

Notes from the Course Director – What’s on Tap for Friday

By Gil Wernovsky, MD, RC



“The heresy of one age becomes the orthodoxy of the next.”

~ Helen Keller

Welcome to the half-way point of Cardiology 2007! An ambitious program is planned for today, followed by the Gala Reception from 7:00-8:30 pm and the First Annual Cardiology Recital—featuring a number of the faculty as musicians and vocalists at 8:30 pm! The discipline-specific breakout sessions in the morning will feature Drs. Rychik and Tian from the Fetal Heart Team at The Cardiac Center at The Children’s Hospital of Philadelphia performing live fetal imaging. Special thanks to Dr. Craig Fleishman from Arnold Palmer Hospital for Children and Women for his help with this important session. Our third debate (on public reporting of surgical results) will be followed by the Young Investigator Competition and the Featured Research Session.

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During lunch, Dr. Mike Brook will star as Alex Trebek as the host of Cardiology 2007 Jeopardy! During this game show format, 9 members of the faculty will show their skill, cunning and wit in trying to win the championship. It promises to be an entertaining show. Note that Poster Session B has begun today, and the scientists will be available at their posters from 1-2 pm. Following breakout sessions in echo, EP, ICU, cath and administration, a highly important and timely topic will be discussed: Improving Safety for Cardiovascular Patients. A terrific overview from Dr. Peter Laussen at Children’s Hospital, Boston will open the session. The session will culminate in a debate over the pluses and minuses of work hour restrictions. Drs. Friedman and Elliott promise to make this an entertaining debate, which we can continue over food and beverage in the exhibit hall.

Enjoy the day!!

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Double Outlet Right Ventricle” and “Coronary Artery Disease in Pediatric Patients”

By Laura Mercer-Rosa, MD and Julie Davis, MD

The first session, entitled “Double Outlet Right Ventricle (DORV),” was moderated by Dr. Jack Rychik. Professor Robert Anderson started the session discussing Embryology, Nomenclature and Controversies. He stressed that DORV is not a single isolated defect, such as TOF, but rather is a series of different relationships between the great arteries, where both are supported by the anatomic right ventricle, the VSD being the most important feature. Dr. Weinberg followed showing beautiful specimens, including DORV with: mitral atresia, VSD type, Taussig-Bing, L-looped RV, and straddling mitral valve. The echocardiography portion was presented by Dr. Meryl Cohen, who stressed that the heart of the matter in DORV is the VSD. The goals of echocardiographic evaluations are to demonstrate to the surgeon: ventricular size; VSD type, location and size; relationship of the great arteries to each other; and the pathway from the LV to the VSD. Dr. Del Nido concluded showing that the creation of a 3-D VSD baffle from the LV to the aorta or the pulmonary artery is a surgical challenge, so 3-D imaging is of paramount importance in the preoperative assessment of DORV.

Dr. Rome moderated the session on coronary artery disease in children. It started with Dr. Friedman reviewing normal coronary anatomy and then discussed anatomy, hemodynamics, and presentation of ALCAPA, single coronary (Pete “Pistol” Marinovich), coronary fistulae, and Kawasaki Disease. Dr. Frommelt discussed how to best echo coronaries and showed images of anomalous coronary arteries and Kawasaki Disease. This was followed by Dr. Weinberg showing superb anatomic specimens of ALCAPA, anomalous aortic origin of a coronary artery (AAOCA), Kawasaki Disease, and single coronary with fistula. Dr. Fogel subsequently advocated use of cardiac MR to delineate coronary artery anomalies in children and showed excellent images, including the “fly-thru” technique of 3-D coronary imaging. Dr. Hellinger then discussed advantages and disadvantages of cardiac CT and showed examples of coronary abnormalities, highlighting that anatomy and function can be obtained. Dr. Nykanen illustrated that coronary angiography may be useful as an additional imaging modality, especially in evaluation and potential intervention of several

coronary anomalies. Dr. Stephens discussed determinants and assessments of coronary flow, showing how to assess for myocardial ischemia and perfusion abnormalities and providing us with examples of abnormal evaluations. We concluded with the debate: “Should we operate on a child with AAOCA who is asymptomatic without evidence of ischemia?” Dr. Feltes argued that only those who have evidence of ischemia should have surgery, the major problem being that we do not know the true risk of a sudden catastrophic event; Dr. Tweddell countered that surgery should occur irrespective of ischemia, since there is an increased risk of ischemia and sudden death. *The winner by a small margin: Dr. Feltes.*

