

# ACBNews

The Association for Clinical Biochemistry | Issue 584 | December 2011



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Heart Disease

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– Nominations  
Requested



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Printed by Swan Print Ltd, Bedford  
ISSN 1461 0337  
© Association for Clinical Biochemistry 2011



**The Association for  
Clinical Biochemistry**  
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# ACB News

The monthly magazine for clinical science

Issue 584 • December 2011

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*Front cover: Rachel Myers, Stuart Chisnall, Jag Grewal and  
Doris-Ann Williams on the BIVDA stand at IBMS Congress*



**Focus**  
Association for Clinical Biochemistry  
National Meeting  
Liverpool 2012

**focus on the patient**  
[www.focus-acb.org.uk](http://www.focus-acb.org.uk)

The Arena  
& Convention  
Centre, Liverpool  
30 April - 3 May

# Greater Manchester Primary Care Pathology Tendering in New Year

For several years the Clinical Directors and Chief Executives within the Greater Manchester conurbation have been working on a strategic outline case for taking pathology forward as a single consolidated pathology service. This work has included many meetings and different forms of engagement with laboratory professionals as well as users of pathology services and led to the 20:20 vision which alluded to a 20% financial saving and 20% increase in quality of the service provision.

Over the last 12 months primary care commissioners have been concerned at the "limited progress" on "the necessary quality and efficiency objectives". This has now been escalated to the extent that the whole of Greater Manchester's primary care direct access work is likely to be put out to tender early in 2012 unless "rapid progress towards a [collaborative] solution" occurs. Commissioners have issued a document warning of this, which states that in the

New Year a procurement exercise will be initiated, which will last 6-12 months. A further 6 month hand over period to the successful provider(s) will enable the changes to come into effect in 2013.

## No Integrated Pathology Service

As this procurement exercise is primary care commissioner driven it means that changes in Greater Manchester pathology will now vary markedly from the strategic outline case for a single pathology service across primary, secondary and tertiary care. The proposed procurement will encompass all pathology disciplines, with the exception of cytology which has already had a recent procurement exercise, but will be restricted to the services delivered for primary care.

Primary care commissioners end by stating that these



*Happier days for Greater Manchester Pathology Network with the 20:20 vision proposals*

changes are "mainly logistical" and in their view "the only change for our patients should be a more consistent, reliable and better value for money service". The document ends by acknowledging that the proposed procurement "may have implications for staff within provider organisations" and "it will be important to avoid unnecessary redundancies and retain key skills and expertise". ■

## ACB Management Course

The Guildford Management Course will now be run every two years.

The next course will take place in 2013.

For those who need plenty of time to get this in their diaries the course dates are:

**14th-19th July 2013**

The key contact for the course at this stage is Sally Benton,  
email: [Sally.Benton@bartsandthelondon.nhs.uk](mailto:Sally.Benton@bartsandthelondon.nhs.uk)

# Association for Clinical Biochemistry

## Election of Directors

Nominations are called for the following elected Directors: Director of Finance, Director of Publications and Communications (Company Secretary), Director of Education, Training and Workforce, Director of Scientific Affairs, Director of Clinical Practice and Director of Regulatory Affairs.

These posts are for a maximum term of five years commencing at the AGM in 2012. All the current Directors, with the exception of the Director of Finance, are willing to continue for a further term of office. Nominations for these positions, duly countersigned should be made on the nomination form in this issue of ACB News (page 19) and sent to:

ACB Administrative Office  
130-132 Tooley Street  
London SE1 2TU

Closing date: 10th February 2012

# Focus Poster Deadline Approaches

Remember that between Christmas and New Year if you are working in the laboratory things can go surprisingly quiet enabling you to get a draft of your poster abstracts set-up. The timeline for handling abstracts this year is:

- ◆ **Deadline for Submission**  
**13th January 2012**
- ◆ **Abstract Decision**  
**29th February 2012**
- ◆ **Early Booking for Focus**  
**23rd March 2012**

You can see all the details of  
Focus on the website at

**[www.focus-acb.org.uk](http://www.focus-acb.org.uk)**

# Sudoku

## This month's puzzle

	S	C					Y	R
R			H				I	
I			S				M	
	M			T	E			
			Y	C				I
		S			M			T
		T			Y			E
M	C						S	H

## Last month's solution

Y	M	H	R	I	E	S	T	C
I	T	E	C	M	S	R	Y	H
S	R	C	Y	H	T	I	M	E
C	Y	I	S	R	H	T	E	M
T	S	R	E	Y	M	C	H	I
E	H	M	T	C	I	Y	R	S
M	C	Y	H	S	R	E	I	T
H	E	S	I	T	Y	M	C	R
R	I	T	M	E	C	H	S	Y

# 12 Themes for National Pathology Year 2012

To keep the momentum going after the success of the last three years of National Pathology Week, and to give members of all pathology specialties the opportunity to highlight their role in modern healthcare, twelve themes have been selected for National Pathology Year in 2012.

