BRITISH SOCIETY FOR HAEMOSTASIS AND THROMBOSIS

BSHT Annual Scientific Meeting 2022

Wednesday 26 – Friday 28 January

P & J Live, Aberdeen

Plenary speaker presentation summary + biography

bsht.org.uk/meetings-events/

Plenary speaker 1:

Novel ligands for platelet glycoprotein receptors

Prof Steve Watson
Birmingham

Platelets are activated by two major classes of surface receptors, G protein-coupled receptors and tyrosine kinase-linked receptors (TkRs). The most powerful group of TKRs are those that signal through a YxxL-containing motif known as an immunoreceptor-tyrosine-based-activation-motif (ITAM), namely CLEC-2, Fc□RIIA and GPVI. All three receptors are activated by clustering leading to a critical density of tyrosine residues in the cytosol for phosphorylation by Src and Syk tyrosine kinases. This drives a signaling cascade that culminates in the activation of PI 3-kinase and PLC□2.Platelets also express PEAR1 which signals through a YxxM motif which is phosphorylated by Src family kinases and signals via PI 3-kinase. Platelet glycoprotein receptors are considered to be targets for a new class of antiplatelet agent that are predicted to cause less bleeding than current drugs in conditions such as venous thrombosis (e.g. DVT) or in immue-driven thrombosis (e.g. VITT). CLEC-2 and GPVI have been proposed to be pattern recognition receptors for charged ligands accounting for the large number of endogenous and exogenous ligands in addition to their major 'physiological' ligands, collagen and podoplanin. This may also extend to PEAR1 which is activated by sulfated glycopolymers suggesting that its endogenous ligand may be a proteoglycan. In this presentation, I shall discuss the new ligands for these receptors and how ligand binding brings about activation.

Prof Steve Watson
PhD
University Professor, University of Birmingham

Steve Watson holds a British Heart Foundation Chair in the University of Birmingham and is head of the Birmingham Platelet Group. His research interests focus on the mechanisms of activation by tyrosine kinase-linked receptors. He is a life-long Nottingham Forest fan and still living in the late 1970s.

Plenary speaker 2:

Pathophysiology of trauma induced coagulopathy

Dr Nikki Curry
Oxford

Trauma induced coagulopathy is a term that describes the plethora of coagulation changes that take place after injury and which exacerbate bleeding. The coagulopathy of trauma is complex and is characterized by systemic anticoagulation, hypofibrinogenaemia and hyperfibrinolysis. One quarter of injured patients will be coagulopathic on arrival to hospital and this group of patients have higher transfusion requirements, increased risks of multi-organ failure, longer hospital stays and a three-four fold increased risk of death. Early and directed management of traumatic coagulopathy reduces preventable deaths from bleeding. An evolving understanding of the pathophysiology of trauma induced coagulopathy continues to guide clinicians in the best way to manage these critically ill patients. This talk will explore some of the laboratory and clinical evidence that has changed management practices for trauma haemorrhage over the last decade and will touch on areas of interest for future research.

Dr Nikki Curry
MD FRCP FRCPath MB BChir
Consultant Haematologist and Associate Professor of Haematology
Oxford University Hospitals NHS Foundation Trust and Oxford University
Oxford Haemophilia & Thrombosis Centre
Oxford

Dr Curry is a Consultant Haematologist at the Oxford Haemophilia & Thrombosis Centre where she is currently the Head of the Department. Her clinical interests cover the care of patients with inherited and acquired bleeding and thrombotic disorders, including the care of women with these disorders during pregnancy. Dr Curry's main research interest is in the treatment of acquired coagulopathy, in particular traumatic coagulopathy and the role of early fibrinogen replacement and means of guiding therapy during active major haemorrhage and she has more recently been lucky enough to secure an MRC fellowship to study the role of the endothelium in the development of coagulopathy.

Plenary speaker 3:

COVID-10 and clots: current uncertainty & controversy

Prof Beverley J Hunt OBE
London

Clots are now a recognized complication of COVID-19 pneumonia and vaccination

Early experience of the high rates of hospital-associated thrombosis in patients admitted with COVID-19 pneumonia led to increased doses of LMWH being used. However multiple randomized clinical trials have now shown that increased doses are only of benefit in patients with moderate disease. Most of the medical community and guideline groups have been slow to respond to this new data and concerns about the utility of therapeutic anticoagulation have been expressed. This will be discussed, as will be the controversies about the presence of "microclots" in post COVID-19 condition also known as "long COVID".

Prof Beverley Jane Hunt OBE
FRCP, FRCPath MD
Prof/consultant Kings Healthcare Partners
GSTT
Department of Thrombosis & Haemophilia, St Thomas'
London

https://en.wikipedia.org/wiki/Beverley_Hunt
Twitter: @bhwords

Professor of Thrombosis & Haemostasis at King's College London; Consultant in the Thrombosis & Haemophilia Centre at Guy's & St Thomas NHS Foundation Trust; & Clinical Lead in Haematological Sciences at Viapath LLP
She is founder & Medical Director of Thrombosis UK and chair of the Steering group of World Thrombosis Day, and is chair of the local organising committee for ISTH 2022.

In 2019 she was awarded an OBE in the Queen's birthday honours list for services to medicine.

In 2020 she was awarded the British Society for Haematology medal for service to haematology; and with her research fellow Karen Schreiber, won The Eberhard F Mammen award from Thieme publishing for the most popular article.

