The Institute of Biomedical Science
IBMS CONGRESS 2017
24-27 SEPT - BIRMINGHAM, UK

Viapath presentations at the Institute of Biomedical Science's Congress

LECTURES

Sunday, September 24th: Quality Management

How to be a successful Quality Manager

Fiona Denham, Quality Manager Tissue Sciences

Quality management is central in delivering safe, effective laboratory services, but how do you get the message across to overworked, understaffed laboratory teams that it is not a 'box-ticking' exercise; that robust quality management will make their lives easier rather than more complicated. This is the job of the quality manager, and you cannot be successful in a quality manager role unless you achieve this. This presentation will look at how to get this message across, as well as the role of the quality manager in general, based on the speaker's personal experience.

Monday, September 25th: Opening Plenary Session

Transformation and Consolidation: a partnership model

Professor Jonathan Edgeworth, Medical Director

Providing a pathology service presents many challenges as well as key opportunities; these will be discussed within the context of Viapath's changing environment.

Monday, September 25th: Hall 4 Scientific Programme

Working in partnership to deliver a pathology service to the new Cancer Centre at Guys Hospital

David Wells, Director of Operations - Reference Services

Monday, September 25th: Clinical Chemistry

Screening and Diagnosis of Inherited Metabolic Disorders

Erin Mozley, Biochemical Sciences

Inherited Metabolic Disorders (IMDs) are an expansive heterogeneous collection of diseases caused by genetic mutations affecting an enzyme, transporter or other protein involved in a metabolic process. Three of the core biochemical tests for screening of IMDs in patients are urine organic acids, plasma amino acids and bloodspot or plasma acylcarnitines. The analytical, interpretative and clinical aspects of these assays will be discussed, as well as an insight into the vast number of more specialised tests that are available to help diagnose and monitor IMDs. In newborns, a national screening programme uses bloodspots to enable early diagnosis, and therefore earlier treatment, of six inherited metabolic disorders. These disorders will be discussed

in more detail, as well as tandem mass spectrometry, the powerful technique used across the world to screen for IMDs in newborns.

Tuesday, September 26th: Clinical Chemistry

How to Validate Real-Time PCRs

Dr Melvyn Smith, Virology Department

The real-time polymerase chain reaction is one of the core technologies in the diagnosis of infectious diseases. The early stages in the development of the technique were followed by a dramatic increase in the number of diagnostic assays being published, followed by the introduction of commercially produced tests. In this presentation some of recent work covering verification and validation methodology will be presented, together with the impact of ISO15189 and UKAS inspections on the process, to provide a practical and standardised experimental approach.

Tuesday, September 26th: Cellular Pathology

A comparison of BRAF V600E immunohistochemistry and molecular screening in 71 cases of malignant melanoma

Karolina Wojcik, Dermatopathology Laboratory

The BRAF mutation activates the protein and the downstream Map Kinase (MAPK) signalling pathway, this promotes proliferation of tumour cells and subsequent spread. Here we report the use of a monoclonal antibody BRAF V600E (Roche Diagnostics) which detects the main BRAF mutation in metastatic malignant melanoma (MM) in 71 patients in comparison to the existing molecular assay.

New embedding and staining systems PrestoCHILL and Presto stainer for evaluation of cryostat tissue in Mohs micrographic surgery: A step forward for automation in frozen section analysis.

Cristina D'amico, Dermatopathology Laboratory

Mohs micrographic surgery (MMS) conventionally involves the evaluation of frozen histological tissue sections to determine complete circumferential and deep tissue margin clearance of cutaneous skin tumours. In the large majority of cases these tumours are basal cell carcinomas (BCC's), the most common form of skin cancer. PrestoCHILL and Presto stainer devices are two new innovative tools which bring benefits of automation, speed and efficiency for the preparation of histological frozen section analysis in Mohs procedures. The devices were assessed at Viapath's Tissue Science Mohs laboratory, St. John's Institute of Dermatology at Guy's Cancer Centre.

Haematoxylin - the story of the blues!

Dr Guy Orchard, Dermatopathology Laboratory

Despite the advent of synthetic dyes, the use of haematoxylin for staining tissue has endured to the present. This presentation explores the history and uses of this versatile organically derived stain.

Mohs UK NEQAS CPT pilot EQA scheme: Exciting developments on how to land the plane successfully!