National Pathology Year is an opportunity to promote the value of pathology in modern healthcare to as wide an audience as possible as well as helping to highlight the range of careers pathology has to offer. As in previous years, it's hoped that a range of events will be organised reaching a diverse audience; from GCSE and medical students to families and policy makers.

The themes have been designed to help inspire but organisers can hold any type of event on a pathology related topic right through the year.



**January: New Year's Resolutions**

**February: Love Your Heart**

**March: Mothers and Babies**

**April: Parasites and Pathogens**

**May: Healthy Lungs**

**June: 50 Years of Pathology**

**July: Happy Holidays**

**August: Olympic Fever**

**September: Diet and Disease**

**October: Cancer Screening**

**November: Blood Counts**

**December: A Year of Pathology**

Some of the themes tie in with national awareness days, weeks and months – giving the opportunity to work with other organisations such as specialist societies, charities or other medical royal colleges. There are also many national curriculum links, making the topics popular with students and teachers. Each theme comes with its own illustration and with ready-made resources available to download from the website, it's never been easier to hold an event to highlight the importance of pathology. For more information go to [www.ilovepathology.org](http://www.ilovepathology.org) ■



**National Pathology Year 2012**  
[www.ilovepathology.org](http://www.ilovepathology.org)

# National Association of Phlebotomists Working to Improve Phlebotomy



Following last month's article about us here are some further details of the National Association of Phlebotomists to readers of ACB News.

We are a voluntary organisation founded in 1992. We are committed to the sharing of evidence-based practice through the acquisition of knowledge and development of skills that reflect the memberships' needs and promoting professional recognition of the practice of phlebotomy through our established training programmes.

NAP is passionate about the phlebotomy process including communication, controlling pre-analytical variables, patient confidentiality, Health and Safety, and infection control. Best practice in labelling and venepuncture ensures a fit for purpose sample is delivered in a timely manner for analysis.

Poor practice is still evident daily on our wards, in Accident and Emergency Departments, GP practices and via agency staff. This can compromise the results on which patients' treatments are determined. We now have a wide range of evacuated safety equipment at our disposal to ensure we can obtain blood safety whether during a routine venepuncture or while cannulating. Best practice techniques can minimise sample trauma, reduce haemolysis and haemoconcentration, allowing the laboratory to provide accurate results.

NAP is about eradicating poor practice and we work tirelessly with the product companies and the Department of Health to ensure training is disseminated to all health care professionals who collect blood samples. Sadly, until venepuncture is regulated, there will always be those that are professional and those that are not! In the meantime the National Association of Phlebotomists will continue to help train in appropriate phlebotomy techniques. If you would like help in this area then do contact us and visit our website. ■

**Jacqui Hough, Co-President National Association of Phlebotomists**

**Tel: 0208 375 1471 Email: [cathy.w@btinternet.com](mailto:cathy.w@btinternet.com) Website: [www.phlebotomy.com](http://www.phlebotomy.com)**

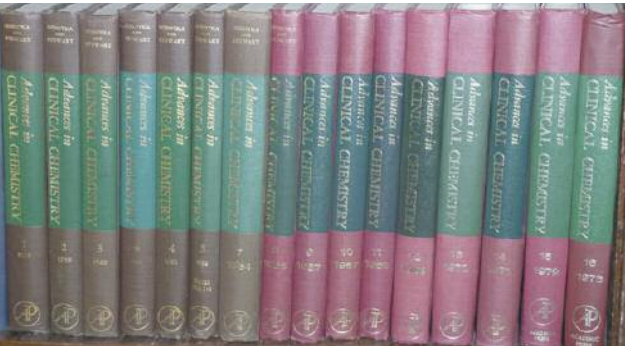
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## Advances in Clinical Chemistry Seeks New Home . . .



Dr John Stewart, who many will remember as the Regional Scientific Officer for the West Midlands Regional Health Authority in the 1980s has on offer Vols 1-14 and Vol 16 of *Advances in Clinical Chemistry*, edited by Sobotka and Stewart and then Bodansky and Stewart and then Bodansky and Latner.

If you are interested in this offer of some clinical biochemistry history then please make contact with John via email (jcs17@btinternet.com).