In 2021 she was honoured with an ISTH Esteemed Career award; was the first woman to give the Van Creveld lecture for the Netherlands Thrombosis & Haemostasis Society; and recently was honoured to give the first Gustav Born lecture..

She has over 400 original publications.

In the COVID-19 pandemic she has become an international expert on thrombosis and coagulopathy in COVID-19 patients, and has given over

100 international & national webinar lectures. She was an expert witness for the British House of Lords Science and Technology Committee and has given numerous media interviews including working with BBC News.

She sits on the World Health Organisation and NICE guideline development groups producing living COVID-19 guidelines, and is also a member of multiple national and international COVID-19 and more recently long-COVID research and advisory groups.

From March she worked as part of the core UK Expert Haematology Panel defining, managing and researching Vaccine-induced Immune Thrombocytopenia & Thrombosis (VITT), working with Public Health England and bodies such as the Royal Colleges and BBC Radio 4 where she gave a 10 minute interview describing VITT to the public.

Plenary speaker 4:

Vaccine-induced immune thrombocytopaenia and thrombosis: One year on, what have we learnt?

Dr Catherine Bagot
Glasgow

In the Spring of 2021, a few months into the mass COVID-19 vaccination programme in the UK and across Europe, simultaneous reports arose of a small number of patients presenting with life threatening thromboses in association with significant thrombocytopaenia and markedly elevated d-dimers, one to two weeks after receiving the ChAdOx-1 nCoV-19 vaccine. The condition came to be known as vaccine-induced immune thrombocytopaenia and thrombosis (VITT).

This presentation will describe how the UK, simultaneously with others in Europe, developed pragmatic guidance, regarding how to diagnosis and manage patients with VITT, based in part on previous knowledge pertaining to heparin induced thrombocytopaenia and thrombosis (HITT).

It will describe how a large cohort of UK patients enabled the identification of prognostic markers for VITT and provided some indication of what might be the most effective treatments for the condition. It will also describe the impact that the condition had on the management of the COVID vaccine programme in the UK.

Finally, it will discuss what has been determined so far regarding the underlying pathophysiology of the condition and if we are any closer to understanding why this vaccine should induce such a significant prothrombotic state in such a small number of otherwise fit and well patients.

Dr Catherine Bagot
BSc MBBS MD FRCPath
Consultant Haematologist and Honorary Senior Clinical Lecturer
Glasgow Royal Infirmary and Institute of Cardiovascular and Medical Sciences, University of Glasgow
Department of Haematology, Glasgow

Catherine Bagot is a Consultant Haematologist at Glasgow Royal Infirmary (GRI), specialising in Haemostasis and Thrombosis.

Her clinical interests include venous thrombosis treatment and prevention, obstetric haematology and immune thrombocytopaenia (ITP).
Her main research interest is the application of thrombin generation to clinical thrombotic issues.

She was a member of the UK Expert Haematology Panel who advised on the diagnosis and management of vaccine-induced thrombocytopaenia and thrombosis when it became an emerging issue in the Spring of 2021.

Plenary speaker 5:

Thrombus on a chip – modelling the human vasculature

Dr Matthew Harper
Cambridge

Coronary heart disease remains a major cause of death and disability, despite the many advances in science and medicine over many years. Rupture of a coronary atherosclerotic plaque can lead to partial or complete occlusion of the arterial by a platelet-rich thrombus, resulting in myocardial infarction. How arterial thrombi form has been extensively studied in vivo and in vitro. Occlusive thrombi can be readily formed in vivo, though such models are often limited by species-specific differences. In contrast, although in vitro models using human blood overcome this problem, many models do not generate occlusive thrombi. We have developed an occlusive thrombosis-on-a-chip microfluidic device that reliably generates occlusive thrombi at arterial and arteriolar shear rates. In this presentation I will describe how we developed this device (and what we learnt along the way), and how it can be used to understand the contribution of drugs, such as integrin inhibitors, P2Y12 antagonists and PAR antagonists, to occlusive thrombosis.

Dr Matthew Harper
MA (Cantab) PhD
Associate Professor
Department of Pharmacology
University of Cambridge, UK

Matthew read Natural Sciences at Cambridge and stayed to complete a PhD with Stewart Sage on the regulation of calcium signalling in platelets. He moved to Alastair Poole's group in Bristol to work on platelet granule secretion and thrombosis. In 2015 he was appointed to a lectureship in the Pharmacology Department. His current research focuses on understanding the regulation and pharmacology of procoagulant platelets. He is also interested in developing microfluidic models of thrombosis and haemostasis.

Plenary speaker 6:

The contact pathway as a target for antithrombotic drugs

Professor Helen Philippou
Leeds

In an attempt to develop safer anticoagulants with less risk of bleeding, next generation anticoagulants are in development. The targets for these inhibitors are within the contact pathway and predominately FXI or its activated form and FXII or it's activated form. This presentation will give oversight of the rationale for these targets and the type of inhibitors in development.

Professor Helen Philippou
PhD
Professor of Translational Medicine
University of Leeds
LICAMM, Leeds

Helen Philippou is Professor of Translational Medicine in the Faculty of Medicine and Health at the University of Leeds, and Founder Director of LUNAC (developing a next generation oral anticoagulant with minimal risk of bleeding). She is on the Editorial Board RPTH Journal, and Scientific Secretary for the BSHT Society Committee (since 2016), Co-Chair for the FXI and Contact System SSC of the ISTH (since 2018) and Member of the International Advisory Board for the ISTH 2020/2021/2022 Congresses.