

# Clinical Biochemistry News



ACBI



ACB

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Newsletter of the Association of Clinical Biochemists in Ireland  
and the Association of Clinical Biochemists (Republic of Ireland Region)



**The Geraldine Roberts Medal  
will be awarded for best poster at ACBI 2007**

## Contents

Editor: Martin Healy  
mhealy@stjames.ie  
Assisted by: Sean Maguire  
(Mater Hospital) and  
Eileen Byrne (St. Vincent's University Hospital)

- |  |                                       |
|--|---------------------------------------|
| 2. From the President                                  | 7. Padraig Blake - an Appreciation    |
| 4. Members' Publications<br>Vocational Group News      | 9. In the Literature                  |
| 5. Irish Endocrine Society<br>Report                   | 10. ACB ROI Region Meeting<br>Report  |
| 6. Geraldine Roberts Memorial<br>Medal / Members' News | 11. ACBI Scientific Meeting<br>Report |

## From The President

Dr. Alan Balfe

President of the Association of Clinical Biochemists in Ireland

### Registration and Ethical Behaviour

After quite a long period of discussion, the Health and Social Care Professionals Act was passed by Dáil Éireann at the end of 2005, to provide for State Registration of 12 professions including Clinical Biochemist. The Health and Social Care Professionals Registration Council was established in April this year, and is working actively towards setting up the structures and procedures necessary, including the establishment of a Registration Board for each profession. The Clinical Biochemist representative on the Registration Council is Dr. John O'Mullane, who is also currently Vice-President of the ACBI.

At the recent Scientific Meeting organised by the ACBI in Cork, John outlined the challenges inherent in professional registration. He spoke of the groundwork already done by the ACBI, and the foresight demonstrated in setting up a voluntary register in 1998. One point he wished to highlight is that the primary purpose of registration, over-riding all others, is the protection of the public. In this regard, members of the voluntary General Register of Clinical Biochemists in Ireland are bound by a Code of Ethics. The code is there to guide our behaviour. While all those on the register subscribe to and are bound by the code, it is easy to agree with it, and assume we are abiding by it, but really we must ensure that it informs our actions at all times. Therefore, it should be kept to the forefront in our professional behaviour. We should take it out and read it regularly. To help this process, the code as it appears in the rules of the General Register, is reprinted below.

Alan Balfe

#### 9. Code of Ethics

- 9.1. Admission to the General Register of Clinical Biochemists in Ireland requires academic qualifications and initial training as specified above (5). The candidate must also agree to abide by the following code of ethics which defines an ongoing commitment to continuing education, quality standards, integrity, morality and accountability, and aims to ensure the highest standards, in service to the general public, to clinical colleagues, and to employers.
- 9.2. The safety and well-being of patients will be of primary concern.
- 9.3. The clinical biochemist will apply his or her knowledge of biochemical, molecular, and cellular concepts, and his or her knowledge of and skill in analytical techniques, to the diagnosis, therapy and prevention of disease. This will involve provision of advice on indications for analyses, application of appropriate analytical techniques, reporting results of analyses and provision of interpretative guidance, and participation in applied research projects which are laboratory based and/or involve collaboration with clinical or industry-based colleagues.
- 9.4. The clinical biochemist will accept responsibility appropriate to his or her level of competence; above this level he or she will consult with, collaborate with or refer to appropriate experts.
- 9.5. In order to ensure continuing professional development, competence, knowledge and skill, the clinical biochemist will maintain an awareness of published developments in clinical

biochemistry and medicine, and attend appropriate meetings and training courses and attain a high level of technical skill. He or she will encourage and support such activities by those under his or her supervision. He or she will modify his or her practice to incorporate appropriate developments.

- 9.6.** In providing a service to patients the clinical biochemist will employ only those procedures which conform to acceptable quality standards or whose limitations are known and clearly identified to the recipient of results. He or she will promote participation in internal and external quality control programmes designed to provide quality assurance. He or she will participate in clinical audits, at an appropriate level, to ensure appropriate application and interpretation of his or her work.
- 9.7.** The clinical biochemist will maintain a high standard of professional integrity in performance of his or her duties and in relations with the general public, his or her employer and colleagues; specifically, he or she will operate in an open and accountable manner and avoid deceit, fraud, plagiarism or any form of misrepresentation. He or she will maintain professional independence of the medical product or diagnostics industry by not accepting gifts or hospitality unless these are inexpensive or are relevant to the practice of clinical biochemistry.
- 9.8.** The clinical biochemist will respect the confidentiality of information obtained in the course of his or her work and comply with current legislation. Use of information in applications unrelated to the primary purpose of sample collection must comply with local ethical committee guidelines.

