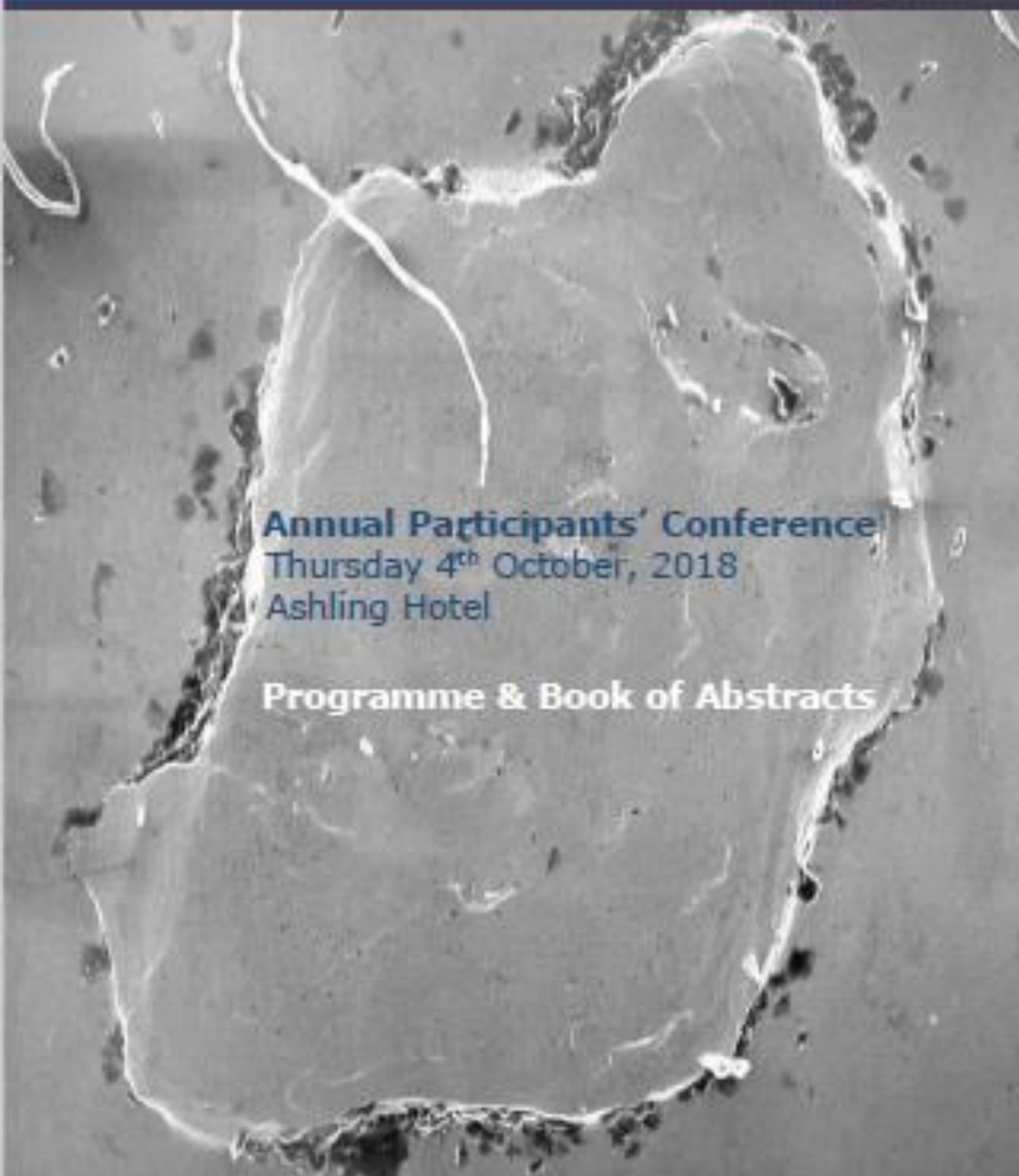
IEQAS

Irish External Quality Assessment Scheme



Annual Participants' Conference

Thursday 4th October, 2018

Ashling Hotel

Programme & Book of Abstracts

Contents

Welcome

Welcome to this year's IEQAS Participants' Conference. Now in its 37th year, IEQAS is one of the longest-standing quality initiatives in the Irish health service. We provide External Quality Assessment (EQA) schemes for laboratory medicine (including primary care), offering professional advice and guidance as necessary.

The scheme is educational rather than regulatory in nature and provides a means of external audit that operates continuously, thus helping laboratories to achieve their aim of continuous quality improvement.

An increasingly important role for IEQAS is participation in national and international initiatives that have the objective of improving quality of analysis in laboratory medicine, such as standardisation and harmonisation of analysis.

IEQAS is a non-profit professional association directed by a Steering Committee consisting of nominees from the major professional bodies involved in Irish laboratory medicine:

- **Academy of Clinical Science & Laboratory Medicine**
- **Association of Clinical Biochemists in Ireland**
- **Royal College of Physicians of Ireland, Faculty of Pathology**

On behalf of the IEQAS Steering Committee

ISO 9001:2015 EQA QUALITY ASSURED ORGANISATION

EQALM European Organisation For External Quality Assurance Providers in Laboratory Medicine

IEQAS Committees

Steering Committee

McGing, Peadar[4]	Chair Principal Biochemist, Mater UH
Murphy, Dympna[4]	Vice-Chair Chief Medical Scientist, Tallaght UH
Barrett, Ned[2]	Formerly Consultant Clinical Biochemist, UH Limerick
Brady, Jennifer[2]	Principal Clinical Biochemist, Mater UH
Brady, John[1]	Formerly Laboratory Manager, Our Lady's Children's Hospital, Crumlin
Driscoll, Therese[4]	Senior Medical Scientist, Tallaght UH
FitzGerald, Susan[3]	Consultant Microbiologist, St Vincent's UH
Graham, Hazel[5]	IEQAS Quality Manager
Howley, Patricia[5]	IEQAS Operations Manager
Kane, Anne[4]	IEQAS Scheme Manager
Kelleher, Patsy[4]	Senior Medical Scientist, Tallaght UH
Shirley, Ivan[1]	Chief Medical Scientist, St Vincent's UH

Associated Professional Bodies

[1] Academy of Clinical Science & Laboratory Medicine
[2] Association of Clinical Biochemists in Ireland
[3] Royal College of Physicians of Ireland, Faculty of Pathology
[4]Co-opted by Steering Committee
[5]IEQAS Operations Management

Additional Specialist Advisors

Boran, Gerard	Consultant Chemical Pathologist, Tallaght UH
Clarke, Frank	Lecturer, School of Biological Sciences, DIT
Griffin, Damian	Consultant Chemical Pathologist, Galway UH
McCafferty, Richard	Chief Medical Scientist, St James's UH
O'Kelly, Ruth	Principal Clinical Biochemist, Coombe Women & Infants UH
O'Sullivan, Niamh	Consultant Microbiologist, Our Lady's Children's Hospital / Coombe Women & Infants UH
Perera, Kanthi	Consultant Haematologist, MRH Tullamore
Ryan, Mary	Consultant Haematologist, Cork UH
Smith, Tom	Principal Biochemist, St Vincent's UH
Ward, Cara	Senior Medical Scientist, St Vincent's UH