Volume 15 is being retained by John as it has an obituary to his father who was of course C.P. Stewart the pioneering Edinburgh-based Clinical Biochemist. ■

## MetBioNet FRCPath Success

Last month some key data was not in the article about MetBioNet. The missing data is included in the following paragraph:

“There have been more HST trainees and a curriculum in Paediatric & Metabolic Biochemistry has been created and is on the website. In total there have been 20 HSTs with 4 in post at this time. 14 of these have been successful in gaining FRCPath part 1 or 2. This training builds on the excellent pre-registration training that has long been a feature of Clinical Biochemistry and for which the ACB should be justly proud. Their FRCPath success demonstrates that it is then possible to go on to train in a specialty but still achieve the highest general professional qualification.” ■

## College Clinical Science Committee Chaired by Seneviratne

Congratulations to Jeff Seneviratne who has been asked to chair the Standing Committee for Clinical Science and has also been co-opted to the Executive Committee. ■

## Festive Thanks . . .



At ACB News it is time for a festive wind down after what has been another busy year. As always we say thanks to those that have helped to deliver a monthly topical magazine to ACB Members, also read by the wider pathology community. Sue at PRC has worked hard to ensure our commercial partners make the most of the promotional opportunities that we offer. If you are considering advertising with us next year – from a laboratory or a company – then do contact Sue at email: mail@prcassoc.co.uk

Our editorial team has worked to ensure we get ACB News to you each month on time and with appropriate topical content. In particular, thanks to Barbara in the office and also to Nikki our typesetter. ■

# ACB Membership Awards

# 2012

**Nominations for this year's Awards are invited from Regional Committees, together with a citation of about 500 words, outlining the basis of the nomination.**

The Award must be approved by Council at its meeting in March 2012, and it is important that the Regional representative is able to extol the virtues of the nominee as it is possible that council members may not know some of the activities of nominated individuals.

The three award categories are:

## **Emeritus Member**

Persons who have been Ordinary Members of the Association for at least ten years and have retired from full-time employment and who have made an exceptional contribution to the objects of the Association may, on the recommendation of Council and by a majority of at least two-thirds of those voting at a General Meeting, be elected Emeritus Members of the Association.

## **Fellow**

Persons who have been Ordinary or Affiliate Members of the Association for at least ten preceding consecutive years and have retired from full-time employment may, on the recommendation of Council and by a majority of at least two-thirds of those voting at a General Meeting, be elected to the category of Fellow of the Association. The recipients have made a significant contribution to the profession in one or more of the following areas:

- ◆ Continually led and instigated changes to meet the needs of Clinical Biochemistry and Laboratory Medicine services on behalf of a region or nationally.
- ◆ Developed exceptional educational and/or training facilities for the profession.
- ◆ Led in setting up and developing over a considerable period of time, a well-respected and valued specialised service that had a major impact either within a region or nationally.
- ◆ Raised the profile of the profession over many years, within the lay or clinical community, either regionally or nationally.

## **Honorary Member**

Persons who have made a distinguished contribution to Clinical Biochemistry and Laboratory Medicine at international level may, following the recommendation of Council and by a majority of at least two-thirds of those voting at a General Meeting, be elected Honorary Members of the Association.

If you would like to propose someone then contact your ACB Regional Secretary. Proposals must be supported by the Regional Committee and the nomination submitted through the Regional Committee at the Council meeting in March 2012.

The closing date for nominations received by Council is 3rd February 2012. ■

## Coming Next Year . . .

In 2012 we will continue to report on the many things going on in our environment. There are a number of elements of change that are progressing and next month we take a look at:

### ◆ East SHA

We will review the East SHA tendering process for GP/Community pathology as it heads towards conclusion in April 2012. This high profile pathology transformation is headed by Dr Stephen Dunn at the Midlands and East SHA Strategic Projects Team and includes Hemal Desai, DofH clinical advisor on Pathology. The transformation strategy being used is well worth analysis and understanding as, if successful, it may well be applied elsewhere.

### ◆ Modernising Scientific Careers

We will continue our series looking at new training programmes.



So, in what for many of our readers is a very stressful and uncertain time, ACB News will try even harder next year to offer positive support to help everyone take clinical science forward. ■

[www.cityassays.org.uk](http://www.cityassays.org.uk)

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# What's happening at BIVDA?

Doris-Ann Williams, *BIVDA Chief Executive*

## Doris-Ann looks at recent highlights of BIVDA's work

Visitors to the IBMS Congress in September will have noticed two new faces on the BIVDA stand – Stuart Chisnall and Rachel Myers. This is a result of a review of activity by the BIVDA Executive committee earlier in the summer, when it was determined that a different staffing structure is required to meet the challenges industry is facing in the UK market. Stuart has been employed as Operations Director and in this role he will be membership facing to ensure companies are receiving the information they need and that BIVDA is getting the input to influence policy and inform its stakeholders. Stuart will be well known to many ACB members having come into BIVDA from the industry where he has worked for Phadia and Menarini.