- 9.9.** The clinical biochemist will recognise that sample collection requires the patient's informed consent and that only appropriate and necessary samples should be collected. Local ethics committee guidelines must be followed in using left-over samples for purposes other than that for which the sample was collected.
- 9.10.** The clinical biochemist will take reasonable care for his or her own safety, health and welfare and that of any other person who may be affected by his or her acts or omissions while at work; he or she will support his or her employer in efforts to comply with statutory provisions and co-operate in measures intended to secure safety, health and welfare at work.
- 9.11.** The clinical biochemist will develop and maintain awareness of potential environmental impact of his or her work and will comply with guidelines and statutory requirements for the safe handling and disposal of hazardous or toxic materials.
- 9.12.** The clinical biochemist will display commitment to his or her profession at an appropriate level by participating in the activities of his or her association and by contributing to the training of others.
- 9.13.** The clinical biochemist will undertake the duties assigned to him or her by his or her employer in an efficient manner with regard to the primary goal of optimising patient care.

## Members' Publications

**O'Keane MP, Cunningham SK.** Evaluation of three different specimen types (serum, plasma lithium heparin, and serum gel separator) for analysis of certain analytes: clinical significance of differences and efficiency in use. Clin Chem Lab Med. 2006;44(5):662-8.

Walsh T, **O'Broin S**, Cooley S et al. Maternal folate status and neural tube defects in Ireland: the need for a national food fortification program. Ir Med J. 2007 May;100(5):469-72.

Welzel TM, Katki HA, Sakodi LC, Evans AA, London WT, Chen G, **O'Broin S**, Shan FM, Lin WY, McGlynn KA. Blood folate levels and risk of liver damage and hepatocellular carcinoma in a prospective high-risk cohort. Cancer Epidemiol Biomarkers Prev. 2007 Jun;16(6):1279-82.

**Smith TP**, Kavanagh L, Healy ML, McKenna TJ. Technology insight: measuring prolactin in clinical samples. Nat Clin Pract Endocrinol Metab. 2007 Mar;3(3):279-89. Review.

**Duffy MJ**, van Dalen A, Haglund C et al. Tumour markers in colorectal cancer: European Group on Tumour Markers (EGTM) guidelines for clinical use. Eur J Cancer. 2007 Jun;43(9):1348-60. Review.

## Vocational Group News

Below is a brief summary on the activities of the Biochemists Vocational Group of IMPACT throughout the year. In general it has been a relatively quiet one after the previous busy year when we were involved in the Benchmarking and the upgrading process. Thankfully the majority of the upgradings have been implemented and we congratulate everyone who was successful. We would also like to thank all of those who participated in the Benchmarking process. The Benchmarking Process was due to be completed and reported on by late 2007.

At present we are still awaiting the publication of the Pathology Service Review by the HSE, the publication of which is being constantly delayed. During the summer members of the Vocational Group and an Impact official have met with the MLSA and a SIPTU official to discuss a joint strategy and approach to the Pathology Service Review. This meeting was very welcome and worthwhile and hopefully we will work together to deal with issues arising from this review which both professions have concerns with. As we all know parts of the Review have been leaked to the National press but Impact will reserve comment until it has been officially published.

We are also aware that the funding for our trainee Biochemists has run out and the ACBI and ourselves are in the process of writing to the DoHC for the continuation of this funding. We recognise that this funding is of paramount importance for the development of our career structure and to provide the appropriate postgraduate training for biochemists.

Negotiations have not commenced with Impact with regard to the 'Extended Working Day'. Kevin Callinan will keep us informed of any developments.

Finally we would like to acknowledge the work done by Kevin Callinan and Eamonn Donnelly. They are always there to give us their valuable advice and help and to negotiate difficult situations on our behalf. Also I would like to thank the members of the BVG Committee who give their time voluntarily in order to help our members.