Operations Management

Graham, Hazel (Quality Manager)
Howley, Patricia (Operations Manager)
Kane, Anne (Scheme Manager)
Phelan, Maria (Scheme Administrator)

(UH = University Hospital)

Plenary Programme

FIRST PLENARY SESSION: Liffey Suite – 1st Floor

Chair: Dr Peadar McGing #, Mater UH & IEQAS Chair

09:45 **Opening Address**
Dr Peadar McGing#, IEQAS Chair

09:50 **Laboratory medicine standards: an update and how can you contribute to their development?**
Ms Linda Hendy, Standards Officer, National Standards Authority of Ireland

10:20 **HbA1c, the last issues to be addressed**
Dr Cas Weykamp, Queen Beatrix Hospital, Netherlands

11:00 – 11:30 Tea/Coffee

SECOND PLENARY SESSION: Liffey Suite 1st Floor

Chair: Ms Dympna Murphy#, Tallaght UH & IEQAS Vice-Chair

11:30 **Common sense approach v SOP 'The Burning Train'**
Prof Patrick J. Neligan, Galway UH

12:10 **Preanalytics survey results**
Dr Ann Leonard, Tallaght UH

12:30 – 14:00 Lunch**
Chesterfields Restaurant - Ground Floor

Afternoon Workshops

CLINICAL CHEMISTRY: Liffey Suite – 1st Floor

Chair: Dr Lucille Kavanagh-Wright, *Mater UH*

14:00 **Performance of HbA1c by your country, by your manufacturer and by your own lab, from a European perspective:** Dr Cas Weycamp, Queen Beatrix Hospital, Netherlands
14:30 **Atypical Body Fluids – How should we assess quality of biochemical testing?** Dr Peadar McGing#, Mater UH
15:00 **Validation of a capillary zone electrophoresis HbA1c system:** Ms Martina Doheny & Ms Maria Prout, Galway UH
15:30 **Implementation of the CKD-EPI formula for eGFR calculation:** Dr Janice Reeve, SVUH

HAEMATOLOGY: Phoenix Suite - 2nd Floor

Chair: Mr Fergus Guilfoyle, Coombe UH

14:00 **Blood Cell Morphology Scheme - Annual review**
Dr Kanthi Perera*, MRH Tullamore

15:00 **ICSH Survey on IQC of Cell Counters:**
Mr Richard McCafferty*, St James's UH

15:15 **Red cell parameters in Iron deficiency and Thalassaemia:**
Ms Laura Kelly, Mater UH

15:40 **Paediatric Haematology Case Studies; Anaemia ?Cause:**
Ms Lisa Langabeer & Ms Grainne Quinn, Our Lady's Children's Hospital, Crumlin

MICROBIOLOGY: Kilmainham Suite - Lower Ground Floor

Chair: Dr Suzy Fitzgerald#, SVUH

14:00 **Comparison of molecular techniques for detection of CPE:**
Ms Kate Byrne, Mater UH

14:30 **Retrospective analysis of samples referred for 16s rRNA:**
Mr Ian McCarthy, SVUH

15:00 **From Bench to Bedside-Clinical Cases:** Dr Grace Chan, SVUH

15:40 **Proficiency Testing or Quality Control? – There is a difference and deciding on when which one is applicable:**
Mr Peter Penn, Microbiologics

TRANSFUSION: Montpelier Room - 2nd Floor

Chair: Ms Patsy Kelleher#, TUH

14:00 **Alloimmunisation in an Irish patient population with Myelodysplastic Syndromes and the evaluation of the provision of Rh and K phenotype matched blood:** Ms Meghan O'Brien, Tallaght UH

14:40 **Evaluation of recombinant blood group proteins in pre-transfusion and antenatal testing at the RCI laboratory:**
Ms Aisling Costelloe, IBTS

15:20 **Haemovigilance in Tallaght Hospital:** Ms Helen Byrne/Ms Patsy Kelleher#, Tallaght UH

Member of IEQAS Steering Committee * Specialist Advisor to IEQAS

Evaluation forms & badges: Leave at registration desk or workshops

ACSLM - 1 Day Conference: www.acslm.ie/cpd (select a one day event, upload supporting documentation & complete reflective practice report)

Lunch: GF & vegetarian options will be available. For other dietary requirements, contact the Restaurant Manager

IEQAS Annual Report 2018

IEQAS continues to provide and expand a wide-ranging EQA service. Our national schemes include Clinical Chemistry, Full Blood Count, Blood Cell Morphology and HbA1c. We currently have participants in over 90 different schemes run either by IEQAS directly, or in collaboration with Labquality, the Finnish EQA scheme. We are the sole distributor in Ireland for this international EQA provider, which has 4500 laboratories from more than 50 countries participating in their programme of >150 different schemes. IEQAS has ISO 9001:2015 certification.

We wish to thank all members of the Steering Committee and other IEQAS Specialist Advisors for their continued support and commitment.

Thanks also to the staff in Tallaght UH, SVUH, Mater UH, OLCH Crumlin, MRH Tullamore for facilitating IEQAS with sample preparation, storage and distribution. IEQAS always welcome interesting cases for our Blood Cell Morphology scheme from our participants.

Activities 2018:

- **IFCC EurA1c-project for HbA1c:** IEQAS has been collaborating with this project since it was established in 2016. Two samples are distributed simultaneously via multiple EQA organisers to establish a European-wide picture of HbA1c performance. The project is part of the IFCC Committee for Education in the Use of Biomarkers in Diabetes (C-EUBD). The success of this EurA1c project highlights the importance of EQA in driving analytical quality improvement and follows on from the successful 2011 implementation of International Standardisation of HbA1c in Ireland. Dr Cas Weykamp (NL) is leading this project and will give a presentation at this Conference.

  The 2016 data published in The Journal of Clinical Chemistry http://clinchem.aaccjnls.org/content/early/2018/05/22/clinchem.2018.2887955 shows that Irish (IEQAS) participants demonstrated the best performance (bias, CV) of the 10 countries collaborating in the fresh blood element of the survey.
  The EurA1c Report for 2017 can be found at http://www.ieqas.ie/surveysstudiesandpublications/hba1c/

Plans are underway for another distribution mid October 2018.

- **NCCP Tumour Marker Harmonisation Project (for NCCP designated cancer centres):** IEQAS is continuing to assist the National Cancer Control Programme with EQA and IQC elements of this project; currently for PSA, CA_{125} and hCG. Each centre takes turns to supply samples.
- **Histopathology EQA scheme:** administered by IEQAS supported by the Faculty of Pathology, Royal College of Physicians of Ireland, with over 90 participants.
- **EQALM:** IEQAS is a member of the European Organisation for EQA Providers in Laboratory Medicine; IEQAS contributes to many EQALM surveys which assist in suggesting improvements for EQA schemes across Europe.
- **National POCT Committee:** IEQAS are represented on this committee.
- **Reference Interval Harmonisation Project Group**: IEQAS assist on this National Clinical Programme for Pathology project
- **ICSH:** Jointly with the ACSLM, IEQAS are affiliated with the International Council for Standardisation in Haematology; Richard McCafferty is the Irish representative.
- **Health Products Regulatory Authority:** IEQAS have regular contact with the HPRA; individual participant performance is never discussed and remains the responsibility of the participant.
- **Suppliers:** IEQAS maintains good relations with many suppliers and assists with problems and issues as they arise.
- **BioMedica 2018:** IEQAS hosted a stand, jointly with Labquality.