Rachel's job is to provide the administration support to run BIVDA behind the scenes but, although she has never used it professionally, Rachel's degree was in biomedical science so she has an understanding of what the member companies and their customers do. With devolving these roles to Stuart and Rachel this leaves me with time to concentrate on the external face of the Association and to reflect this, my job title has changed to become Chief Executive.

### Revisions to Diagnostics Directorate

BIVDA has a wide ranging remit including provision of export support for UK manufacturers such as at MEDICA each year but its four pillars of activity are on regulation, procurement, raising awareness of diagnostics and membership support. As most of you will be aware there is an ongoing revision of the Medical Device In Vitro Diagnostics Directive which provides the regulatory framework for member states on IVD products in the EU.

There will be a number of changes likely to take place in the revised directive and the draft is expected from the EU Commission in spring 2012. It is anticipated that there will be a change to a rules based system for risk classification and potentially the added requirement for clinical utility and clinical effectiveness in addition to technical specifications for each product. The risk system is likely to require additional input from Notified Bodies which will add extra cost into the production of many IVDs but it also allows new tests and technologies to be appropriately regulated rather than relying on lists of products as the current system does which were current when the original directive was being devised (pre 2003).

The adoption of innovation is another focus for BIVDA, particularly this summer as the work behind the NHS Chief Executive's Innovation Review has been ongoing. This was an initiative required from the Growth Review published in April by the Treasury and is recognition that the NHS is very slow at taking up new technologies and medicines compared to other western countries. The review is due to be published at the end of November and is expected to contain a number of proposals to enable the UK population to see a more rapid adoption of healthcare products which could improve their care.

It is hoped that these adoption solutions will be taken up by procurement mechanisms in turn. Currently the procurement landscape for the industry, and no doubt also for the professions, is somewhat opaque and has been dominated in recent years by the increasing use of Managed Equipment Service contracts of varying size and formats.

### LifeScience UK

Supporting the members requires BIVDA to communicate with a wide number of external organisations and Government departments and this is an important aspect of the Association's work. Over the past three years



*Rachel Myers and Stuart Chisnall of BIVDA with the impressive IBMS exhibition in the background*

this has also included the Office for Life Science (OLS) which the last government formed to support the life science industry sectors within the Department for Business, innovation and Skills (BIS) under the then Minister for Science, Lord Drayson. The present government has retained the OLS although it no longer has its 'own' minister. However, the life science board focused on working with the NHS has continued. This focus on life science has also led to the creation at the beginning of this year of a framework, LifeScience UK, which enables the four industry associations involved to work together as required while retaining their individual agenda and sector-specific activities. These are medical

devices, pharmaceuticals and biotechnology in addition to IVDs.

This joint approach is something which works well for BIVDA in other arenas such as with IVD associations in other parts of the world to share learning and best practice. BIVDA has also enjoyed working as part of the 'pathology community' in the UK especially on the Labs Are Vital initiative which has brought all the professional associations together and provided improved communications. Most recently BIVDA hosted a meeting on the EQA initiative MAPs for industry and professional colleagues which enabled an open dialogue and was an extremely useful forum for both sides. Communication is key to all we do! ■

# Deacon's Challenge

## No 127 - Answer

A patient after returning from holiday presents his GP with a set of laboratory results obtained during a brief hospital admission in the USA. The GP asks you to convert the following data to "SI units" commonly used in the UK:

Plasma glucose = 270 mg/dL

Plasma creatinine = 2.3 mg/dL

Plasma BUN = 50 mg/dL

Urine albumin:creatinine ratio = 40 mg/g

(Molecular weights: glucose = 180, creatinine = 113)

Mass and "SI" units are related by the expression:

$$\text{Concentration (mol/L)} = \frac{\text{Concentration (g/L)}}{\text{MW}}$$

which must be adapted to the particular units being used i.e. if mass units are mg/L then SI units will be mmol/L.

**Glucose:** Mass units = mg/dL. Since SI units are mmol/L the mass units must be multiplied by 10 (to convert from mg/dL to mg/L).

$$\begin{aligned} \text{Therefore, glucose (mmol/L)} &= \frac{\text{glucose (mg/dL)} \times 10}{\text{MW glucose}} \\ &= \frac{270 \times 10}{180} \\ &= 15 \text{ mmol/L} \end{aligned}$$

**Creatinine:** Mass units = mg/dL. Since SI units are  $\mu\text{mol/L}$  the mass units must first be multiplied by 10 (to convert from mg/dL to mg/L) then by 1,000 (to convert from mg/L to  $\mu\text{g/L}$ ).

$$\begin{aligned} \text{Therefore creatinine } (\mu\text{mol/L}) &= \frac{\text{Creatinine (mg/dL)} \times 10 \times 1,000}{\text{MW creatinine}} \\ &= \frac{2.3 \times 10 \times 1,000}{113} \\ &= 204 \mu\text{mol/L} \end{aligned}$$