**Geraldine Collier - Chair Biochemists Vocational Group**

Ruth O'Kelly,  
Principal  
Biochemist, Coombe  
Hospital Dublin  
reports on The 13<sup>th</sup>  
Joint Irish  
Endocrine Society /  
Royal College of  
Physicians of Ireland  
Education Study Day

## 13th Joint Irish Endocrine Society / Royal College of Physicians of Ireland Education Study Day

The 13<sup>th</sup> Joint Irish Endocrine Society / Royal College of Physicians of Ireland Education Study Day was held in the magnificent premises of the latter on Kildare Street, on Friday 2<sup>nd</sup> February 2007. An excellent programme was introduced and chaired by the President of the Irish Endocrine Society Dr Patrick Bell and the meeting was very well attended.

### Investigation of Hypertension.

A comprehensive and clear presentation was given on the topic of "Investigation of Hypertension" by Dr Paul Padfield, Consultant Physician, Lothian University Hospitals. The European Society for Hypertension Guidelines 2003 were discussed. Dr Padfield particularly looked at Renal Artery Stenosis and endocrine causes, such as hyperaldosteronism. He discussed when to suspect Renal Artery Stenosis and how to screen for it using imaging techniques. The differences between Adrenal Hyperplasia and Primary Aldosteronism were described and the problem of using the aldosterone / renin ratio, particularly when renin levels were low, was discussed.

### Management of Hyperlipidaemia

Dr Ian Young, Professor of Medicine, Queens University and Royal Victoria Hospital, Belfast gave an excellent presentation on "Management of Hyperlipidaemia". The high levels of cholesterol in adults compared to neonates, other mammals, and hunter-gatherer communities, not prone to cardiovascular disease, was emphasised. The new targets were discussed and varying treatments available to achieve these were described. Total cholesterol targets are now as low as 4.0mmol/L in high-risk groups. Dr Young described the various clinical trials that have been undertaken in this area such as the PROVE-It study. He described the usefulness of diet, such as the Portfolio diet, to modify cholesterol but noted that these studies have generally taken place in institutions, allowing greater regulation. The effect of varying statins and the role of ezetimibe were discussed.

### Management of Adrenal Tumours

The Niall O'Meara Memorial Lecture was given by Dr Wiebke Arlt, Professor of Medicine at University of Birmingham on the topic of "Management of Adrenal Tumours". This was an excellent presentation on the management of both incidentalomas and the rare but devastating adrenocortical carcinoma. Adrenal tumours are among the most frequent tumours affecting 2% of the population. The increasing incidence is partly due to increased use of imaging techniques. Most of these tumours are endocrine – inactive. The investigation of these tumours was described using a combination of biochemistry tests and imaging techniques. One new method for scanning involves the use of 123I metomidate scintigraphy, which is specific for adrenal cells.

After a delicious lunch and an opportunity to catch up with colleagues, the afternoon session – Diabetes Update session, chaired again by Dr Patrick Bell, commenced.

Cont'd on page 6

*"....A varied  
and well  
presented  
programme ...."*

**Inpatient Diabetes services and excess diabetes bed occupancy.**

Dr Mike Sampson, Consultant Endocrinologist, Norfolk and Norwich University Hospital, gave a comprehensive overview of the effect of diabetes on excess bed occupancy. He showed that diabetes can affect the length of hospital stay particularly in younger patients but that this can be reduced where diabetic inpatient specialist nurses are employed. His surveys showed that many diabetic patients or those with symptoms suggesting diabetes often do not come to the attention of the diabetic team during their admission.

**Hyperglycaemia in CCU**

Dr Diarmuid Smith gave a excellent presentation on the management of hyperglycaemia in the Coronary Care Unit following the Digami studies. These studies from Sweden had suggested that patients with hyperglycaemia who were managed with insulin both in-hospital and after discharge for up to 3 months did better. The Digami 2 trial was a multi-centre prospective randomised controlled trial looking at patients with MI and Type 2 DM. The definition of hyperglycaemia was also discussed. Most treatments aim to keep glucose < 10mmol/L but intensive treatment to keep glucose < 8mmol/L may reduce mortality.

**Skills v. Technology in the management of diabetes**

Dr Simon Heller, Consultant Endocrinologist, Sheffield NHS Trust, went head to head with Dr John Nolan, Consultant Endocrinologist, St James's Hospital on the topic of structured patient education v. insulin pump in the management of diabetic patients. Dr Heller proposed that patient education was the key to good management and that this had worked well in Germany. This system is called DAFNE (Dose Adjustment For Normal Eating) and resulted in an improved quality of life for patients. However the improvement in HbA1C levels was small. Dr Nolan mentioned that most diabetologists who were diabetic used pumps to manage their diabetes. The pump advantages include the ability to vary the basal level and the need for only one injection site. Both speakers provided convincing arguments for their points of view and this lively discussion was an excellent end to a varied and well-presented programme.