Our Order Forms for 2019 will be sent out shortly. A summary of all schemes offered by IEQAS, and the changes for 2019, is included with this booklet. A copy of the Labquality Product Catalogue 2019 is available in your Conference bag and can be found on IEQAS website. Labquality schemes should be ordered directly from IEQAS and we are also responsible for any queries you may have throughout the year.

Ms Patricia Howley, Operations Manager, IEQAS

IEQAS EQA Schemes 2019

IEQAS provides schemes directly, in addition to many from Labquality, our Finnish EQA partner

- IEQAS deal with all your orders & queries, incl. Labquality
- No VAT payment is required; prices in Euro
- Local advice & expertise
- Special Surveys
- Pre-order Conference places 2019

IEQAS National schemes

Blood Cell Morphology

- One sample, distributed every 2 months
- Educational (not scored)
- Annual review at IEQAS Conference
- Interesting cases - always welcome from any participant.

Clinical Chemistry (general)

- One sample, distributed monthly
- Special feature: >3 minimally processed patient pools
- >1 with Reference Values quoted

Full Blood Count

- Two samples, distributed every 2 months (analytes include RDW)
- Occasional Fresh Blood Survey

HbA_{1c}

- Two samples, distributed 5 times/year *NEW: previously 4/year
- Fresh single-donor blood samples from donors with diabetes and/or pooled patient samples.
- Participation in $EurA_{1c,}$ (Annual European survey since 2016)
- Scored vs Reference Value (ERL)
- Suitable for Laboratory and POCT meters

NCCP Pilot: PSA, Ca_{125}, hCG

(NCCP Designated Cancer Centres)

- One sample/analyte, distributed quarterly
- Minimally processed patient pools

General Histopathology

Supported by Faculty of Pathology RCPI for Histopathologists with full/part generalist practice

- 12 slides, per distribution with peer review
- CPD Certification

Labquality (Finland)

(Further details in 2019 Labquality Product Catalogue)

Changes for 2019 include:

New schemes & products

4156 Reticulocyte count, automated: Mindray
5303 Meningitis-encephalitis multiplex, nucleic acid detection

New Integrated EQA Programs

Integrated EQA schemes combine pre-analytical, analytical and post-analytical EQA to one scheme fulfilling ISO 15189 requirements.

EQA Programme 2019 has over 30 Integrated EQA schemes that include pre and/or post-analytical cases.

All integrated EQA schemes are marked in the catalogue with EQA3 label

Changes in scope, specimens or parameters

5222 Mycobacterium, extra set of samples
2481 Vitamin A, E and D metabolites, extra set of samples
5650 Cytomegalovirus, antibodies New specimen volume 0.5 mL
5472 Faecal parasites multiplex, nucleic acid detection New parameters: *Dientamoeba fragilis, Entamoeba dispar, Entamoeba histolytica*
2114 Haemoglobin, 1-level, POCT New specimen quantity: 2 specimens / round
4200 Leucocyte differential count, 3-part, automated Suitable also for Medonic analysers
5098 Rotavirus and adenovirus, detection New parameter: Nucleic acid detection. New specimen material.

LABQUALITY DAYS

7-8 FEBRUARY, 2019
HELSINKI, FINLAND

International Congress on Quality in Laboratory Medicine

Labquality Days is one of the largest international congresses in 2019 focusing on quality and laboratory medicine. The themes are *Quality Control Reinvented?* and *Digital Health*. Come along and enjoy the inspiring scientific atmosphere and feel the pleasant cool winter days in Helsinki. For further information please see **labqualitydays.com**.

Under the auspices of

ifcc International Federation of Clinical Chemistry and Laboratory Medicine

EFLM EUROPEAN FEDERATION OF CLINICAL CHEMISTRY AND LABORATORY MEDICINE

Follow us on social media for all the latest updates!
@LabqualityDays, @LabqualityEQAS, #LQD2019

Labquality Digital EQA Programmes

- No shipping costs
- No stability or homogeneity issues

Anatomic pathology

Histopathology and cytology digital schemes use virtual microscopy technology for diagnostics (digital pathology).

- **Non-gynaecological cytology (VIRTUAL)**
- **Gynaecological cytology, liquid based (VIRTUAL)**
- **Gynaecological cytology, smear (VIRTUAL)**
- **Histopathology (VIRTUAL)**

Clinical chemistry and haematology

Visual evaluation of cell morphology or motility of sperm cells using digital images, digital video and/or virtual microscopy technology as sample material. Several cases are provided in each round.

- **Column agglutination methods: grading of reactions and patient cases**
- **Down's syndrome screening, data analysis (LifeCycle, Prisca)**
- **Leucocyte differential count and evaluation of blood cell morphology (VIRTUAL)**
- **Nasal swab cells identification**
- **Semen analysis**
- **Sputum cells identification**
- **Urine, identification of cells and other particles**

Clinical physiology

Clinical physiology scheme uses digital images of ECG registration.

- **ECG, interpretation**

Clinical immunology and clinical microbiology

Interpretation and evaluation of IFA and Gram stain are made from high quality digital images.

- **Autoimmune diagnostics, IFA interpretation**
- **Bacteriological staining, direct, evaluation**

Parasites in blood and parasites in faeces digital schemes use virtual microscopy technology.

- **Parasites in blood (VIRTUAL)**
- **Parasites in faeces (VIRTUAL)**

Preanalytics

Preanalytical phase of laboratory investigations is evaluated from written cases or digital images on Labquality´s website. Participants are asked to evaluate possible preanalytical errors from the cases.

- **Preanalytics, clinical chemistry**
- **Preanalytics, microbiology**
- **Preanalytics, urine and blood sample collection**
- **Preanalytics, POCT in chemistry**

Virtual microscopy demo

Please use our virtual microscopy demo site (www.labquality.com) to test that your internet connection and internet browser are compatible with the Aiforia cloud webmicroscope.

Plenary: Abstracts & Biographies

Laboratory medicine standards: an update and how can you contribute to their development?

Ms Linda Hendy, Standards Officer, National Standards Authority of Ireland (NSAI)

Abstract

An overview will be provided of how International standards are developed. This will include the key organizations and how NSAI contributes to the standard development process. An overview of the latest standards being developed by ISO TC 212 – *Clinical laboratory testing and in-vitro diagnostic test systems* and ISO Committee on Conformity Assessment (CASCO) and other relevant Technical Committees (TC) will be addressed.

Biography

Linda Hendy works in the National Standards Authority of Ireland as Standards Officer in the Healthcare area. Working in this area Linda has access to International Standards being developed in several areas including standards for health care services, clinical laboratory testing and in vitro-diagnostics, active and non-active medical devices, and health informatics. Electro-technical standards addressing the safety of equipment in medical locations also come under the health care standards sector.

Linda previously worked in standard development in NSAI certification, in the medical device section and worked as an auditor and product reviewer. Prior to working in NSAI Linda worked in the medical device industry as a Regulatory affairs and Quality Manger.

