Cutting, Sheffield

Clinical Leader of the Year
Keith Pearce, Manchester

Service Innovation of the Year
Ed Hinchcliffe, Manchester

Ambassador of the Year
Helen Liggett, NHS North West

Excellence in Research
Derek Middleton, Liverpool

Healthcare Science Patient Involvement Award
Martin Myers, Preston

Rising Star of the Year Award
Katherine Kenny, Oxford

Professor Pam Riches and Professor Anne Green were admitted to the Chief Scientific Officer’s newly established Roll of Honour.

A personal view by David Sinclair on the CSO’s meeting held on 30th April and 1st May 2012 during which these Awards were announced can be found on the ACB website.
Patients are developing AKI in a hospital near you and they need your help. Maybe slightly dramatic, but as I found out at the ACB spotlight meeting on AKI, the figures themselves are pretty startling with a 47% hospital mortality, 40% survivors develop CKD and 10% needing long-term dialysis. Estimated NHS costs run to £620 m per year. Early intervention of AKI has been shown to reduce severity and mortality. So what can the laboratory do to help? First, we need to understand the problem, so for those who were not fortunate enough to attend the meeting, here is a brief summary.

Changing Face of AKI
The morning session, chaired by Dr Edmund Lamb, opened with Dr Paul Stevens who gave an interesting history of how the concept and aetiology of AKI has evolved over the centuries. Early descriptions were commonly related to severe cases of kidney failure following trauma and crush injuries.

More recently, the term AKI has been introduced to describe a concept which includes the development of kidney injury preceding failure. Using this definition, AKI can have a more insidious onset and he used data from East Kent Hospitals to illustrate that AKI is very common both in and out of hospital, especially with increasing age.

He showed that even minor degrees of AKI were associated with increased mortality and morbidity from CKD and a significant number of cases were potentially avoidable.

Pathophysiology of AKI
To give us an insight into why AKI has such severe consequences, Dr Suren Kanagasundaram explained how the pathophysiology involves a complex interplay of haemodynamic factors, inflammation and endothelial and epithelial cellular damage. The immune system can propagate further damage even after the initial insult has resolved and recovery may be hindered by maladaptive repair, leading to fibrosis and CKD. He also described how the pro-inflammatory cascade initiated by ischaemic AKI can cause organ “cross-talk”, inducing injury to remote organs such as the heart and lungs.

Consensus on AKI Definition
Professor Norbert Lameire provided an entertaining update on the KDIGO guidelines for AKI. The KDIGO definition of AKI combines both RIFLE and AKIN to reflect the increased risk of mortality observed in patients detected by either of these criteria. Even patients with transient increases in serum creatinine >26 µmol/L which resolved within 48 h, were shown to have greater hospital mortality rates.

He also explained the new conceptual model of acute kidney disease (AKD) to encompass other conditions, in addition to AKI, which cause renal impairment or damage over a period <3 months.

National Initiatives for AKI
Dr Donal O’Donoghue highlighted how an increasingly aging population with a high prevalence of multiple morbidities will further escalate the significant financial burden of AKI on the NHS. He emphasized that AKI is an avoidable killer and as the National Clinical Director for Kidney Care, he has been leading a series of national initiatives to improve the prevention, detection and management of AKI. These include the development of NICE quality standards and NICE clinical guidelines. A competency framework for AKI has also been produced and is available from www.kidneycare.nhs.uk together with an AKI resource pack.
**Better Biomarkers**

According to Dr Stefan Herget-Rosenthal, the promising biomarkers we keep hearing about - NGAL, cystatin C and IL-18 - are still not ready for routine clinical use. Further research is required on larger, heterogeneous cohorts with relevant clinical endpoints. He highlighted the problems of validating new biomarkers in the absence of a gold standard and how comparisons with serum creatinine can be misleading. There are also the usual assay issues of standardisation, precision and interferences. He suggested the combined use of multiple biomarkers may prove to be more useful in the future, not just for detecting AKI, but to indicate the underlying cause.