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**Members' News****Congratulations to:**

**Ruth O'Kelly, Coombe Hospital, Dublin, and Dr Ophelia Blake, St. James's Hospital, Dublin. Both were recently appointed to Principal Biochemist Posts.**

This year, at ACBI 2007, the Geraldine Roberts memorial medal will be presented to the best poster at the meeting. The choice of best poster will be chosen from three finalists who will be asked to make a short Powerpoint presentation of their work. Three judges will pick the winner. This is the first time the medal has been awarded and is a fitting tribute to Geraldine who had many friends and associates throughout the island of Ireland.

## Padraig Blake - An Appreciation

*Principal Biochemist, Beaumont Hospital, Dublin.  
Died April 27th 2007*



**This wonderful tribute was given at Padraig's funeral mass by his friend and colleague Brian Hogan.**

If someone, when asked to describe Padraig, said he was a small man, how mistaken, how inappropriate, how false that impression would be. For in every aspect of his life, other than in stature, Dr. Padraig Blake was a giant of a man.

Those of us who worked with him, and there are many here today, will testify to his expertise in his discipline, his diligence and conscientiousness in his working life, his fairness and benevolence in dealing with his staff when he was Principal Biochemist and his integrity in handling the patients' specimens that were entrusted to his care. He was very aware that at the end of every test result was not only a waiting clinician, but more importantly a sick patient and his or her anxious family. Consequently, he would not let a result leave his laboratory until he was satisfied that it was an accurate and valid analysis. And this level of diligence and attention to detail was evident throughout his life: from the time he graduated from UCD, to reading for his PhD in Trinity, his research in Oxford, his setting up of the Endocrine Laboratory in the Richmond Hospital, the planning for its transfer to Beaumont Hospital and its subsequent modernisation. His thoroughness on Hospital Committees and his long service to his profession

in the ACBI bore the hallmark of his organisation skills. He embraced new technology enthusiastically and became an expert in the workings and uses of computer when, as somebody said to me today, you nearly had to put petrol in them. In those early days everyone sought his advice on which model to buy and what problems might crop up and he was always ready and available to help.

These attributes extended even to his hobbies, astronomy, classical music and, of course, computers where he was meticulous in cataloguing and filing items of interest. For many years we shared cars going to and from work and on those journeys we had great fun in solving the problems of the hospital, the country and even the world. Luckily we were only in a car and nobody else could hear us. However, it was on those journeys that I discovered his great love and depth of knowledge about the firmament. I was fascinated when he would explain where the planets were in the sky, what black holes or quasars were or what comet was heading our way, sometimes very close. One day he told me one was only a hundred million miles or so away. He was a mine of knowledge. I don't think he found my conversation as stimulating or interesting. Albeit he sometimes laughed at my jokes but I often looked over when I was driving and talking only to find him fast asleep. But they were times we enjoyed and cherished.

However, he reserved his greatest love for the things which he cherished most of all: his devoted wife, Marie, and his loving children, Paul, Colm and Niamh. He met Marie in 1963, they married 1967 and they were about to celebrate their fortieth anniversary this year. However, they did not need a special year to celebrate their marriage: their whole life together was a celebration. From the time they met he devoted his life to Marie. Marie told me, on the day that Padraig died, that everything he did, he did for her. I remember when we drove home together he would rush to be home first so he could have the dinner ready for Marie. He did the supermarket shopping on Saturday morning. He made the lunch on Sundays. Frequently, the consuming odour in the car was from weekly produce that Padraig would have bought in the Fruit and Vegetable Market near the Richmond Hospital. On other occasions the aroma was from the bouquets of flowers he regularly bought for Marie, whether it was a special occasion or not. He was a giant of a husband. I was often afraid to tell my wife all he did, in case I, a lesser mortal, would be expected to do the same. And when the children came along they lived for them and never stopped planning and looking out for them. He often told me how they agonised over

Cont'd on page 8

the choice of schools they should go to, or how best to plan for examinations or how to fill out the CAO forms or how to prepare for interviews. Niamh, who was very special to him, told me that he was always there for them, come what may, and that he delighted in their successes. When Padraig wasn't well and I drove him to the hospital the first thing he wanted to tell me when he got into the car was that Niamh just got engaged. He got so much pleasure and joy from that. When the children were qualified Marie and he were free to regularly attend plays and classical concerts in the National Concert Hall and elsewhere.

