

## **RCoA Payne Stafford Tan Award Report 2014/2015**

### Sepsis 2014, Institut Pasteur, Paris.

#### An International Symposium



The Royal College of Anaesthetists' Payne Stafford Tan award afforded me the opportunity to attend Sepsis 2014, an international symposium hosted by the International Sepsis Forum. In its eighth consecutive year, this is the largest conference dedicated to sepsis and attracts prestigious speakers of international standing. Sepsis and critical illness are clinical and research interests of mine and my current PhD studies are in this area.

The International Sepsis Forum (ISF) is the first global initiative that has sole focus on sepsis management. It is a cohesive collaboration between scientists and clinicians with the aim to vastly improve outcomes for patients with sepsis across the world. The vision, mission and core values of the ISF cover overarching issues from clinical and scientific standpoints, encouraging education and public engagement.

Over three days the Sepsis symposium covered a vast range of topics with talks delivered by clinicians and scientists from every continent. Plenary lectures on each day covered diverse subjects: defining excellence in critical care medicine; animal models for sepsis; and the evolution of the host response to sepsis. The lecture on animal models in sepsis was delivered by Professor Jean-Marc Cavaillon, a professor not far from home as head of the Cytokines & Inflammation Unit at the Institut Pasteur. An

engaging look at use of animal models in medical research, the talk provided salient points regarding the use of murine models in sepsis. For example, mice are  $10^5$  times more responsive than humans to endotoxin; highlighting the difference in the inflammation processes between mice and man.

The symposium was highly topical with speakers presenting results from recently completed clinical trials and also highlighting ongoing studies in sepsis research. Results from both the ProCESS (a randomised trial of protocolised care for early septic shock) and the ARISE trial (goal-directed resuscitation for patients with early septic shock) were presented by Professor Derek Angus (USA) and Dr Anthony Delaney (Australia) respectively. (The ProCESS trial can be found in the NEJM, May 1<sup>st</sup> 2014 and the ARISE trial can also be found in the NEJM, October 16<sup>th</sup> 2014). Professor Angus also presented the new ProACT study, a procalcitonin (PCT) consensus study to address the need for improved antibiotic decision making in sepsis potentially guided by PCT. Other notable ongoing clinical trials were discussed, covering a diverse range of potential therapeutic agents for use in sepsis, such as: thrombomodulin, selepressin, GM-CSF (granulocyte- macrophage colony stimulating factor) and alkaline phosphatase.

A breaking session was included to address the recent Ebola outbreak, appearing in the 'Global Burden of Sepsis' session; a highly appropriate fit. Covering epidemiology, immunobiology and clinical aspects of the disease, Ebola was very much brought to the fore. The remainder of the Global Burden of Sepsis session took the form of a pan-continent trip across differing patient populations, featuring sepsis statistics pertaining to each nation.

Day two finished with a session titled 'Beyond Cytokines: New targets in Sepsis'. This particular segment contained talks with focus on state-of-the-art sepsis research. Of particular interest was from University College London's Professor Mervyn Singer on the subject of mitochondrial protection and recovery. This highly accessible talk discussed the importance of mitochondria in the pathophysiology of sepsis, introducing recent work on the role of sirtuin (a regulatory protein) in the biogenesis of mitochondria.

Antibiotics were also discussed, with the ever-present theme of antimicrobial resistance given deserved attention. Beginning with the following quote from C. Nathan's 2004

*Nature* paper: 'It makes no sense to use twenty-first century technology to develop drugs targeted at specific infections whose diagnosis is delayed by nineteenth-century methods' a segue to discuss new diagnostic methods in sepsis was formed. The stewardship of antimicrobial therapy will hopefully be precisely guided in the future by emerging diagnostic approaches.

In summary, Sepsis 2014 was an engaging, informative and thought provoking look at sepsis from both clinical and scientific standpoints. I would highly recommend future symposiums to colleagues with research or clinical interests in this field. I would like to express my gratitude to the Royal College and previous benefactors who made the Payne Stafford Tan award possible.