HbA1c, the last issues to be addressed:

Dr Cas Weykamp, IFCC Network Coordinator, Queen Beatrix Hospital, Netherlands

Abstract

HbA1c has been used now for decades and is well established. But there are still some issues that have to be resolved. The major haemoglobin variants are S, C, D and E. In the past these variants caused interference on the measurement of HbA1c but most modern methods have solved that problem. However, there is ongoing discussion if HbA1c methods should report on the presence of a variant or not. There is also no agreement on the use of HbA1c for diagnosis. The major reason is that the difference between a "normal" and a "diabetic" HbA1c is small. A relatively small analytical error can already have a high impact on the interpretation of the result. In addition variation in erythrocyte lifespan can have an impact on interpretation of an HbA1c result. For this reason there is an ongoing focus on the quality of the measurement of HbA1c. The IFCC developed a model for quality targets and this model is applied in the EurA1c trial: the same samples are measured by more than 2000 laboratories in 17 countries. Results are presented and discussed at the country and manufacturer level. Finally the use of POCT for diagnosis is given attention.

Biography

Cas Weykamp is a Clinical Chemist and Director of the MCA laboratory of the Queen Beatrix Hospital in the city of Winterswijk, the Netherlands. A major activity is the standardization of HbA1c. He is the network coordinator of the worldwide network of 16 reference laboratories operating the IFCC reference method for HbA1c and secretary of the IFCC Task Force for education on HbA1c. He is also advisor of the NGSP. He organises the EQA/PT program for HbA1c in the Netherlands. In general, he is active in the field of EQA/PT, Standardization and Harmonization as member of the IFCC Task Force for Proficiency Testing and the IFCC Working Groups on Commutability and CDT. In the AACC he served as chair of the task force to develop tools for the AACC Harmonization Initiative. He is speaker at many international scientific meetings. For a review of his publications please see www.pubmed.com under Weykamp C.

Common sense approach v SOP 'The Burning Train'

Prof Patrick J. Neligan, Consultant in Anaesthesia & Intensive Care, Galway University Hospitals

Abstract

It is widely accepted that medical errors result in a significant number of deaths and injuries within the healthcare system each year. It is believed that, by applying an evidence based paradigm associated with specific systems for implementation, patient outcomes will improve principally as a consequence of error reduction but likely also due to Hawthorne effects. The tools that are applied include protocols (pathway must be followed), guidelines (pathways that should be followed), checklists (to ensure compliance with international standards) and bundles (where multiple components are combined to reduce patient risk). Undoubtedly, the most successful of these interventions is the World Health Organisation's Surgical Safety Checklist. The National Early Warning Score (EWS) system has likely reduced in-hospital mortality and morbidity, although empirical evidence is lacking.

Internationally, the Surviving Sepsis Guidelines (SSG) have been adopted voluntarily (most countries), by law (New York State) or ignored (Australia). Although there have been at least five iterations of SSG, multiple components from the original guidelines have been dropped, principally due to lack of robustness of evidence, but also the emergence of evidence of injury. As time has passed, the guidelines have simplified and the core components have coalesced from 3 different bundles, to a single – one hour – bundle. This is tremendously controversial.

Protocols are widely distrusted by healthcare professionals, for a variety of reasons: these include the consistency principle, a tendency to not change what they believe is working, mistrust of small single centre trials (potential academic misconduct), and antagonism to slow moving "nanny" structures within the health system. The continued use of isotonic saline solution (0.9% NaCl) as a resuscitation fluid by clinicians, despite clear evidence of harm, demonstrates the problem of healthcare by committee, parochialism and the problem of small numbers.

A major national concern is the continued hysterical reaction to "scandals" within the healthcare system. Often, when "clusters" of adverse outcomes are leaked, reported and disseminated – the final result – reversion to the mean - is never reported, contributing to a lingering distrust of healthcare providers for political and

bureaucratic superstructures. This results in a defensive approach to healthcare with slavish following of protocols and guidelines, despite shifting evidence and heterogeneity of patients and pathologies.

Biography

Pat Neligan is a Consultant Anaesthetist with a Special Interest in Intensive Care at Galway University Hospitals, medical director of the University Hospital Galway Intensive Care Units and Honorary Professor of Anaesthesiology and Intensive Care at NUI Galway. He attended UCD medical school and trained in Anaesthesiology and Medicine in Ireland, and subsequently in Critical Care and Trauma in the United States. He has a Master's Degree in Healthcare Administration. He was on staff at the Hospital of the University of Pennsylvania, from 2002-2008. His academic interests are in fluid, electrolytes and acid base chemistry, bariatric anaesthesia and clinical decision making. He is currently co-editing the 3rd edition of his textbook – "An Evidence Based Practice of Critical Care."

Preanalytics survey results

Dr Ann Leonard, Quality Manager, Tallaght University Hospital (TUH), Dublin

Title: National survey on preanalytical error monitoring in Ireland

Authors: Ann Leonard[1], Anne Kane [2] and Gerard Boran[1]
[1]Clinical Biochemistry Unit, Trinity College, Dublin
[2] Irish External Quality Assessment Scheme

Key words: Survey, Preanalytical, Error, PID

Background: There is substantial evidence to support the view that the preanalytical phase, although not under the direct control of laboratory, maybe the most error prone of all the phases. The aim of this project, was to describe the prevalence and nature of preanalytical quality monitoring practices of patient identification errors in Ireland.

Materials and Methods: A survey was developed at the clinical biochemistry unit, Trinity College Dublin in conjunction with the Irish External Quality Assessment Scheme (IEQAS). The survey was sent to laboratory/ quality managers at 55 laboratories in the republic of Ireland. The survey was subdivided into a number of sections to gather information on labelling requirements, information availability, rejection criteria, error monitoring, reporting and also gauge interest in participation in an external quality assessment scheme.

Results: A total of 39 responses were received from a range of departments and disciplines (61%). Hospitals reported varying practices and requirements for labelling specimens and all accepted request forms. 100% of respondents had defined rejection criteria both for specimen labelling and request form completion. Unsurprisingly the rejection criteria differs across disciplines in laboratories.

Conclusion: The survey observes a wide variation in collection, recording and monitoring of errors. Data also indicates there is a lot of interest in improving preanalytical monitoring and data collection.

References:

1. Carraro, P., Zago, T., Plebani, M. Exploring the initial steps of the testing process: Frequency and nature of pre-preanalytical errors. Clin Chem 2012; 58:3, 638-642

2. Lippi G. et al. Preanalytical quality improvement: from dream to reality. Clin Chem Lab Med 2011;49;7, 1113-1126

3. Lippi, G. et al. Preanalytical quality improvement: in quality we trust. Clin Chem Lab Med 2013;51:1, 229-241

4. Sciacovelli, L.et al Quality Indicators in Laboratory Medicine: from theory to practice. Clin Chem Lab Med 2011;45;5, 835-844

Biography

Ann Leonard has been employed as a Medical Scientist in Tallaght University Hospital since hospital opening. Her current role in the Laboratory Medicine Department is Quality Manager. Prior to this she was the Laboratory IT manager.

Following her BSc from Trinity College/ DIT Kevin Street, Ann undertook a PhD through research at Tallaght Hospital in the area of postprandial lipaemia and graduated from Trinity College in 2011. In addition to this she undertook studies in Business management in Smurfit Business School (UCD) and graduated in 2014 with a Master's in Business Management.

Ann is an Adjunct Associate Professor and course co-ordinator for the MSC in Clinical Chemistry at Trinity College Dublin.