I often envied the most interesting and unique holidays they planned in out-of-the-way places. He was an expert in advanced and long-term holiday planning. Before they married in 1967 Padraig promised Marie he would bring her to see the last full eclipse of the twentieth century from the most advantageous viewpoint in Europe. How romantic was that? However, what he could not plan for was the bigger picture. For in that year he contracted the illness which eventually shortened his life. The intensive treatment regimen he had to undergo meant that the holiday he had planned and talked about for over thirty years would have to be cancelled. However, his colleagues knew how much this adventure meant to him. They got together and secretly planned the trip for Padraig and Marie. His consultant agreed to delay his treatment for a few days and off they flew to a hotel in Munich Airport only to find that a thick blanket of cloud had descended over the area and he had to view it on the television, just as we had to do back in Dublin. The disappointment, however, of not seeing the eclipse live, was far outweighed by the realisation that he was held in such high esteem by his colleagues and I have no doubt that this gesture was of enormous benefit to him in overcoming the debilitating effects of his treatment leading to his initial remission.

Two other scientific journeys which he thoroughly enjoyed involved his two sons. He could not believe that when Colm went to work in Florida he settled in Cape Canaveral. When he went to visit Colm a trip was organised to view the Kennedy Space Centre. He thought he was in heaven and he had to be dragged home at closing time. I am sure he would not have hesitated if had been invited to board a space ship to view the stars close up. More recently, Paul organised a trip for him to visit Down House in Kent, the home of Charles Darwin. For a scientist days like these don't come much better. These were days to remember and cherish.

Padraig was quite a private man, a thorough gentleman, very abstemious in his habits and with all his talents never pushed himself forward or sought to use his status to influence his medical care or to move him up the appointment list. He never used bad language nor ever spoke ill of others. What a lovely legacy to leave behind?

He, Marie and the family were very appreciative of the care given to him by his consultant, the doctors and nursing staff of Beaumont Hospital and, in particular, the staff of the Colman Byrnes Unit but because of the ravages of his illness the last few years were particularly tough and I do not think he would have been able to carry on without the love and total care that Marie showered on him at home and, indeed, Niamh, who was always close at hand. The void that that he leaves within the family will never be filled but there must also be great consolation and satisfaction in knowing that everything they could humanly do for Padraig was done. He will be sadly missed as a giant of a husband and as a towering father. One thing for sure: his size never held him back. He is now in Heaven reaping his reward. His pain is over and he is seeing the wonders of the universe from a different perspective.

What more could we ask for him?

-Brian Hogan

## Richard McCorry

Richard (Dick) McCorry, a prominent Chemical Pathologist in Northern Ireland, died on May 11th 2007. He was instrumental in setting up training schemes for chemical pathologists in Northern Ireland and, together with Russell Doggart, ran the training programme for chemical pathologists and clinical scientists from the Ulster Hospital. He was involved in a 20-year campaign for a Chair of Clinical Biochemistry in Queen's and started a long campaign which obtained chemical pathologist / consultant biochemist posts in every Northern Ireland health board area. He was an invited lecturer at the ACBI Annual Conference and was widely respected for his contribution to education and training of practitioners of Clinical Biochemistry in the North.

## In the literature

NACB Writing Group et al. National Academy of Clinical Biochemistry Laboratory Medicine Practice Guidelines: Clinical Characteristics and Utilization of Biochemical Markers in Acute Coronary Syndromes. Clin Chem 2007 April;53 (4):552-74  
- Martin Healy

Simultaneously published in part in Clinical Chemistry and Circulation, and the culmination of more than 3 years work, these guidelines represent the current view on the use of cardiac markers in the diagnosis of acute coronary syndrome (ACS). The full report is published by the National Academy of Clinical Biochemistry and Laboratory Medicine (NACB) and can be read in its entirety (69 pages) at <http://www.aacc.org/NR/rdonlyres/96031411-71CD-4665-BFF8-31A0632DDB7A/0/NACBACS.pdf>

To reduce mortality associated with MI early diagnosis is the key and as one of the authors of the guidelines states “the three most important things to remember about the updated guidelines are troponin, troponin and troponin.” The recognition of troponin as the definitive marker of myocardial cell death has revolutionised care of patients with ACS and all major cardiology associations now place troponin at the centre of the definition of MI.