Highlights from the Featured Nursing Plenary Sessions

By Katie Dodds, RN, MSN, CPNP and Erika Wintering, RN



The Nursing Plenary sessions today got off to an exciting start with wonderful speakers and were well attended despite the lure of sun and pool. Barbara Medoff-Cooper and Mary Fran Hazinski moderated our first afternoon session which focused on the care of single ventricle neonates after the Stage 1 Norwood. Eliot May from Milwaukee kicked off a thorough discussion of low cardiac output in the early postoperative period and the usefulness of SVO2 monitoring and NIRS in early detection and thus early intervention. Erika Wintering, who joins us from Phoenix Children’s, followed with an excellent talk about preoperative and postoperative ventilation strategies, using examples and research to highlight key points.

Over the past 25 years mortality for HLHS has dramatically decreased and this has resulted in a shift in focus to looking at other important outcomes in these patients. The rest of this session addressed many of those outcomes. Barbara Medoff-Cooper presented late breaking results from her NIH funded feeding study of newborns with congenital heart disease and focused on some of the concerning results in this population for height, weight, and head circumference at 3 months and 6 months of age. Jo Ann Nieves from Miami Children’s helped all of us examine and consider the

variability and the similarities in our management nationally and internationally. All of us are interested in eliminating inter-stage mortality and Nancy Rudd and her team in Milwaukee initiated the first home monitoring program in the country dramatically decreasing their inter-stage mortality. Nancy discussed risk factors for mortality after discharge and shared the Milwaukee experience of closely monitoring weight and oxygen saturation after discharge. All of us would like to emulate this program. Last but not least and as eloquent as always, Kathy Mussatto closed this session with an insightful look at all of the quality of life issues facing our patients and families.

The second nursing plenary session focused on low cardiac output syndrome. Jo Ann led us through several strategies and examples of how to recognize this in our patients after surgery. Erika gave us a comprehensive review with lots of insight into the medical management of LCOS. Lisa Moore from ALL Children’s Hospital in St. Petersburg, FL closed the session with a eloquent look at the life saving modalities we are currently using in practice for patients in LCOS or even as a bridge to transplant. Kim Delaney was not able to join us for this session but is able to meet and talk with people individually and we promise will be featured next year.

The nursing reception, with good appetizers and of course a little vino, was well attended and we were all able to say hello to some old friends and meet some new ones as well. Saturday morning at 7am there is a Sunrise Session with Barbara Medoff-Cooper and Kathy Mussatto, bring your nursing research ideas and get one-on-one help with how to get started! Following the sunrise session is the Saturday nursing research plenary session. The top 2 nursing abstracts will be presented and the nursing research faculty at the conference will discuss how to get your “ideas off the ground, completed and published.” *Please join us!*

Career Planning for Trainees and Junior Faculty

By Kevin Whitehead, MD, PhD. and Jenifer Glatz, MD

The session began with Dr. Friedman focusing on choosing your career. He emphasized that there are an abundance of jobs. Keys to success include having clear goals, committing to a direction, and a decisive plan to attain those goals.

Next Dr. Mahony spoke on track and promotion. Increasing complexity of clinical care requires faculty to focus on 1 or 2 areas of expertise, including patient care, research, and education.

Dr. Jacobs talked about the three challenges facing clinicians today. He emphasized the



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importance of good mentorship, taking advantage of senior faculty, expecting setbacks, learning from others mistakes, and balancing career and personal life.