Workshop Abstracts & Biographies

Clinical Chemistry:

Performance of HbA1c by your country, by your manufacturer and by your own lab, from a European perspective

Dr Cas Weykamp, IFCC Network Coordinator, Queen Beatrix Hospital Netherlands

Abstract:
This workshop is related to the plenary lecture on HbA1c in the morning programme. Like in the lecture the results of the EurA1c trial are presented but now in more detail with focus on the performance of the Irish laboratories that participated via IEQAS. Results are discussed with the audience. The audience is also invited to share opinions on how to handle haemoglobin variants, HbA1c for diagnosis, and the use of POCT instruments.

Cas Weykamp, IFCC Network Coordinator, Queen Beatrix Hospital, Winterswijk, the Netherlands. c.w.weykamp@skbwinterswijk.nl

Biography
Cas Weykamp is a Clinical Chemist and Director of the MCA laboratory of the Queen Beatrix Hospital in the city of Winterswijk, the Netherlands. A major activity is the standardization of HbA1c. He is the network coordinator of the worldwide network of 16 reference laboratories operating the IFCC reference method for HbA1c and secretary of the IFCC Task Force for education on HbA1c. He is also advisor of the NGSP. He organises the EQA/PT program for HbA1c in the Netherlands. In general, he is active in the field of EQA/PT, Standardization and Harmonization as member of the IFCC Task Force for Proficiency Testing and the IFCC Working Groups on Commutability and CDT. In the AACC he served as chair of the task force to develop tools for the AACC Harmonization Initiative. He is speaker at many international scientific meetings. For a review of his publications please see www.pubmed.com under Weykamp C.

Atypical Body Fluids – How should we assess quality of biochemical testing?

Dr Peadar McGing, Principal Biochemist, Mater University Hospital (MUH), Dublin

Abstract

In an era where increasingly the accreditation process controls everything we do in clinical laboratories, what are we to do about any testing that falls outside of the manufacturer's validated use? Do we decline to do such testing, undertake a full validation ourselves, or do a partial validation (fit for specific purpose)? This is becoming a very real concern in laboratories worldwide. A particular problem affecting all clinical biochemistry labs is measurement in atypical fluids using tests validated for serum / plasma only, for example protein testing in pleural fluid.

Many of these tests are long established and are key components in the diagnosis of patients with accumulation of excess fluid. We cannot stop doing such tests without seriously compromising patient care. We must carry out some degree of validation / verification to ensure the tests we perform 'off-label' are performing appropriately in any fluid we use the test in. A key component of verification of manufacture-validated assays is testing of accuracy. We mostly use EQA for that in blood; but how can we check accuracy when, except for a few selected tests in CSF, there is no EQA for biochemistry testing in the atypical body fluid matrix?

This workshop will present some possible solutions and will facilitate discussion of what we as a community might do going forward.

Biography

Dr Peadar McGing is a Principal Clinical Biochemist at the Mater Misericordiae University Hospital in Dublin. Peadar has a strong interest in EQA and in the biochemistry of atypical body fluids. He is the current chair of IEQAS. He is co-author and co-editor of the ACBI's guideline booklet *The Biochemistry of Body Fluids* and was an invited speaker on this topic at the 2018 ACB Focus Conference Trainee Day in Manchester.

Validation of the CAPILLARYS 3 TERA: Capillary Electrophoresis instrument for high resolution HbA1c separation in the Biochemistry Dept. Galway UH

Ms Martina Doheny & Ms Maria Prout, Senior Medical Scientists, Clinical Biochemistry, Galway University Hospital (GUH)

Abstract

Haemoglobin A1c (HbA1c) is the fraction of haemoglobin with a glycation modification of the amino terminal valine residue of the B-globin chain. HbA1c concentrations reflect time-averaged blood glucose during the previous 2-3 months and is used as the gold standard for long term follow-up of glycemic control. In 2011, the WHO accepted HbA1c also for diagnostic use for diabetes mellitus with a cut off at ≥48 mmol/mol.

Methods with several different principles for HbA1c analysis are in clinical use, such as HPLC, immunoassay, enzymatic assays, boronate affinity HPLC and capillary electrophoresis. The SEBIA Capillarys 3 Tera is an automated analyser based on capillary zone electrophoresis and UV detection for the quantitative analysis of HbA1c. The instrument is equipped with 12 silica capillaries allowing a throughput of approximately 70 HbA1c samples per hour.

HbA1c test requesting has doubled in the last 3 years, in 2015 GUH were analysing ~5000-6000 HbA1c per month compared to ~ 9000-10000 per month in 2018. In March 2018 Galway University Hospital went live with two SEBIA Capillarys 3 Tera instruments for HbA1c analysis.

In this validation study we evaluated the Capillarys 3 Tera with respect to linearity, precision, trueness and correlation to Menarini HA-8180V HPLC analyser. Routine requested HbA1c samples were analysed on Menarini HA-8180V HPLC analyser and then with the Capillarys 3 Tera instrument.

- Linear regression analysis was carried out on 145 samples covering a wide range of HbA1c values from 17-146 mmol/mol.
- Intra/between runs EP15A3 precision study was assessed with two IQC material (36mmol/mol and 71mmol/mol) that were analysed 5 times a day over 5 consecutive days. The mean, SD and CV was calculated for each of the 12 capillaries across both instruments.
- Eight samples for which target values were assigned by IFCC Network for HbA1c were run on each Capillarys 3 Tera,

results were compared with IFCC target to assess the trueness of the method.

- Linearity was determined by doing serial dilutions with one normal HbA1c (29 mmol/mol) and one elevated HbA1c (120 mmol/mol) with similar Hb concentrations. Coefficient of correlation between measured values and the theoretical values were calculated.

There was strong linear correlation between the two instruments. Capillarys 3 Tera exhibits reproducibility and bias within the criteria. The total CV for the 12 capillaries across 2 analysers varied between 0.5-1.9%. In conclusion, the validation and subsequent installation of the Capillarys 3 Tera instrument in GUH has demonstrated that this instrument is reliable, easy to use and can absorb high volume testing activity in consequence of its full automation and high throughput.

Biography

Martina Doheny has worked in the Clinical Biochemistry department in GUH as a Senior Medical Scientist since 2012. She has previously worked in St James's Hospital and Galway Clinic.

Maria Prout has worked in the Clinical Biochemistry department in GUH since 2003. Since August 2017, she is now working as a Senior Medical Scientist.

Implementation of the CKD-EPI formula for eGFR calculation

Dr Janice Reeve, Principal Clinical Biochemist, Department of Clinical Biochemistry, St. Vincent's University Hospital (SVUH), Dublin

Abstract

Introduction: Glomerular filtration is one of the primary functions of the kidneys and measurement of its rate (GFR) is useful in kidney health assessment. However, GFR is not measured easily in clinical practice. As a surrogate, estimates of GFR (eGFR) formulae based on serum creatinine alongside non-GFR variables, relating to creatinine concentration, are utilised. These eGFR are reported alongside serum creatinine measurements to improve sensitivity and accuracy of chronic kidney disease (CKD) detection. The Modification of Diet and Renal Disease (MDRD) study formula is widely used in clinical laboratories. Its introduction improved the *status quo* but it was considered inaccurate at higher eGFR (>60 mL/min/1.73 m^2). A new serum creatinine-based eGFR to improve the accuracy of the MDRD eGFR was needed. The CKD Epidemiology Collaboration (CKD-EPI) formula is an alternative equation which applies different coefficients to the same four MDRD variables (serum creatinine, age, gender and ethnicity). While it does not overcome the limitations inherent to creatinine based eGFR formulae it has improved the accuracy of eGFR staging at normal eGFR levels.