The afternoon session was chaired by Dr Bill Bartlett and having heard that new biomarkers were unlikely to help with the detection of AKI in the near future, Professor Callum Fraser explained how we could be using creatinine to better effect. He suggested that taking account of the biological and analytical variation in the form of reference change values (RCV) could provide a more appropriate reflection of significant changes in serum creatinine. He also proposed that reporting probabilities could assist clinicians to determine whether a rise in serum creatinine was significant or not.

**NCEPOD Report on AKI**

Dr Marisa Mason presented some of the concerning findings from the NCEPOD report on AKI. Namely that patients who died from AKI often had poor assessment of risk, there was unacceptable delay in recognising post-admission AKI in 43% of patients and the development of AKI was both predictable and avoidable in 21% of post-admission cases. There were also inadequacies in the recognition and management of AKI complications such as acidosis and hyperkalaemia. One of the recommendations from the report was that all emergency patients should have their electrolytes checked on admission and appropriately thereafter.

**The “3Rs” of Prevention**

Dr Andrew Lewington introduced the 3 Rs of prevention for AKI - Risk assessment, Recognition and Response. He described how these can be applied to prevent AKI in primary and secondary care. Risk factors include old age, CKD, cardiac failure and nephrotoxic drugs. Recognition requires appropriate monitoring of renal function and could be aided by electronic alerts. Response may involve fluid management, review of medications and appropriate referral. He emphasised that improvements in the prevention of AKI could and should be made.

**NICE Guidelines are Coming**

Dr Mark Thomas gave a brief overview of what would and wouldn't be covered in the NICE clinical guidelines on AKI to be published in August 2013. He then shared his experience and advice on implementing alerts for AKI. He showed how Heartlands Hospital alert for a 75% increase in serum creatinine had improved absolute survival by 6-8% by prompting a nephrology nurse or doctor to contact the primary clinician. He also discussed the various options for alerts regarding thresholds, determining baseline creatinine and who the alert notifies. He highlighted that further studies are required to determine the most effective type of alert and recommended working closely with your clinicians.

The presentation on alerts was the perfect finale to a captivating day and aptly returns us back to our initial question - what can the laboratory do to help? Generating alerts for AKI would be a great start and based on discussions between the delegates, many laboratories are finding various ways to do this. We need to ensure the alerts are supported by clinical guidance, monitor their effectiveness (is alert fatigue a problem?) and measure their impact on patient outcomes. Laboratories could also contribute to the research of new biomarkers for AKI especially regarding clinical utility and analytical performance. Disseminating evidence from our alerts and research will allow us to determine best practice and hopefully AKI will become another example of the significant contribution our profession makes to improving patient care.
Healthcare Science: A Catalyst for Delivering a New Healthcare System

Dr David Sinclair, Portsmouth

I attended day one of this two-day conference. There were some very impressive presentations that were genuinely inspiring and uplifting (no mean feat these days, for someone as wizened as I). It was expertly led by Vivienne Parry, who some might remember as presenter of BBC’s Tomorrow’s World and who herded the cats around the auditorium very well.

Professor Dame Sally Davies, the Chief Medical Officer opened with a presentation that outlined the challenges that face the NHS as a whole and Healthcare Science in particular: an ageing population, smoking deaths down but alcohol consumption rising and obesity rates increasing. Allied to this is the dementia time bomb with increased costs associated with dealing with an ageing population. She highlighted the steady rise of MHRA alerts involving medical devices and she alluded to the fact that Point of Care testing strategies will become more important given the ageing population in the UK. As she was saying this, I was suddenly dazzled by the spotlights that were glinting off all the bald and silver heads in the audience so her remarks were probably well timed.

NHS Based Research

The main thrust of her presentation though was dealing with the place of NHS based research and how supportive she was of this. The goals are to promote NHS research in terms to partnerships with government, charities, industry and the Universities. The National Institute for Health Research (NIHR) are offering fellowships to promote research (see www.nihr.ac.uk for further details - this site is well worth a look). She argued strongly that it is unethical for the NHS not to be involved in research and she pointed to the creation of a Health Research Authority who’s Chair has just been announced as Professor Jonathan Montgomery (my own area’s PCT Chair) and which will have a key role to play in NHS research. One of the most profound phrases used by Sally Davies was her observation that as far as many people in higher echelons of Government were concerned: “Perception is almost as important as evidence” – a truism that probably applies to many other walks of life!