**BUN:** BUN is blood urea nitrogen. Urea (formula  $\text{CO}(\text{NH}_2)_2$ ) contains 2 atoms of nitrogen (equivalent to one molecule of nitrogen,  $\text{N}_2$ ). Mass units = mg *nitrogen*/dL, required units = mmol *urea*/L. The mass units are first multiplied by 10 (to convert from mg/dL to mg/L) then divided by the molecular weight of  $\text{N}_2$  (i.e.  $2 \times 14$ ):

$$\begin{aligned}
 \text{Urea (mmol/L)} &= \frac{\text{Nitrogen (mg/dL)} \times 10}{2 \times 14} \\
 &= \frac{50 \times 10}{2 \times 14} \\
 &= 17.9 \text{ mmol/L}
 \end{aligned}$$

**Albumin:creatinine ratio:** Mass units = mg/g. In the UK it is common practice to convert the creatinine component to SI units but retain albumin in mass units, expressing the ratio as mg/mmol. The creatinine component is therefore divided by its molecular weight. Since creatinine appears in the denominator this means that the numerator must be multiplied by the molecular weight of creatinine so as to give the ratio in mg/mol. Further division by 1,000 converts this to mg/mmol:

$$\begin{aligned}
 \text{Albumin:creatinine (mg/mmol)} &= \frac{\text{Albumin:creatinine (mg/g)} \times \text{MW creatinine}}{1,000} \\
 &= \frac{40 \times 113}{1,000} \\
 &= 4.5 \text{ mg/mmol}
 \end{aligned}$$

## Question 128

A newly diagnosed epileptic commenced treatment with a daily oral phenytoin dose of 150 mg. After 2 months of treatment his average steady state plasma phenytoin concentration was 4.1 mg/L. Since there had been little clinical improvement the dose was increased to 200 mg per day and after a further 2 month period the new plasma phenytoin concentration was 7.5 mg/L. However, seizure control was still not ideal and the neurologist has asked you to calculate the expected plasma phenytoin concentration if the dose is further increased to 250 mg.

Assume that phenytoin clearance follows saturation kinetics and bioavailability,  $F = 1$ , salt conversion factor,  $S = 0.92$  and the dosing interval,  $\tau = 24\text{h}$ .

# The DEQAS Files

Catherine Treslove, Manchester Royal Infirmary

## The 7th UK Clinical User Meeting held by Waters comprised four sessions focused around steroid hormones, therapeutic drug monitoring (TDM), toxicology and research into new biomarkers of metabolic disorders

Graham Carter started the meeting with his talk titled 'The DEQAS Files'. DEQAS is the Vitamin D External Quality Assessment Scheme, which has been monitoring 25-hydroxyvitamin D (25-OHD) assay performance since 1989. Due to increasing interest in Vitamin D and hence the introduction of 25-OHD assays into many more routine clinical laboratories, the scheme has expanded rapidly over recent years with roughly 1200 participants in 40 countries.

The majority of laboratories use immunoassays to measure 25-OHD, with LC-MS/MS accounting for roughly 11% of 25-OHD analysis. Discrepancies in results from these methods have been well documented over the years, but Graham assured the audience that the overall performance of 25-OHD assays has improved. For example, the introduction of NIST standards has improved the inter-laboratory precision of LC-MS/MS methods. Nevertheless, he did stress that 25-OHD still remains a difficult analyte to measure and highlighted some of the main issues.

Immunoassays are particularly vulnerable to matrix effects and the use of spiked EQA samples D<sub>2</sub> supplements with 25-OHD<sub>2</sub> and 25-OHD<sub>3</sub> has proved unsuitable in the past. Therefore DEQAS samples are generally unadulterated human serum, making them as close to everyday patient samples as possible.

However, most patients in the UK have low 25-OHD<sub>2</sub> levels posing problems for participants who measure 25-OHD<sub>2</sub> and 25-OHD<sub>3</sub> separately. As a result, DEQAS samples are commonly taken from patients on D<sub>2</sub> supplementation, but this creates another problem since some immunoassays can not detect exogenous D<sub>2</sub>. This then raises the question about the validity of using immunoassay analysis to monitor patients on D<sub>2</sub> supplements.

### Vitamin D Standardisation

Although the results of most 25-OHD methods are becoming closer to each other and to the ALTM, large differences between certain methods still exist. To try to overcome this issue DEQAS has commissioned the development of a GC-MS reference method, which will be used to validate the ALTM and assign target values to distributed samples.