Recent years have seen an explosion in published studies on the usefulness of troponin as a marker of MI. The updated NACB guidelines represent a ‘drawing together’ of research findings with a view to improving the clinical utility of troponin. As part of its remit the NACB in association with the International Federation of Clinical Chemistry examined analytical issues concerning troponin testing. Among the recommendations were that one decision limit, the 99th percentile, be chosen as the optimum cut-off for cardiac troponin I (cTnI), cardiac troponin T (cTnT), and CK-MB mass. ACS patients with cTnI and cTnT results above the decision limit should be labeled as having myocardial injury and a high-risk profile. This will result in more patients being seen with positive troponin results but does not necessarily mean that an MI has occurred. Other causes of a raised troponin, such as congestive heart failure, viral infections, chemotherapy agents etc should be investigated.

The issue of turnaround time is also addressed. The authors recommend a maximum turnaround of 60 minutes although they recognise that this is aspirational in many cases. In fact in a study of 159 hospitals in North America fewer than 25% were able to meet this turnaround, defined as order-to-report time. One solution, they suggest, is point of care testing (POCT) for troponin. However, while achieving rapid turnaround, there are problems inherent in POCT. For example central lab and POC assays are not calibrated with the same reference material so comparison of results from different manufacturers may not be possible. The guidelines call on manufacturers to work towards standardisation and to ensure that determination of detection limits, functional sensitivity and total imprecision be traceable to a recognised standard (the Clinical and Laboratory Standards Institute in the case of the US).

The guidelines committee also examined the utility of other markers. Use of AST, total LDH and LDH isoenzymes are not recommended for evaluation of cardiac injury and detection of myocardial infarction (MI). CK-MB is no longer the gold standard. However, the committee found that, in the absence of troponin, the mass assay was an acceptable alternative. The search for a marker of myocardial ischaemia in the absence of necrosis (where troponin concentrations may be undetectable) has settled on ischaemia-modified albumin (IMA). Studies are ongoing into the clinical validity of this marker. One problem is that because IMA concentrations drop within 6-12 hours post ischaemic event late presentation of a patient diminishes the negative predictive value of the test. The guidelines panel also examined a multimarker approach to detecting MI. About 25 possibilities are discussed. These may be beneficial in symptomatic patients with troponins below the critical limit. Many of these assays, however, have not been sufficiently evaluated and have not received FDA or EU approval.

## ACB ROI Region

## Report of Scientific Meeting

By Ger Collier Chairperson ACB ROI Region

The AGM of the Association of the ACB Republic of Ireland Region was held on the evening of the 28<sup>th</sup> August in St. Vincent's University Hospital. This year we decided to change the format and invite 3 of our members to present their ongoing work in Laboratory Medicine. The format worked very well and resulted in an extremely interesting, stimulating and interactive meeting.

Paula O'Shea, Principal Biochemist in Beaumont Hospital, gave a very thought provoking presentation on the physiology of human Growth Hormone (hGH) and the analytical issues involved in its measurement.

Growth Hormone has a four helical structure and its major isoform has a molecular weight of 22kDa.

It promotes linear growth mediated through the action of IGFI and IGFII and GH has a direct effect on tissues - increasing protein synthesis and free fatty acid release and decreasing carbohydrate utilization.

The secretion of GH from the pituitary is pulsatile. 70 % of it is secreted nocturnally and, because of this, a single GH measurement is of very little diagnostic value.

Paula then gave a comprehensive explanation of the issues involved in the standardisation of immunoassays and how laboratories should work towards harmonisation of all immunoassay results.

Paula summarised the issues surrounding the analysis of hGH over the last 20 years and showed

that the GCV's in 2005 are the same as they were in 1984! Paula explained that the lack of laboratory agreement is multifactorial – poor calibration, imprecision, antibody specificity, molecular heterogeneity, and assay design. The NIBSC (2000) stated that the rDNA derived hGH (IS 98/574) should replace the current pituitary standard hGH (IS 80/505) and hGH should be expressed as mass units. There are also other isoforms of GH e.g. 20 kDa. It is desirable that cross reactivity of the assays with other isoforms and antibody specificity is known.

In 2007 a consensus statement on the standardisation of growth hormone assay was released. Poor standardisation was acknowledged as contributing to discrepancies between GH results.

Paula emphasised that we should work with the manufacturers on these issues and encourage them to calibrate their GH assays in terms of IS98/574 and to report results in mg/L. Discrepancies in results can have serious implications for the management of patients with GH related disorders.