Health Education England

Christine Outram the Senior Responsible Officer for Health Education England gave an overview of Health Education England (HEE) - she talked about its aims, role and mission. The vision is to create a World class workforce for world class health to meeting changing needs; she acknowledged that workforce development was linked to healthcare reforms and that the quality of development and training was a central issue for patient care and public health. She described the formation of the Local Education Training Boards (the newest acronym which we all became very familiar with throughout the day is “Letbees”) – set up to promote high quality education and training, allocating and accounting for NHS education and training resources and ensuring security of supply of the workforce All with a view to being operational alongside Public Health England by April 2013.

Val Davidson Head of National School Regional Scientific Director West Midlands followed with details of the National School of Healthcare Science and the rallying cry “Get full frontal with your LETBs”. She mentioned that the LETBs were funded to the tune of £4.7BN and would be held to account by Health Education England on how this was spent. A lead LETB for HealthCare Science
would be appointed and CPD money would be coming from LETBs.

I’ve heard politicians talk before and “bland” or “frothy” are words that often spring to mind but Sir David Nicholson the CEO of the NHS was a different matter. It was easy to see why he is so well regarded. He spoke fluently, logically and effortlessly for 40 minutes without notes or overheads. Not everything was particularly welcome to me but he was realistic about the financial pressures that the NHS is facing. Change is consistent and constant but keeping hold of the purpose is paramount. Our ability to maintain continuous improvement with financial constraints is the only game in town as the current financial constraints are likely to endure for the next 6-7 years! Innovation, which is what we are noted for after all, is essential to take things forward. To achieve the £20BN savings HMG are looking for will require pay restraint, better procurement and some 40% efficiency improvements. He gave some examples of how this might be achieved e.g. if every GP referred one fewer patient and asked for one fewer blood test a week, that alone would save the NHS £500M. Now, I’m always suspicious when I see nice round figures like that. £497M for example sounds as though someone at the DoH might have worked it out rather than plucking £500M out of the air, but in this case, I suspect he might not be far wrong. Wait a moment though- isn’t that exactly the figure Ian Barnes wants us to save? That led Sir David onto taking about system thinking where we need to be thinking in terms of savings in the whole NHS rather than just in the silo that we look up from. Actually, I think this is something we already know a lot about in that savings made in primary care from doing a BNP estimate or a CCP antibody are never reflected in Pathology budgets! Sir David was very keen that we should be involving and engaging with the public and he is very committed to the current Scientific Directors’ network. His final parting thought before he swept off the podium and out of the building was to engage as much as possible with the emerging CCGs and “be careful that you don’t end up trying to provide what you already provide”. He won’t care what I thought of him but if it means anything to him, I thought he was a thoroughly impressive speaker.

Innovative Commissioning

Dr Jane Povey, a GP in Telford but who doubles up as Clinical Engagement Director, Commissioning Development at the DoH/NHS Commissioning Board Authority talked about the new Clinical Commissioning Groups that she expected to be clinically-led and focused, open and transparent, capable and efficient, inclusive, and good at working with others. They have been able to identify and support groups of practices who are keen to make faster progress in taking on more responsibility for commissioning; create learning networks across the country and increase the number of front line clinicians in shaping the groups. The aim is to create innovative clinical commissioning, with increasing delegated responsibility to contribute to the delivery of QIPP and build strong relationships with key local partners. Traditionally GPs were responsible for providing care for their own patients: that has now been widened out to a sharing a Collective responsibility, in shared leadership with managers, to continually improve health outcomes for the population served and to do so within available resource.