Methods: In response to NICE and KDIGO clinical guidelines, CKD-EPI eGFR was set up on the Laboratory Information System (LIS) at St. Vincent's University Hospital (SVUH) in 2017. It was calculated alongside the MDRD eGFR but was not reported until July of this year. Prior to roll-out paired MDRD and CKD-EPI eGFR were examined. Estimates of GFR are discussed with reference to KDIGO CKD staging.

Results: In our validation cohort (n = 17,055), 13.6% of patients demonstrated an improved CKD stage when eGFR was calculated by CKD-EPI compared to the MDRD eGFR. As previously reported, the shift in reclassification was most evident in the <65 year age group, where all patients were seen to move to a better CKD stage. Females were also more likely to be reclassified compared to males (19.1% versus 14.7%). CKD-EPI classified fewer individuals in CKD stages 3 to 5 compared to the MDRD eGFR. Of the patients, reclassified to a poorer CKD stage (3.4%), all were ≥65 years. In the ≥75 year age group, 2% more patients were classified with CKD, stages 3 to 5, using the CKD-EPI equation rather than MDRD.

Conclusion: It has been recommended that CKD-EPI eGFR replace MDRD eGFR for routine use. Use of this equation will change the proportion of patients classified with different CKD stages. On-going education and discussion on the merits and limitations of this equation, like any other test, is required.

Biography

Janice Reeve is a Principal Clinical Biochemist working at St Vincent's University Hospital (SVUH) in Dublin. She graduated from the National University of Ireland Galway with a BSc honours degree in Biochemistry and went on to complete a PhD in Biochemistry. Janice took up a Clinical Scientist training post in Aberdeen Royal Infirmary which culminated in UK HCPC registration. She returned to Ireland in 2011 to work as a Biochemistry and Clinical Chemistry Lecturer in DIT, Kevin Street. During this time she completed her FRCPath examinations. Janice became a Senior Clinical Biochemist at SVUH in 2015 and Principal Clinical Biochemist the following year.

Workshop Abstracts & Biographies

Haematology:

Blood Cell Morphology Scheme: Annual review

Dr Kanthi Perera, Consultant Haematologist, Midland Regional Hospital (MRH), Tullamore

Abstract

During the last year IEQAS circulated 6 morphology cases. The presentation will review some of the morphological abnormalities in each case with a brief review of the diagnosis, to include how one could arrive at the diagnosis.

Biography

Dr Kanthi Perera graduated from the Faculty of Medicine, University of Colombo, Sri Lanka, initiated her post-graduate training in Sri Lanka and completed it at The Royal London Hospital in England. She was appointed as the first Consultant Haematologist in the National Cancer Hospital in Colombo and gave the leadership for the establishment of the first stem cell transplant unit in the country at the National Cancer Hospital. Dr Perera was hugely involved with both undergraduate and postgraduate teaching in the country. She moved to Ireland in 2001 and held a temporary consultant post in Mid-Western Regional Hospital, Limerick for 3 years and in UCH Galway for 9 months and is now Consultant Haematologist at the Midland Regional Hospital in Tullamore. Dr Perera carries out regular morphology teaching for SpRs and is a member of IEQAS Haematology Review Group.

ICSH Survey on IQC of Cell Counters:

Mr Richard McCafferty, Chief Medical Scientist, Haematology, St James's Hospital, Dublin

Abstract

The application of internal quality control (IQC) methods is an essential pre-requisite for all clinical laboratory testing including the blood count. Historically, methods for use of IQC materials, a main cornerstone of IQC practice, included preparation of in-house material made from human donor or animal blood, tested using available reference methods to assign target values and acceptable ranges. However, today there is a reliance on commercially produced control materials due to health & safety concerns, staff time constraints and the need to have an IQC material that will assess all the parameters of the extended blood count, several of which may be advanced analyses specific to the particular manufacturer's instrument. In addition, the need for accreditation of clinical laboratories to international standards such as the International Organization for Standardization (ISO) 15189 has increased focus and scrutiny of laboratory practice for IQC.

The International Council for Standardization in haematology (ICSH) commenced a project in 2016 to produce an updated guideline for internal quality control of cell counters. This project has considered the requirements of international regulatory bodies such as ISO 15189 and the College of American Pathologists (CAP), has gathered input from cell counter manufacturers and conducted a survey of IQC practice for cell counters in selected countries. This survey was first issued to haematology laboratories in the Republic of Ireland, with the assistance of IEQAS in March 2018. The survey gathered information on each laboratory's IQC practices, such as how frequently they run commercial IQC materials, the source they use to assign target values and limits, whether they use repeat patient sample results and whether they use patient means (Xm) in their IQC practice and for which parameters. It also asked which manufacturer and model of cell counter the laboratory uses, and obtained analyzer performance information from the laboratory's Mean and Standard Deviation results obtained from their manufacturer's IQC material over a 60-day period. This performance information was transformed into a "sigma-metric", which can be used as a measure of how well the analyzer's analytic performance provides clinically useful information.

This presentation will provide an update on the status of the ICSH guideline project and include an analysis and comment on the results from the survey of haematology laboratories in the Republic of Ireland.

Biography

Richard McCafferty has been Chief Medical Scientist in Haematology at St. James's Hospital Dublin since 1997 and has over 28 years' experience at a senior level in haematology laboratory management.

He trained and worked in both Ireland and in the UK, having spent 14 years in London firstly at University College Hospital, London and subsequently at the National Hospital for Neurology and Neurosurgery, Queen Square where he became Chief Biomedical Scientist in Haematology. He has been involved in laboratory accreditation since 1996; both the lab at the National Hospital gained CPA accreditation under his leadership and subsequently the haematology laboratory at St James's was among the first in Ireland to become CPA accredited in 2003. It has since secured accreditation to ISO 15189.

Richard served as Chair of the Haematology Advisory Body of the Academy of Clinical Science and Lab Medicine (ACSLM) for 10 years from 2005 to 2015 where he led the organisation of blood cell morphology workshops, seminars and short courses in all aspects of Laboratory Haematology presented by Irish and international speakers.

He has represented both the Academy and IEQAS on the International Council for Standardisation in Haematology (ICSH) since 2013, where he is the only Irish participant and is co-author on several guideline papers.

He has presented the quiz at the annual Haematology Association of Ireland (HAI) meeting, in collaboration with colleagues at St James's since 2011. He was also a co-founder of the Laboratory Science session at the HAI which commenced in 2013.

Red cell parameters in Iron deficiency and Thalassaemia

Ms Laura Kelly, Senior Medical Scientist, Haematology, Mater University Hospital (MUH), Dublin

Abstract

Introduction: Differentiating mild or moderate iron deficiency anaemia (IDA) from beta thalassaemia trait (B-TT) and other causes of microcytic anaemia is important. These conditions share many characteristics and making the distinction between them can prove troublesome. The aim of this study was to identify suitable red blood cell (RBC) parameters, available on the Sysmex XN series analysers, to incorporate into an algorithm for differentiating IDA from B-TT and other causes of microcytic anaemia.