The second speaker, Orla Maguire, Principal Biochemist in St. Vincent's Hospital, presented her work on the 'Evaluation of Albumin Cobalt Binding (ACB) Assay for the measurement of Ischaemia Modified Albumin (IMA). In the presence of Ischaemia structural changes occur to the amino terminal end of albumin which results in its reduced ability to bind cobalt. This is a reversible trait and

albumin normalises 6-hrs post event. IMA could possibly be used as a biomarker to differentiate myocardial ischaemia from non-cardiac causes of chest pain. It is the 1<sup>st</sup> biomarker to be approved by the FDA for use in ruling out ACS in conjunction with troponin and ECG testing. Orla evaluated the ACB Assay for imprecision, accuracy and stability. She also established a reference range in 81 healthy subjects and studied the relationship between albumin and IMA.

ACB assay had acceptable imprecision at different levels of analyte. Stability was poor at 4°C, increasing by 10% between 5 and 24 hrs. The Reference Range is 82-110KU/L (no gender or age difference) and this differed from the manufacturer's upper range of 85 KU/L. An inverse relationship was found between total albumin and IMA. Orla devised a formula to correct IMA for albumin:  $cIMA = mIMA - \{(44 - ALB) \times 2\}$ . If IMA is not corrected, this could result in falsely elevated levels. Orla mentioned a few concerns regarding the measurement of IMA – mainly the use of EDTA as a calibrant. The clinical utility of IMA as a marker for myocardial ischaemia still has to be evaluated.

The last speaker, Dr. Martin Healy, Principal Biochemist in St. James's Hospital, presented an interesting and informative talk on PTH as a treatment of severe osteoporosis. Martin talked about the epidemiology of osteoporosis and how life expectancy for females has

Cont'd on page 11

increased from 40 years in 1850 to over 80 in 2007. As a middle aged woman I welcome this statistic but as Martin pointed out it comes with a downside – in Ireland 280,000 women have osteoporosis. This is costing the exchequer €412 million a year in care with a predicted increase to €533m by 2010. Every 30 seconds in the EU a fracture occurs due to osteoporosis. Why has this happened and what are the treatments for osteoporosis? Women are now living nearly one half of their lives post menopause and as humans we are no longer ‘hunter gatherers’ but have sedentary life styles. Martin discussed the treatments for osteoporosis – Calcium, Vitamin D, Calcitonin, Bisphosphonates, SERMs, Strontium, and 1-34rPTH (Teriparatide). Chronic exposure to PTH causes bone loss whereas intermittent exposure causes bone gain. The mechanism, explained Martin, was “a riddle wrapped in a mystery inside an enigma”! Teriparatide treatment results in the formation of new bone and a reduction in fracture risk but it is very expensive and, in trials a very small number of rats developed osteosarcoma after receiving megadoses of the drug. This has resulted in the treatment being given a ‘black box’ warning with a maximum allowable treatment time of 18 months. Its use is indicated in severely osteoporotic postmenopausal women with normal renal and liver function and contraindicated in women with Paget’s disease or bone cancer. Monitoring

Teriparatide treatment was achieved using bone markers, particularly PINP, a bone formation marker. This marker increased by 286% after 3 months therapy and bone mineral density increased on average 12% over 18 months. Martin ended his talk with this photo. The text reads ‘Age is a question of mind over matter. If you don’t mind, it doesn’t matter.’



I would like to thank all our presenters for an extremely interesting meeting and also all the members of the committee of the ACB Region for their work throughout the year. In particular to those who travel to the various meetings in the UK and keep us informed of all activities in the other regions. I especially want to thank Orla Maguire who has retired from being an excellent representative of this Region on ACB Council.

## ACBI Scientific Meeting, Kingsley Hotel, Cork

Reported by Ruth O’Kelly and Paula O’Shea, ACBI Scientific Committee

An excellent scientific meeting was held in Cork on Friday 28<sup>th</sup> September 2007 hosted by local members of the Association of Clinical Biochemists in Ireland. The venue was the luxurious Kingsley Hotel situated on the river’s edge. There was a varied programme with local and UK speakers and the meeting was well attended with delegates from all four corners of Ireland.

Dr Alan Balfe, President ACBI, made the opening remarks, and the morning session was chaired by Dr Maria Fitzgibbon, UCH Galway.

