

Introduction

Introduction – Part II

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THROUGHOUT OUR HEART WEEK OF 2007, I WAS struck with a recurring theme in the meetings in both St. Petersburg and Orlando. There has been a gradual shift away from research emerging from single centers, and produced by those working in the same discipline, to collaborative efforts combining research between centers and across disciplines. Both during the formal sessions, and informally during the breaks and receptions, scientists from multiple institutions, including cardiologists, surgeons, specialists in intensive care, nurses, and anaesthesiologists, were sharing experiences and analyzing controversies in management. These collaborations set the stage for improved multidisciplinary care, cross-training of various students in nursing and the medical and surgical subspecialties about each others' work, and promoting future research endeavours. Of the many solutions, cross-disciplinary and cross-center research collaboration are crucial to the advancement of the field. In this section of the Supplement, the 8 topics discussed are broad in scope, and include 37 collaborators from 13 different institutions.

Management of two congenital cardiac malformations is addressed in some detail, specifically coronary arterial disease in children, and the patent arterial duct. The management of coronary arterial disease in children is an area containing little evidence-based medicine, but one that engenders on-going controversy. Alan Friedman, along with Mark Fogel, Paul Stephens, Dave Nykanen, Jim Tweddell, Tim Feltes and Jack Rome, review the current literature, and summarize the topic as was presented during Heart Week 2007. At the meeting in Orlando, one of the most energetic and spirited debates pitted Tim Feltes against Jim Tweddell on the topic: Should asymptomatic children with a coronary artery arising from the wrong aortic sinus of Valsalva undergo surgery? In the mind of this reviewer, the audience was not convinced in either direction, the result was a draw, and the controversy continues, though Tim's delivery and animated

presentation certainly won on the basis of points awarded for style! The current management of the patent arterial duct is much less controversial, and Jorge Giroud and Jeff Jacobs present a cogent algorithm for treatment and management.

Two important and emerging challenges in delivery of care are then presented by investigators with extensive experience. The extreme variability in our current practices for treatment of children with hypoplastic left heart syndrome is emphasized in the results of an international survey of over 50 institutions that care for these neonates. While there are some areas for which there is consensus in management, the majority of our practices are variable between and within centers. These results emphasize that large multicentric trials and registries are necessary to improve care, and to answer important clinical questions, again emphasizing the shift from analysis of experiences of single centres to multi-centric and multi-disciplinary collaboration. Joe Dearani, along with Gary Webb, Heidi Connelly, Hector Fontanet and Rick Martinez, draw on the large clinical experiences from the Mayo Clinic, Toronto General Hospital, the Children's Hospital of Philadelphia, and the Congenital Heart Institute of Florida to discuss the current approach, successes, and failures in providing care for the growing population of adults with congenital cardiac malformations. They address important and contemporary issues, such as the various models for delivery of care for these patients, the development of an infrastructure of well trained subspecialists in adult congenital cardiac disease, as well as the identification of consultants in key specialties, and the growing understanding of the particular challenges of pregnancy in women with congenital cardiac malformations.

Vera Aiello, along with Diane Debich-Spicer and Bob Anderson, then provide a wonderful review on the continued importance of the autopsy examination in completely describing the congenitally malformed heart. They emphasize the necessity of

these examinations as an aid in teaching, and as a guide for continued improvements in surgical and catheter management. The ethical issues of retention of organs and informed consent, as well as financial issues, are discussed, and suggestions are made as to how it might prove possible to increase the number of autopsy examinations in the current era. Finally, new methods of autopsy examination, including the use of post-mortem imaging, are discussed under the new term *Virtopsy*[®].

The section is rounded out by three topics of intense interest to specialists in cardiac intensive care. Dave Cooper and his colleagues address the issue of extracorporeal membrane oxygenation, combining the experience from the Congenital Heart Institute of Florida with that amassed at Children's Hospital of Philadelphia, St Louis's Children's Hospital, and Children's Hospital, Boston. The topic of cardiopulmonary resuscitation, authored by Stacie Peddy and colleagues, is discussed in the setting of patients with congenitally malformed hearts, basing the discussions on the multidisciplinary and multi-centric experience from those working in Children's Hospital

Boston, Children's Hospital of Philadelphia, Sainte-Justine Hospital in Montreal, C.S.Mott Children's Hospital in Ann Arbor, All Children's Hospital in St. Petersburg, Monroe Carell Children's Hospital in Nashville, and Children's Hospital of Wisconsin in Milwaukee. Ravi Thiagarajan, along with Geoff Bird, Karen Harrington, John Charpie, Jim Steven, Rick Ohye, Mike Epstein, and Peter Laussen, combining the experience gained in Philadelphia, Boston, Montreal, Ann Arbor, and St Petersburg, close this section by tackling the problem of improving the delivery of safe care for our patients. Issues of inadequate safeguards for these patients have been prominent in the media, and have been highlighted in reports from the Institute of Medicine. Our authors discuss research on the causes of medical error, and propose concepts to design successful programmes to improve safety for the patients on a local level. These reviews highlight the fact that guidelines established for resuscitation in neonates and children with structurally normal hearts need to be modified in the face of congenital cardiac disease, many times on a case-by-base basis.