Methods: Four patient groups were identified for this retrospective study of laboratory results; IDA (n=164), B-TT (n=16), other red cell diseases (Others) (n=17) and normal controls (n=100). Red cell parameters available routinely on the Sysmex XN series analysers were evaluated for correlation and differences to identify suitable parameters for inclusion in a newly developed classification tree.

Results: An algorithm which employs RBC parameters; mean cell volume (MCV), microcytic RBCs (MicroR), haemoglobin (HGB), mean cellular haemoglobin concentration (MCHC) and red cell distribution width (RDW) was established to differentiate between normal patients, IDA, B-TT, and patients with other haemoglobinopathies. Excellent sensitivity and specificity were achieved for differentiation of IDA (95.7% and 98.5%), B-TT (93.8% and 100%) and Others (88.2% and 97.1%).

Conclusion: An easy to apply algorithm was established that can accurately differentiate between the different types of microcytic anaemia. This algorithm can be employed to facilitate enhanced workflows in the clinical laboratory.

Biography

Laura Kelly BSc. MSc. is a Senior Medical Scientist in the Haematology Laboratory at the Mater Misericordiae University Hospital, Dublin.

Paediatric Haematology Case Studies; Anaemia ?Cause

Ms Lisa Langabeer, Senior Medical Scientist & Ms Grainne Quinn, Medical Scientist, Haematology, Our Lady's Children's Hospital, Crumlin

Abstract
Grainne and Lisa will discuss some interesting cases that have presented to Our Lady's Children's Hospital Crumlin, Dublin.

Biography
Grainne Quinn is a Medical Scientist in the Department of Haematology, Our Lady's Children's Hospital Crumlin (Dublin).

Prior to that Grainne worked in the Haematology Department at Our Lady of Lourdes Hospital, Drogheda from 2013 to 2014.

Lisa Langabeer is a Senior Medical Scientist in the Department of Haematology, Our Lady's Children's Hospital Crumlin (Dublin). She has responsibility for the laboratory haemoglobinopathy service in the EuroBloodNet Centre for Paediatric Red Cell Disorders, Ireland.

Lisa started her career in 1992 at University College Hospital (London) moving to the Hammersmith Hospital (London) in 1996 as a Senior Biomedical Scientist where she developed an interest in haemolytic anaemias and haemoglobinopathies. In 2001 she became Chief Biomedical Scientist of the Haemoglobinopathy/Red Cell Laboratory at The Royal London Hospital responsible for provision of red cell services for East London encompassing universal antenatal and neonatal haemoglobinopathy screening, monitoring of sickle cell disease patients and investigation of haemolytic anaemias.

Lisa moved to Our Lady's Children's Hospital Crumlin in 2004 where she continues the development of a neonatal sickle cell screening service for Ireland, representing Ireland in 2017 at The "Pan-European Consensus Conference on Newborn Screening for Haemoglobinopathies" in Berlin, Germany.

Workshop Abstracts & Biographies

Microbiology:

Comparison of molecular techniques for detection of CPE

Ms Kate Byrne, Medical Scientist, Microbiology, Mater University Hospital (MUH), Dublin

Abstract

Carbapenemase producing Enterobacteriaceae (CPE) pose a significant threat to public health, prompting the need for accurate and timely detection. Multiplex PCR platforms represent a technology that enables this.

Today I will be comparing different molecular techniques for the detection of CPE. The newly released EntericBio® realtime CPE assay will be a focus of today's talk.

Biography

Kate recently completed a BSc in Biomedical Science (DIT). She is currently working as a Medical Scientist in the Microbiology Department at the Mater Misericordiae University Hospital.

Retrospective analysis of samples referred for 16s rRNA

Mr Ian McCarthy, Medical Scientist, Microbiology, St. Vincent's University Hospital (SVUH), Dublin

Abstract

Mr Ian McCarthy, Dr Kirsten Schaffer, Dr Jennifer Walsh

Introduction: The use of 16S rDNA sequencing has played a huge role in the discovery of novel bacteria, reclassification of bacteria and the accurate identification of bacterial from clinical specimens. The technique is based on comparative sequencing of the unique 16S ribosomal DNA genes. For clinical microbiology, 16S rDNA has proven to be most useful in the identification of slow-growing bacteria, fastidious bacteria, uncultivable bacteria and culture-negative infections.

Aim: To audit specimens sent for 16s rDNA detection between 2014 and 2017 and the impact these 16S rDNA results had on clinical management.

Materials & Methods: The laboratory information system was retrospectively examined for all specimens sent for 16S rDNA detection. Patient demographics, culture results and pathogens detected were recorded. Specimens were referred to The Bacterial Identification Service (BIDS) at the Bacterial Reference Department in Colindale, London.

Results: In total 138 samples were sent from a total of 103 patients and 94% (N=129) were culture negative at 48 hours. The most common specimens referred for testing were tissue (36%), joint fluid (18%), cerebrospinal fluid (10%) and pus (9%). 79% of patients had only one sample sent. Orthopaedic patients comprised 33% of the study population.

Overall, 57% (N=78) of specimens sent for 16S rDNA in this study were culture-negative and had no DNA detected. There were 26 culture-negative specimens that had DNA detected.

Analysis of 2014 – 2016 data showed that 17% of samples had DNA detected yet remained culture negative. Of these specimens clinical management was altered in 33%. Further analysis is ongoing to examine the overall effect on clinical management from 2017 data.

Conclusion: 16S rDNA remains a valuable molecular identification tool. However this study demonstrates that frequently 16S results do not alter patient management. Enrichment cultures were frequently prone to contamination and should be interpreted with

caution. It is likely more specimens need to be sent per patient to outrule/confirm infection and change clinical management.

Biography

Ian McCarthy is a Medical Scientist in the Microbiology Department in St Vincent's University Hospital. Ian began his career in 2011 after graduating from Dublin Institute of Technology. He completed an MSc in Medical Microbiology (2012) in the University of Manchester. He has previously worked in Our Lady's Children's Hospital Crumlin and The National Maternity Hospital, Holles Street.

From Bench to Bedside: Clinical Cases

Dr Grace Chan, Specialist Registrar in Microbiology, St. Vincent's University Hospital (SVUH), Dublin

Abstract

Case studies emphasizing the importance of the microbiology laboratory in management of clinical cases will be presented.

Biography

Dr Grace Chan is a Specialist Registrar in Microbiology and is currently working in St. Vincent's University Hospital.

Proficiency Testing or Quality Control? – There is a difference and deciding on when which one is applicable

Mr Peter Penn, General Manager, Microbiologics, Loughrea, Co Galway

Abstract

As General Manager of Microbiologics I have presented to many audiences on Quality Control of Microbiology in all areas of Microbiology. What seems to be confused, both with the laboratory and auditors is where exactly the dividing lines between Quality Control and Proficiency Testing are? Where does one take over from the other? In this short presentation I hope to be able to clear these muddy waters and highlight where one underpins the other and why both are essential to the smooth running and good results in the Microbiology laboratory. How to choose a good proficiency test supplier and what questions need to be asked when selecting one.