Dr Mike Durkin, a Consultant ITU Anaesthetist in Gloucester and who is also Medical Director at NHS South of England, gave us a very interesting insight of the development of strategic clinical networks. These will be defined by NHS outcomes to ensure that people’s rights under the NHS constitution are met but within resource limits. The aims are to make certain that patients have more choice and clinicians of all sorts have more choice to innovate with a clear reduction of inequality in access to healthcare. These Networks should be embedded and developed in the new system and with the Government’s support, CCGs and the NHS Commissioning Board should form new Clinical Senates to facilitate this. The NHSCB will have 5 Domain Leads in Medical and Nursing
Directorates supported by doctors, nurses, midwives and a full range of professionals represented by Chief Professional Officers. It will be a clinically led system focused on outcomes and patients. There will be a number of Strategic Clinical Networks (SCNs) across England. Support teams will be hosted by NHSCB. Local networks will be supported by CCGs and providers may also be developed as locally determined. Their role will be to support CCGs and the NHSCB improve outcomes, reduce variations, support innovation and increase productivity and efficiency. Clinical Networks therefore have a number of goals and aims. They will be condition focused with standard terms of reference. There will be a single operating model in geographically defined areas based on patient flows. There should be 14/15 support teams across England drawing on analytical expertise such as that provided currently by Public Health Observatories and academic Health Science Networks. The challenges set for us in this area include focusing on a clinically led commissioning system that contributes to improving outcomes and quality of care for our population. We should develop and maintain a professional network at a local, regional and national level to ensure that we are in position to support the development of the Outcomes Framework. We must use every opportunity possible to be seen as a leading member of all the clinical teams you support.

Defining Services Subject to Choice

Bob Ricketts, Director of NHS Provider Transition gave a fascinating insight to a relatively new concept to me that of Extending Patient Choice of AQP (Any Qualified Provider). Commissioning will be responsible for defining the services that can be subject to choice of AQP so that when a service is subject to choice of AQP, patients themselves can choose to be treated by any qualified provider, should they wish to. Providers must meet the NHS Standard and Price. Commissioners must decide the affected areas based on needs and priorities, the available scope for improvement and patient feedback, sustainability, suitability, clinical risk and continuity patient choice and control. The broad terms the aims of AQP are to increase choice & control for patients as long as the choice of provider adds value and is valued by either the patient or clinician; provide commissioners with an effective tool to increase quality; make a contribution to QIPP through pathway re-design & pricing, to catalyse the spread of innovation & best practice and avoid the delays & costs of bidding through formal procurement. www.supply2health.nhs.uk/AQPResource Centre has more details on this topic.

Professor Ian Cumming who is the National Director for Quality during Transition reminded us all that this was a time of great change within the NHS because we are having to readjust to a much slower growth in recurrent funding. During 2010-2011 we had 5.5% growth. However, during the period up to the end of 2014 at least, there will be no growth and this is unprecedented in the NHS which had hitherto been saved to a great extent from spending cuts. This will create an enormous financial challenge for the NHS of £15-20 billion over 4 years (20%) – the QIPP challenge! He showed some compelling evidence that quality is at great risk during any change and therefore changes brought about during this transition have to be managed properly. One of the most fascinating observations he made was that the impact on anyone’s productivity if they are likely to lose their job can fall to 20% of its previous level. He continued with a look at so-called “never events” and made reference to the Mid Staffordshire public enquiry into patient care in a hospital where targets were put before clinical judgment and patient care, while also focusing on the cost and volume of treatment not the quality. He ended with a graphic picture of some dreadful, unforgiveable bed-Sores and quoted a Cherokee Indian phrase “If you listen for the whispers, you won’t have to hear the screams” – there was never a truer word written!

All the presentations from this worthy and worthwhile event are available at: www.pcc-cic.org.uk/healthcare-science-a-catalyst-for-delivering-a-new-healthcare-system
Demand Management in Pathology Phlebotomy

We have heard lot about demand management and how this may save resources. However, it is bit surprising that there has been little talk about managing our own demands, i.e. demand for blood for tests. It is well documented that many patients come into hospital with normal haemoglobin and develop anaemia during their hospital stay as a result of blood loss for diagnostic tests (see references 1 & 2).

We have the technology to do a large number of tests in a small volume of blood. We routinely do this with samples from the paediatric age group. However, we demand more samples from adults. Many laboratories ask for several tubes of blood for different areas/sections of the laboratory. Why haven’t we developed processes and methods to reduce the amount of blood we ask for? Is it because we are mainly concerned about budgets and not about the well being of our patients! Maybe the ACB can initiate steps to tackle this problem.