### 3-epi-25(OH)D<sub>3</sub>

3-epi-25(OH)D<sub>3</sub> is a biologically inactive analogue of 25-OHD<sub>3</sub>, found especially in young children. While immunoassays do not detect this compound, LC-MS/MS methods will. It is therefore important for all LC-MS/MS methods to resolve this epimer. If not, the detection of this analogue will result in falsely elevated Vitamin D levels, especially in children.

### Salivary Testosterone

Presented by Dr Philip Macdonald, the measurement of salivary testosterone was also discussed during the 'steroid hormone' session. Salivary testosterone is thought to reflect bioactive/free testosterone in the circulation, which is considered to be a better measure of androgenicity than total serum testosterone. However, Phil pointed out that to measure salivary testosterone, instruments with high analytical sensitivity are required, especially to measure in the female range. Wythenshawe Hospital has successfully developed a highly

sensitive method to measure salivary testosterone by LC-MS/MS on the Waters Xevo TQ-S, displaying a LLOQ of 2 pmol/L, enabling the accurate measurement of female samples.

### TDM

The TDM session consisted of two LC-MS/MS method development talks based on the measurement of immunosuppressants from dried blood spots and the quantification of hydroxychloroquine, an anti-malarial drug commonly used to reduce inflammation in the treatment of rheumatoid arthritis and lupus, in whole blood.

### Toxicology

After lunch followed the toxicology session, which was dominated by presentations on the development of LC-MS/MS methods for the determination of Khat use. Khat is a plant native to tropical East Africa and the Arabian Peninsula, which when chewed releases an amphetamine-like stimulant, cathinone, which can be screened for using LC-MS/MS. Although legal in the UK, the number of deaths relating to Khat use is on the rise.

As a result, several hospitals across the UK are under increasing pressure from local drug teams and A&E Departments to screen for this drug. Although both speakers had successfully developed an LC-MS/MS method for the measurement of cathinone and its metabolites, cathinone standards were found to be extremely unstable, even at 4°C. Further work is required to determine the stability of cathinone in patient samples.

### New Biomarkers

Next came the 'new biomarkers' session which was kicked started by Professor Paul

Thornalley with his talk on the use of proteomic damage as clinical diagnostic markers in diabetes and renal failure.

In addition to aging, protein damage is increased in many diseases such as diabetes, renal failure and arthritis. There has been much research over the past decade on relating protein damage to the progression and treatment of these diseases.

Urinary methylglyoxal-derived hydroimidazolone free adducts, MG-H1, a precursor of advanced glycation end-products (AGE) is raised in diabetic patients. Professor Thornalley presented data implying that MG-H1 is more sensitive to short-term fluctuations in plasma glucose than HbA<sub>1c</sub>, prompting him to call urinary MG-H1 "an improved marker of diabetic glycaemic control". In addition, research performed by Professor Thornalley's group at the University of Warwick showed MG-H1 to accumulate in plasma as renal function declines, suggesting MG-H1 to be a promising new marker of renal failure progression.

Finally, Professor Thornalley ended his talk on a slide showing that methionine oxidation, MetSO, free adducts are raised in the plasma and the synovial fluid of patients with osteoarthritis and rheumatoid arthritis. Additionally, in rheumatoid arthritis patients these levels fall upon the commencement of antibody therapy. At present MRI scans, an expensive radiological procedure, are often requested by clinicians to monitor the treatment outcome of these patients, prompting Professor Thornalley to end on the question "Could plasma MetSO be used as a cheaper alternative to monitor the response of patients to antibody therapy?". ■

# Cardiovascular Disease and Current Hot Topics

Erin Mozley, Tracy Keys and Chris Stockdale

## A report of the summer meeting of the ACB South West & Wessex Region held in Bristol

The day began with a talk entitled 'cardiac imaging of plaque disease' by Dr H Mathias from the Bristol Heart Institute. The focus of this talk was the technique of computed tomography (CT) in the diagnosis of coronary artery disease (CAD). It was explained that cardiac CT allows both quantification of calcification within the artery wall (which is thought to correlate with the atherosclerotic plaque burden) and visualisation of non calcified plaques and arterial stenoses. Among the advantages offered by cardiac CT are its high negative predictive value which allows early exclusion of CAD and its ability to identify other causes of chest pain such as aortic dissection, acute pulmonary embolism and acute pericarditis. Cardiac CT however cannot be used to diagnose an acute event, to completely characterise a non calcified plaque nor to diagnose arterial stenosis in the presence of significant calcification. NICE guideline 95 (chest pain of recent onset) was published in 2010 and recommended the use of cardiac CT to assess calcification in patients with both acute and stable chest pain who are determined to have a low probability (10-29%) of CAD.

