

## 2008 CPB Lecture Objectives

### **Sunday**

*Introductory Session: Minimizing Human Error in the Operating Room: The Team Approach*

*Moderator: A DeAnda*

At the conclusion of this session, participants will: 1) Have a better understanding of the dynamics between various personnel in the operating, in various clinical situations. 2) The concept of “congruence” will be explored in this context. 3) Consider ways to improve interactions and communications, with the common goal of minimizing human error. 4) Experience through interactive media and feedback the range of responses for various clinical scenarios

### **Monday**

*Human Error Reduction/Safety*

*Moderators: B Spiess, A DeAnda*

At the conclusion of this session, participants will: 1) Have a better understanding of the various initiatives (ongoing and in development) aimed at reducing human error in the operating room, with respect to the major societies for each of the professions involved. 2) Be encouraged to discuss and consider other ways to improve patient safety at their institutions and within their practices. 3) Learn about the rates of the most common errors related to cardiopulmonary bypass; efforts to reduce CPB related error; and hear about real life examples of how errors or near misses resulted in the evolution of local practices for the better. 4) Consider where the next steps should be in the ongoing process of improving patient care at the local and national level.

*CAD*

*Moderators: A DeAnda, G Janelle*

At the conclusion of this session, participants will: 1) Consider the impediments and risk factors that affect “routine” cardiac surgery, from the perspective of the surgeon, perfusionist, and anesthesiologist. 2) Understand the current thinking and practice for dealing with ischemic mitral regurgitation. 3) Have looked at both sides of the argument regarding optimal practice for on and off-pump revascularization.

## **Tuesday**

### *Emerging Technologies*

*Moderators: M Borger, A Cheung*

At the conclusion of this session, participants will: 1) Understand the indications, contraindications, and effectiveness of percutaneous cardiac valve replacement as an alternative to conventional cardiac operation for valve replacement; 2) Learn the techniques and devices available for combined open and endovascular approaches to the surgical treatment of thoracic and thoracoabdominal aortic aneurysms; 3) Learn what devices are available and the implantation techniques for short- or long-term mechanical circulatory support in patients with end-stage heart failure.

### *Critical care*

*Moderators: A Rosenberg, G Janelle*

At the conclusion of the session, participants will: 1) Critically review the basis for recommendations surrounding the degree and methods to control perioperative glucose levels; 2) Specifically evaluate the data supporting tight glycemic control in patients undergoing cardio thoracic and vascular operations; 3) Suggest an appropriate clinical strategy to manage glycemic levels in the peri-operative period that will maximize benefit and reduce hypoglycemic and other adverse events; 4) Have reviewed the data on incidence and outcomes associated with various wound infections; 5) Have updated their knowledge of evidence-based strategies to reduce perioperative wound infections including; timing and type of antibiotics, patient and OR temperature, mechanisms to reduce peri-operative hypothermia, the role of oxygen, glucose control and transfusion medicine and post-operative wounds; 6) Be better informed on the national initiatives to reduce perioperative wound infections; 7) Be able to define perioperative vasoplegia; have reviewed data on the incidence of perioperative vasoplegia, both post-anesthetic induction and accompanying procedures involving cardiopulmonary bypass; 8) Evaluate potential risk factors for and outcomes associated with vasoplegia syndrome; 9) Be able to suggest appropriate clinical strategies to diagnose, treat, and possibly prevent perioperative vasoplegia.

## Wednesday

### *Controversies in Perfusion*

*Moderators: R Baker, C Gruenwald, G Hessel*

At the conclusion of the session, the participant will: 1) Know the significance of micro-air embolism during CPB, be able to select ways to monitor for it, and initiate measures to reduce the incidence of micro-air embolism in their practice. 2) Understand the risks and benefits of use of cardiomy suction versus red cell washer/processing systems to deal with shed blood during CPB. 3) Be able to select which system for handling shed blood to use in particular cases in their practice, and select methods of handling cell processed blood to minimize its adverse effects. 4) Become aware of the benefits and limitations of use of mini-circuits for CPB, and learn how to chose a system to employ in their practice, when the use of such systems may be justified, and understand the requirements to use such systems safely. 5) Analyze the evidence that suggests that use of data management systems improve patient outcome during CPB. 6) Make a recommendation to their local practice regarding the addition of a data management system into their practice. 7) Share personal experiences and opinions, and analyze the presented evidence, regarding the management of certain challenging clinical problems associated with the use of CPB. 8) Through this exercise the participant will understand the critical importance of synthesizing evidence in the medical literature and applying these finding to clinical practice.