Ram Swaminathan, London


Ed – We devoted a substantial part of an ACB News to this a year or so ago and also had several follow up articles. See ACB News electronic copies at www.acb.org.uk for November 2010 for blood wastage article.
What’s In a Name?

I was pleased to see our President’s item in the June ACB News addressing the issue of the ACB name, for a number of years a number of members have been pressing the case for including Laboratory medicine in the name. I was however disappointed to note that the international perspective quoted did not include the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) which is most closely relevant to the ACB.

Yes, EFLM! The European Federation has since it was formed from the merger of EC4 and FESCC had the full name given above, but the acronym used was EFCC, there was pressure from some individuals to emphasise the Laboratory Medicine element, which I explain in a little more detail below. We canvassed our 40 member societies on the options of: EFCC. EFCCLM or EFLM, the overwhelming majority chose EFLM and we have now adopted this acronym.

Why change? The attempts to create a Common Platform for recognition across the EU of our profession is a long and continuing effort; again after consultation with member National Societies it was agreed the many names by which we call ourselves: clinical chemist, clinical biochemist, biologist medicae, medical biochemist, etc was confusing and did not enable ready recognition of our role in the healthcare team or the standards required.

The conclusion was to adopt and use the term ‘Specialist in Laboratory Medicine’ as our collective descriptor. If nine EU countries adopt Laboratory Medicine in their title and be recognised by their governments then we can obtain recognition of a Common Platform which will then require practitioners to reach a certain standard of training and competence; EFLM, through its professional registration arm, is working very hard through CEPLIS (European Council of the Liberal Professions) to achieve this. Given the freedom of movement enshrined in the EU and how the actions of one state can inform EU wide application of practice, this is a very important and necessary goal.

I do not know what options the ACB Executive propose putting to the membership, but I would urge you to take cognisance of the fact that it is not just whether ‘a rose by any other name would smell as sweet’, but the need to ensure that the Laboratory Medicine rose-bed only contains roses!

Ian D Watson
President, European Federation of Clinical Chemistry and Laboratory Medicine (EFLM)
ACB News Crossword

Set by Rugosa

Thanks to everyone who submitted a winning entry for a pack of Tumour Marker bookmarks. Hopefully these are now with your GPs. Of course for those of you who were not successful you can now order your free packs by emailing: bookmark@pathologyharmony.co.uk and they will come to you free of charge. This month all winning entries emailed to the Editor prior to the solution being published will receive a mystery prize.

Across
6 Bird with defunct take off? (7)
7 Drunken colleagues wanting ale as energy source (7)
9 Take it, be confident (5)
10 Have a break after most money is sorted out for the change, so to speak (9)
11 Centre of new, superior and unusual clues (7)
13 Egg, perhaps, for gamesters missing subscribed feed (6)
15 Outline principles for essentials of a healthy diet (5,8)
19 Parliamentary leader abandons promise about altered form with corresponding constituents (6)
20 Gags I rate taken from comic feature films (7)
23 Locating IUPAC tyrosine derivative reaction with 7 across, for example (9)
24 Humour, firstly, lets you make people happy (5)
26 Final act: ambiguous inexactitudes not extant (7)
27 Made unwell when low-salt diet ordered without any test (4,3)

Down
1 Warning symptom having two elements (4)
2 Screen ion-free melatonin mixture (6)
3 One who does little of value about evidence-based medicine looks after an information source (9)
4 Anion added raised heat production (8)
5 Unforgettable mental record following Scotsman on centre court (10)
6 More than effective for containing gas (6)
7 Informal information explaining first cell structure (4)
8 Equally matched with the Spanish team (6)
12 Acrylic box concealing a radical description (10)
14 Poles workstations? (9)
16 Acid-free compost acclimatised plant (8)
17 Ingest incorrectly made tinctures (6)
18 Give a wide berth to some kiddies chewing gum (6)
21 Line up or get wet (4,2)
22 Humour or anger (4)
25 Spy spot (4)

Last month’s solution

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