### High Sensitive Troponin T

Dr Charlotte Dawson (Clinical Biochemistry, University Hospitals Bristol Trust) discussed 'High sensitivity troponin T in the South West one year on'. The South West protocol for use of troponin T (TnT) measurement in diagnosis of myocardial infarction (MI) was introduced. An audit revealed incomplete compliance with

retesting at 12 hours post onset of pain, however the TnT concentrations of the majority of those who were retested at this time point remained in the indeterminate range. These 'indeterminate' TnT concentrations may reflect a non ischaemic cause. Further investigation of these patients may be appropriate since even within the reference range TnT concentrations can be used in stratification of risk of cardiovascular death.

### NICE Guideline for Familial Hypercholesterolaemia

Laura Yarram (Bristol Genetics Laboratory, North Bristol Trust) gave an overview of genetic testing for Familial Hypercholesterolaemia (FH). Genetic testing is recommended by NICE (guideline 71) for patients with a diagnosis of definite or possible FH based on family history and lipid measurements. Laura clearly described the diagnostic testing strategy in place at North Bristol: an initial screen for 20 common pathogenic mutations by ARMS (amplification refractory mutation screening) is followed, if necessary, by full sequencing of the gene encoding the LDL receptor and detection of large scale DNA rearrangements by MLPA (multiplex ligation dependent probe amplification). DNA sequencing may identify mutations whose pathogenicity is unclear. Laura explained that functional studies of these altered proteins are not widely performed and that as an alternative literature searches and bioinformatic tools can aid the classification of these mutations.

### Negative LDL Regulation

The last talk before lunch was also on the topic of FH, entitled 'genotype phenotype correlation in familial hypercholesterolaemia' was delivered by Dr Mathangi Balsubramani

(Clinical Biochemistry, University Hospitals Bristol Trust). Dr Balsubramani mentioned 4 possible ways of assessing the severity of the FH phenotype: atherogenesis, hypercholesterolaemia, the presence of tendon xanthoma and resistance to lipid lowering therapy. In the UK the *PCSK9* p.D374Y mutation appears to cause the severest FH in terms of degree of hypercholesterolaemia and risk of CAD. The product of the *PCSK9* gene is a secreted protein which negatively regulates the LDL receptor, therefore hypercholesterolaemic mutations in this gene are those which increase the activity of the protein. Four families managed in the South West with the *LDLR* p.L479P mutation were presented. This mutation appears to be severe in terms of the levels of hypercholesterolaemia detected in the proband cases. Coexistence of this mutation with another FH causing mutation, *APOB* p.R3527Q, in one individual resulted in a phenotype with even greater severity than that caused by either mutation alone.

### MSC Update

The afternoon commenced with a valuable talk from Mrs Christina Doncom on the current status of the Modernising Scientific Careers (MSC) programme, an important topic that

will affect trainees and trainers alike in the coming years. Important issues regarding the new career structure were clarified and it was emphasised that MSC should help provide a career and education framework that allows management to create a future workforce profile. There are however several questions surrounding this controversial topic that remain unanswered. Christina finished by commending the high standards of this year's applicants to the programme and her high hopes for the future of the profession.

### HbA1c and Diagnosis

Dr Andrew Day followed with an assessment of HbA1c as a diagnostic tool for diabetes. Beginning with a refreshing look at the history of HbA1c followed by a critical discussion of its uses, this animated talk on such a 'hot topic' piqued interest from all. The various advantages of HbA1c were highlighted, such as its minimal intra-individual variability and predictive value for retinopathy; conversely the potential age- and race-related variations and analytical limitations were also acknowledged. Emphasis was put on the use of HbA1c as an indicator of the potential for an individual to develop microvascular and macrovascular damage rather than simply picking up hyperglycaemic individuals. ■



## Dr Patrick O’Gorman . . . Leader and Innovator

I was sad to hear of the recent death of Dr O’Gorman.

It brought back memories of the first time I met him, in the mid 70s, at The Brook Hospital where he was Consultant Chemical Pathologist, and he bravely stuck his neck out and bought the first Vitatron Automated Enzyme Analyser, AKES.

For us, in Fisons, distributors then of Vitatron instruments, it was an important step which led to AKES becoming the market leader for enzyme analysis, for quite some time.

I remember Dr O’Gorman as a jovial and cheerful chap, at ease with colleagues, and outsiders alike, and when, subsequent to this acquisition, I escorted our Divisional Chairman, Ron Bound, on a visit to Brook Hospital to meet Dr O’Gorman and see this new analyser,

he greeted us both warmly and proudly showed us around.

An interesting footnote is that AKES was one of the first, if not the first, analyser to pick up samples and reagents discreetly and place them into a ring of cuvettes which were subsequently washed and dried for reuse, on a continuous basis. A discrete analyser as opposed to the continuous flow analysers which were then in more or less universal use in all hospital Biochemistry laboratories. As we now know, the idea caught on, pioneered in the UK first by Dr O’Gorman. A leader and innovator if ever there was.