Biography

Peter Penn is a Fellow of the institute of Biomedical Sciences specialising in Bacteriology. MiBiol Microbiology and Immunology.

Peter is an accomplished international presenter to many audiences worldwide. Presenting on topics in Pharmaceutical Microbiology, Clinical Microbiology, Food and environmental Microbiology. Specialising in Identification techniques, Phenotypic Microarrays, Quality Control and Culture media. Pipetting and pipetting techniques.

He has 24 years' experience in working in Microbiology and allied fields with 20 years' experience in International Microbiology; working with key manufacturers of culture media, diagnostic tests and pipetting instrumentation.

Peter also has 13 years' experience in Clinical Microbiology to a senior level from working in a Major London Cancer Hospital to a Busy District General Hospital. He was a lecturer in clinical microbiology for Higher national Diploma and Fellowship in Medical Microbiology.

Peter currently is the General Manager for Microbiologics Inc. Based in Loughrea, Co Galway.

Workshop Abstracts & Biographies

Transfusion:

Alloimmunisation in an Irish patient population with Myelodysplastic Syndromes and the evaluation of the provision of Rh and K phenotype matched blood

Ms Meghan O'Brien, Biomedical Scientist, Blood Transfusion Laboratory, Tallaght University Hospital (TUH), Dublin

Abstract

Myelodysplastic syndromes (MDS) are a group of clonal stem cell disorders characterised by ineffective haematopoiesis leading to peripheral blood cytopenia(s). Transfusion therapy is the cornerstone of supportive treatment and management for the majority of MDS patients, with many patients becoming transfusion dependent. Alloimmunisation is one of the most frequently encountered adverse complications of transfusion, can result in significant transfusion associated morbidity and mortality and has a significant impact on transfusion laboratory resources. Rh and Kell (K) blood group antigens are among the most common non-ABO blood group systems implicated in alloimmunisation. The British Society for Haematology (BSH) guidelines for pre-transfusion compatibility procedures in blood transfusion laboratories state that any policy regarding the provision of Rh- (CcEe) and K-matched units for transfusion dependent patients to minimise the risk of alloimmunisation should be a local decision. We investigated the rate of alloimmunisation, transfusion dependency, and development of Rh and K alloantibodies in a large cohort of Irish MDS patients by retrospectively investigating transfusion and clinical records of 263 patients diagnosed with MDS at Tallaght University Hospital. This study supports the recommendation for the provision of Rh (CcEe) and K phenotype matched units in transfusion dependent patients with MDS to minimise the risk of allommunisation.

Biography

Meghan O'Brien is a Biomedical Scientist in the Blood Transfusion Laboratory, Tallaght University Hospital. She completed BSc Biomedical Science and MSc Clinical Laboratory Science in the Dublin institute of Technology, Kevin Street.

Evaluation of recombinant blood group proteins in pre-transfusion and antenatal testing at the RCI laboratory

Ms Aisling Costelloe, Ms Edel Scally & Mr Barry Doyle, Red Cell Immunohaematology Laboratory (RCI), Irish Blood Transfusion Service (IBTS)

Abstract

Background: Recombinant blood group proteins (rBGPs) are soluble proteins derived from eukaryotic expression systems which mimic red cell blood group antigens. This study aims to evaluate rBGPs for their potential use in a RCI laboratory in the elucidation of complex antibodies in pre-transfusion and antenatal testing.

Study Design/Methods: The efficacy of eleven recombinant blood group proteins was evaluated using 52 samples (n=35 patient samples and n=17 samples received through international exchange programme). The hemagglutination inhibition assay (HIA) was the method employed with rBGPs as per manufacturer's instructions. Inhibited plasma was then tested with the pertinent red cells by IAT using BioRad gel card method. The study also evaluated how specific rBGPs are to their corresponding antibody, the effect of antibody strength on its inhibition by rBGPs and the use of plasma inhibited by rBGPs in pre-transfusion compatibility testing. Two case studies at the RCI laboratory are also described where rBGPs played a central role in antibody investigation and provision of red cell units to patients.

Results/Findings: Out of 52 samples tested, 61.5% were successfully inhibited by the pertinent rBGP. Out of 23 samples containing HTLA antibodies, 12 were successfully inhibited (52.2%). Out of 14 samples containing antibodies to high prevalence antigens tested, 11 were successfully inhibited (78.5%). Other antibody specificities tested: anti- Fy^a, Fy^b and Kell demonstrated successful inhibition by their corresponding rBGP at rates of 66.6%, 0% and 75% respectively. The rBGPs demonstrated specificity towards their corresponding antibody in 3 out of 4 samples tested, leaving any additional antibodies present in the sample to be detected. It was shown that antibody strength does not affect inhibition. Separate samples containing anti- Fy^a (n= 6) with titres from 2 to 512 were evaluated using recombinant Fy(a) protein. Inhibition of anti-Fy^a was successful at titres of 2, 4, 128, 256 and 512. Compatibility testing was performed using inhibited plasma (n=5) and resulted in compatibility with suitable red cell units on all days from day 1 to 8 inclusive.

Conclusion: The HIA is a fast, effective method of antibody identification however; it is not effective 100% of the time and therefore cannot replace current methods of antibody identification. Nevertheless, this study believes that rBGPs would be a very useful, supplementary method for RCI laboratories in the elucidation of complex antibodies. Their introduction, along with the HIA would be greatly advantageous to RCI laboratories as a complimentary method to current practices when dealing with complex antibodies.

Biography

Aisling Costelloe is a Senior Medical Scientist at the RCI laboratory, IBTS. Her final year masters project was based on the evaluation of recombinant blood group proteins.

Haemovigilance in Tallaght Hospital

Ms Patsy Kelleher, Senior Medical Scientist, Bllod Transfusion, Tallaght University Hospital (TUH), Dublin

Abstract
A look at sample issues in TUH including wrong blood in tube, EBTS and the most recent SHOT report.

Biography
Patsy Kelleher is a Senior Medical Scientist in Blood Transfusion, Tallaght University Hospital.

IEQAS
Irish External Quality Assessment Scheme

ACKNOWLEDGEMENTS.

2018 Annual Conference is supported by

LABQUALITY	Book of Abstracts
eurofins | Biomnis	Delegate bags
MEDICON IRELAND LIMITED	Delegate badges
Abbott	First Plenary Session
Roche	Second Plenary Session
MSC MEDICAL SUPPLY COMPANY LTD	Microbiology Workshop
	Haematology Workshop
ACBI	Chemistry Workshop
BRENNAN & COMPANY	Transfusion Workshop
Scanning Electron Micrograph of Ireland from a Euro Coin Credit - Maria Phelan, IEQAS	Cover Image

IEQAS
Irish External Quality Assessment Scheme

Unit B06 Nutgrove Enterprise Park
Rathfarnham, Dublin 14
D14 DC83

Tel: 01 495 7356
Fax: 01 495 7838
Email: info@ieqas.ie
Web: www.ieqas.ie

Academy of Clinical Science & Laboratory Medicine

Association of Clinical Biochemists in Ireland

Faculty of Pathology of the Royal College of Physicians of Ireland

ISO 9001:2015
EQA
QUALITY ASSURED ORGANISATION

EQALM
European Organisation For External Quality Assurance Providers in Laboratory Medicine

Publication sponsored by

LABQUALITY