### *Arrhythmias*

*Moderators: A Cheung, M Acker*

At the conclusion of the session, the participant will: 1) Understand the mechanisms and clinical consequences of supraventricular arrhythmias in the cardiac surgical patient. 2) Learn evidence-based approaches for the prevention and treatment of atrial fibrillation in cardiac surgical patients. 3) Understand the indications, techniques, risks and benefits of surgical ablation for atrial fibrillation. 4) Update knowledge on the management of patients with internal cardiac defibrillators and biventricular pacemakers.

## **Thursday**

### *Care of the Right Ventricle and Tricuspid Valve Repair*

*Moderators: M Borger, P Murphy*

At the conclusion of the session, the participant will: 1) Learn the echocardiographic criteria for grading the severity of tricuspid regurgitation. 2) Learn the echocardiographic criteria for grading the severity of right ventricular dysfunction. 3) Understand the clinical indications for tricuspid valve repair or replacement. 4) Develop a clinical strategy for preventing and treating right ventricular failure after cardiopulmonary bypass.

### *Pediatrics*

*Moderators: L Davies, C Gruenwald*

### *A Rational approach to bypass strategies for infants and children*

*Speaker: R Ungerleider*

At the conclusion of the session, the participant will: 1) Learn the advantages and disadvantages of DHCA vs. continuous flow and when and how to use them; the rationale behind the progressive miniaturization of circuits; 2) Participants will learn the value and risks of an asanguineous prime; temperature and inflammation; 3) Participants will get insight into the value and risks of cooling; reexamine the risks of neonatal CPB for "high risk" patients--has the pendulum swung so far that we are creating brain injury during neonatal cardiac repair; 4) Understand the importance of monitoring and ensuring optimal perfusion; 5) Develop an appreciation of the alterations in coagulation status in infants undergoing cardiopulmonary bypass; 6) Have a better understanding of how to minimize transfusion with its associated complications in small children; 7) Learn some flexible options for avoiding Norwood Stage I and staging towards a 2 ventricle repair when the LV is between 15-20 ml/m<sup>2</sup>.

## **Friday**

### *Blood conservation/management*

*Moderators: B Spiess, A DeAnda*

### *Update on what's new (TRALI, Aprotinin, Guidelines)*

*Speaker: B Spiess*

The audience will learn of data that has been published in 2006 and 2007 regarding risks of transfusion and adverse outcomes after heart surgery. The attendee will also learn of emerging data regarding the use of FFP and platelets and associations with TRALI and TACO. The attendee will here of the potential impact of adopting the STS/SCA "guidelines" as well as the FDA advisory meeting on aprotinin.

*Case presentation: The Very Old (including risks of thrombosis)*  
*Speaker: G Hessel*

The audience will be presented with a case of an elderly patient presenting for heart surgery. Critical decision making intersections will be identified with a focus upon the need for cerebral/ renal oxygen delivery yet with remembrance of the relationship of blood transfusion to bad outcomes. The audience will be encouraged and led through a structured discussion of these difficult clinical decisions.

*Case presentation: The Very Sick*  
*Speaker: A DeAnda*

The audience will be presented a case with very challenging critical heart disease and the audience will be encouraged to actively express their opinions. The decisions regarding blood management are not so simple as what should the transfusion trigger be on or off bypass. The overall plan, including the per-operative preparation, selection of anti-fibrinolytic, perfusion techniques etc., will all be touched on in the context of critical illness.

*Case presentation: The Jehovah's Witness*  
*Speaker: A Hill*

The audience will have to engage in a thought provoking discussion of how they would handle a JW patient in whom transfusion and coagulation blood products are simply not an option, when do you say yes versus now, too risky for a patient. This will be a case discussion but the audience will learn of new and old data regarding outcome for these challenging cases.

*HITT/Heparin alternatives*  
*Moderator: B Spiess*

*Thrombocytopenia and Heparin: What Does it Mean?*  
*Speaker: P Murphy*

At the conclusion of the session, the participant will be able to list the etiologies of thrombocytopenia that occur in cardiovascular patients. Tests used in order to make the diagnosis of HIT and HIT2 will be discussed.

*Outcomes in cardiac surgery patients with heparin antibodies*  
*Speaker: B Spiess*

At the conclusion of the session, the participant will have reviewed the epidemiology of heparin antibody testing. Sensitivity and specificity and predictive ability will be emphasize.

*Heparin alternatives for anticoagulation in all patients and in the CV surgery patient.  
Speaker: G Murphy*

At the conclusion of the session, the participant will know many drugs that can be used as alternatives to heparin for anticoagulation both in the general medical patient and in the cardiac surgical patient. An emphasis will be placed on those agents used most frequently in CPB.

*Perfusion and CPB conduct for a heparin-free bypass  
Speaker: A Hill*

At the conclusion of the session, the participant will understand the technical aspect of providing a heparin-free environment and circuit for CPB. Discussion will focus on bivalirudin and the modifications to circuitry that are needed to avoid stasis of blood.