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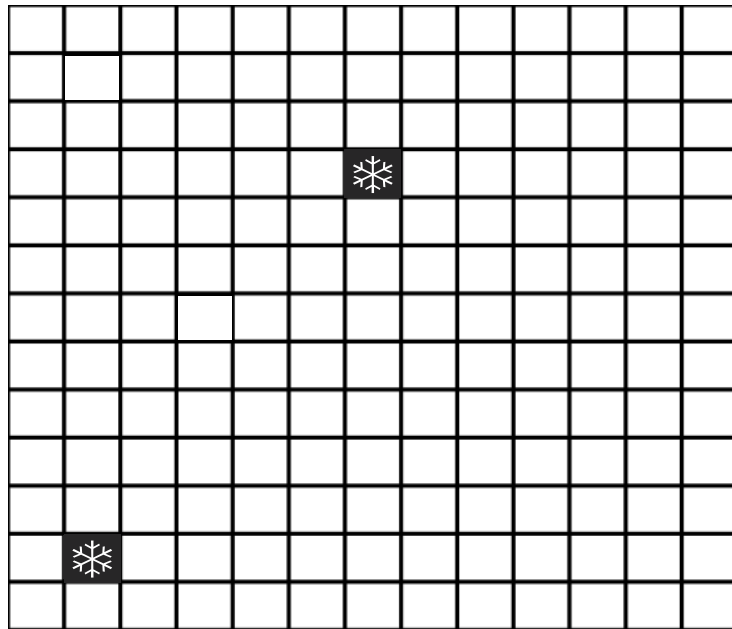
\* see Barlow, Graham & Berg in  
*Annals of Clinical Biochemistry*  
 2010; 47: 408–414



# Another Colley Christmas Quiz

Compiled by Michael Colley, Great Western Hospital, Swindon

Yet again the Michael Colley entertains us with his festive crossword. If you want to scan your answer and whiz it to the Editor by 13th January then as long as it ticks the boxes a prize will come your way. You can scan and email your reply and send to: [barbara@bergfamily.co.uk](mailto:barbara@bergfamily.co.uk) or try your luck with Fax: 0121-507-5290.



The clues are arranged in alphabetical order of their solutions. The grid has rotational symmetry i.e. if the fourth square down in the left hand column is shaded then the fourth square up in the right hand column will likewise be shaded.

- |   |   |
|---|---|
| 1 Had dictionary containing "fanatical devotee" (6)     | 15 Spouse's missing jab at lab organisation (3,3,5)                             |
| 2 Drawing and painting are archaic (3)                  | 16 Pretender with one hesitation for another about Home Counties swellings (11) |
| 3 Bit of a kip is radioactive (2)                       | 17 Half this book (2)   |
| 4 Short worker is one element (2)                       | 18 This thing is, uncertainly, an Acarid (4)                                    |
| 5 Physiological, emotional and intellectual cycles (10) | 19 Bisected executioner gives a blow (2)  |
| 6 Outer shell quickly lost vehicle (3)                  | 20 Short story - about a third of a mile - treatment for mania (2)              |
| 7 Off-hand sort lacking exercise goes to ED (8)         | 21 See work flamed for preading (2)   |
| 8 Could this be mist? (5)                               | 22 Audible tale for base (3)  |
| 9 Ask to bestride tandem and trailer (6)                | 23 Two dances change ends for serpent (5)                                       |
| 10 They're dead ditto events (5)                        | 24 Male and more males take head of organisation (10)                           |
| 11 Element of financially challenged area (2)           | 25 I won't play toxic gas (2)   |
| 12 Increases sheep pens (5)                             | 26 Confused estate without a standard (4)                                       |
| 13 Procure backward sheep (3)                           |   |
| 14 Female organisation embracing maternity is nice (8)  |   |
|   | 27 Scallop menu shows central material (11)                                     |
|   | 28 Interjection of uninitiated discontinuity (3)                                |
|   | 29 Tailless mammal is extreme ... (3)   |
|   | 30 ...nuisance with zero sauce (5)  |
|   | 31 Soft, unwell. Take this (4)  |
|   | 32 Place short radionuclide here (2)  |
|   | 33 Respond to confused vestige (5)  |
|   | 34 Excitable period "in the groove" (3)   |
|   | 35 Sailor could be last (4)   |
|   | 36 Walked path (4)  |
|   | 37 Small interior light metering (3)  |

## Last month's solution



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Specific enquiries may be directed to Professor Ian Morison, Head of Department of Pathology, Tel 64 3 479 7170, Email [ian.morison@otago.ac.nz](mailto:ian.morison@otago.ac.nz)

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