The first speaker was Dr Joe Eustace (CUH), who presented on the management of renal bone disease and the effect of chronic kidney disease on the musculoskeletal system, and how renal osteodystrophies can be classified into low and high bone turnover states. Analytical issues of PTH measurement, in particular, whole versus intact PTH assays were considered. The impact of these issues in terms of the K/DOQI target guidelines for PTH in the management of CKD patients and the financial implications on the health service were examined. Cardiovascular mortality in CKD and the pathogenesis of arterial calcification in secondary hyperparathyroidism together with new therapeutic strategies including phosphate binders, calcimimetics and selective Vitamin D activators were discussed.

Dr Aubrey Blumsohn from Sheffield presented on the topic of bone biomarkers. He explained that the main use of bone marker measurement was in monitoring therapy and to assess patient compliance rather

Dr Aubrey Blumsohn from Sheffield presented on the topic of bone biomarkers. He explained that the main use of bone marker measurement was in monitoring therapy and to assess patient compliance rather than fracture risk assessment. Therapeutic strategies for osteoporosis include anti-resorptive agents such as bisphosphonates and anabolic agents such as PTH. He emphasised the myriad of pre-analytical factors that affect bone markers particularly diurnal variation and food intake

Ethics in scientific research was then debated against the backdrop of Dr Blumsohn's own experience of collaboration with industry.

Dr Damian Griffin of UCH, Galway, presented a case history of a woman with low serum cholesterol who was also found to be deficient in Vitamin A resulting in night-blindness. A comprehensive survey of conditions in which low cholesterol is associated was discussed and the role of CRP and total lipid measurement in the interpretation of fat-soluble vitamin concentrations was emphasised.

Prof Chris Packard from Glasgow presented on biomarkers of cardiovascular disease. New markers for cardiovascular risk - small dense LDL, oxidized LDL and Lp-PLA2 (platelet activating factor acetylhydrolase) as well as under-utilised markers such as Apo B and CRP were considered. The use of ALT (euphemistically, Tool Shed Biochemistry!) in predicting Type 2 diabetes with the outcome measures of carotid intimal medial thickness and vascular calcification was examined.

After a scrumptious lunch, the afternoon session was chaired by Ms Caroline Joyce, CUH.

The first speaker was Dr John O'Mullane, CUH who discussed the challenges of professional registration. The role of the Health and Social Care Professions Council (HSCPC), registration of the Biochemist profession to include a higher specialist register and the profession's code of ethics prepared by the ACBI was explained. The European dimension and EC4 registration, the purpose of which is:-

- to collate information about the different systems of education and training in Clinical Chemistry in the member states of the European Union
  - to establish minimum requirements for the education and training of Clinical Chemists in the European Union
  - continuous updating of the quality of Clinical Chemistry and its practitioners in the European Union
  - to facilitate communication between bodies and individuals that practice Clinical Chemistry in the European Union
  - to introduce a title (European Clinical Chemist) that will assist the free movement of Clinical Chemists within the European Union
- Finally, the need for Continuing Professional Development as a prerequisite for registration was emphasised, as indeed was adequate resources to facilitate and support this process.

Dr Tracey Cooper of Health Information and Quality Authority (HIQA) introduced the concepts behind the newly established independent body HIQA. She described its main function of setting standards and monitoring quality. A discussion followed on protection of whistle blowers using the process of protective disclosure. She informed the meeting that Irish Hospital Accreditation Board (IHAB) now comes under auspices of HIQA. She intimated that licensing of laboratories is planned and when introduced will cover both public and private laboratories.

The meeting ended with Dr Mike Ryan, Antrim, presenting on his experience of an approach to manage the workload of the biochemistry department. He described the use of laboratory information systems to prevent test analysis where the request does not meet the minimum re-testing interval (MRI). He felt that "Lab Tests" were viewed by many as "free Goods" and that they were perceived as having no cost. He made the analogy with Radiology Departments and the stringent criteria used in this setting for diagnostics. He stressed the importance of getting agreement from the requesting clinicians and showed how a reduction in workload is possible. The process was reviewed at the end of a year using the criteria of negative feedback, continuous education and % reduction in workloads. One of the difficulties in auditing the process was the fact that no measure of the tests not requested could be made and also the number of repeat testing initiated by laboratory personnel. Also the test request pattern was changing as a result of the movement of patients to primary care. Overall the reduction in workload using this strategy was 2% - and these monies were then be used to drive new tests, BNP. This strategy is to be extended to other laboratories - microbiology, haematology etc. He envisages that further improvements can be made through workload modifications and control using evidence based practice.