Dr Guy Orchard, Dermatopathology Laboratory

The introduction of a new pilot scheme for Mohs was created as a result of a defined need across the UK for an EQA scheme that previously hadn't existed and in addition the need for evidence based participation in an established EQA scheme required by UKAS and ISO 15189 standards for

laboratory practice. The new scheme encompassed several training sessions for all the assessors in order to establish the correct level of expectation of performance of all the participants.

Wednesday, 27th September: Haematology

Beyond Textbook Diagnosis

Dr Gary Moore, Diagnostic Haemostasis & Thrombosis Laboratory

Many disorders of haemostasis and thrombosis can be expected to manifest in predictable patterns with panels of laboratory assays and diagnosis being relatively straightforward. Rare sub-types of some disorders may not conform to standard presentations and can go undiagnosed without further tests and informed interpretation.

Wednesday, September 27th: Immunology

Autoimmune bullous dermatoses – case studies

Dr John Mee, Immunodermatology Laboratory

Case presentations which highlight how our tests can help in diagnosis of these patients.

Wednesday, September 27th: Cellular Pathology

Skin Antibodies

Dr John Mee, Immunodermatology Laboratory

An overview of the diagnostic techniques offered and how the results can be used in diagnosis and monitoring of patients.

POSTER PRESENTATIONS

Monday, September 25th

Age and sex-specific ferritin reference intervals for iron status assessment

Nadia Munim, Diagnostic Haemostasis & Thrombosis Laboratory

A modified Hoffmann's approach was used to establish age and sex-specific ferritin ranges. Both lower and upper limits for this marker are clinically important, since low values suggest deficiency leading to anaemia, and high values may reflect iron overloading/acute phase. Therefore, accurate and subgroup-specific reference intervals should be applied. Application of these reference intervals will aid iron status assessment and support patient care.

Tuesday, September 26th

TruSlice and TruSlice Digital histological dissection devices, introducing an exciting development in providing improved accuracy and precision at the cut- up bench

Mohammad Shams, Dermatopathology Laboratory

TruSlice and TruSlice Digital are two new innovative tools which enable all the dissection factors to be controlled. Both devices are based on a guillotine configuration, one with plastic inserts

(TruSlice) and the other with an electronic micrometre attached (TruSlice Digital). The devices were assessed in 5 hospitals and the precision and reproducibility was evaluated.

Wednesday, September 27th

Zinc transporter 8 antibodies: To test or not to test

A Rhodes & M Peakman: Clinical Immunology Laboratory

Zinc transporter 8 (ZnT8) is a pancreatic β-cell secretory granule membrane protein that has been newly identified as a target of humoral immunity in type 1 diabetes. The measurement of autoantibodies to insulin, glutamic acid decarboxylase 65 and protein tyrosine phosphatase IA-2 by radioimmunoassay encompass our current testing strategy for type 1 diabetes mellitus (T1DM). However, ZnT8 has been shown to be more specifically expressed in insulin-containing secretory granules than that of GAD and IA-2. This study analysed the prevalence of ZnT8 antibodies in routine T1DM testing and considered the benefit of including ZnT8 in our testing panel to improve diagnostic accuracy.

Incident, response and outcome: A study involving Bronze Commander responses to multiple incidents affecting pathology services at Viapath Analytics outside of core hours

Dervilla Gorman, Haemostasis & Thrombosis Laboratory

A Gold-Silver-Bronze command structure is used by Viapath Analytics at Guys and St Thomas' NHS Hospital Trust to establish a hierarchical framework for the command and control of major incidents and disasters that could affect the pathology service, health and patient care. This poster highlights the varied types of incidents that have taken place, how they were resolved and the final outcome. It also highlights the importance of having a Bronze commander on-site to deal with these incidents and their role as a single point of contact, to facilitate the provision of all pathology.

Second tier screening test for raised C5 newborn screening samples

D Burden, K John & R S Carling: Biochemical Sciences

Following a pilot study, the national newborn screening programme was expanded to include screening for Isovaleric Acidaemia (IVA). This is performed by flow injection analysis mass spectrometry; however in addition to detecting the compound of interest, isovalerylcarnitine, it also detects isobaric compounds including pivaloylcarnitine. Data from the pilot study demonstrated a high number of false positive results and it is well documented that exogenous sources of pivaloylcarnitine can be responsible for this. A method was set up to chromatographically separate the isobaric compounds in order to identify the predominant compound present in true and false positive newborn screening samples