Dr. Byrne talked about becoming a NIH-funded clinical researcher. New initiatives within the NHLBI include programs for gene therapy, cell based therapies, the CTSA, New Investigators Payline guidelines (improving the funding rate for new investigators), and K mechanisms.

Dr. McQuinn, talking on bridging clinical and basic science, emphasized self-initiative, work ethic, finding a good mentor, making realistic plans, being flexible, and being appreciative of your opportunities. Dr. Gruber emphasized three things: mentorship, support from your institution, and life balance.

Dr. Epstein, talking on maintaining funding, emphasized the responsibility of all academia to publish their research and experiences. He discussed taking time to train well and enjoying it, networking, obtaining funding early, separating yourself from your mentor, and important strategies for grant writing.

Dr. Shirali discussed the career track of the clinical educator. This track is not funded, does not have protected time, and may garner less accolades early on than a more research-oriented track. He stressed understanding early on the requirements for promotion at your institution.

Dr. Cohen, on balancing family and career, stressed the differences in perceptions between men and women. She suggested getting outside help is crucial for sanity, keeping family dinners and one-on-one time with each child.

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Dr. Stevens, stepping in for Dr. Greeley, began part II of this session by discussing negotiation of salary and benefits and gave tips on track selection and areas where negotiation is possible.

Dr. Friedman gave excellent pointers on job interviews, including preparing with your mentor, having knowledge of the program, being prepared to discuss your goals, compiling a user-friendly CV, and having a set of basic questions prepared.

Dr. Greene gave tips from his experience from private practice over the last 15 years. It allows more control of business aspects, more involvement with personnel, and more schedule control. Disadvantages include academic stagnation and lack of time/resources for research.

Dr. Zales focused on his experience in transitioning from academic to private practice. From academics, he brought experience and expertise to a local community and had more autonomy.

Dr. Cohen discussed that research in private practice is possible and gave several examples of opportunities, including clinical trials, animal research and drug-company sponsored trials.

Selected Topics in Perioperative Care

By Geoffrey Bird, MD

Thursday afternoon's breakout session on "Selected Topics in Perioperative and Surgical Care," was an exciting update from many of the thought leaders in pediatric cardiac intensive care medicine.

"This ambitious session closed as a fascinating and extremely well orchestrated overview of our field's current state of the art. In addition, the collective call for further collaborative work on improving neurodevelopmental outcomes was quite compelling."

Charles D. Fraser, Jr. from Texas Children's Hospital led off the session with his presentation, "Is it time to change our approach to cardiopulmonary bypass?" With a philosophy that fosters change and the search for new solutions, Dr. Fraser pointed out that reducing brain injury, and not just improving survival, is our imperative as a field. Patient related factors are an increasing concern, rather than just surgical or intraoperative factors. The audience was treated to a detailed outline of the Texas Children's Hospital approach to intraoperative support and coincident cerebral physiologic monitoring using the example of IAA repair.

Dean B. Andropoulos, also from Texas Children's Hospital, followed with a cogent outline supporting use of near infrared monitoring, and he joined Dr. Fraser's call for consensus and standardization in neurodevelopmental follow-up protocols. Dr. Andropoulos shared his center's well-organized and thorough approach including MRI, detailed examination by neurologist, enrollment in cardiac neonate follow-up clinic, and administration of Bayley scales III at 1, 3, and 5 years of age.

Four speakers followed with brief thoughts in response from their own centers; including Gil Wernovsky, Philadelphia; Jim Tweddell, Milwaukee; Peter Laussen, Boston; and John Charpie, Ann Arbor.

Lara Shekerdeman, from Royal Children's Hospital, Melbourne, provided a riveting and broad review of multiple studies involving MRI and EEG. She issued a compelling call for our field to focus neurologic studies on imaging, clinical assessment, and, most germane to our families, what they can expect for their child in terms of quality of life. Dr. Shekerdeman joined prior speakers in calling for collaboration towards a more formal approach to neurodevelopmental follow-up.

Andrew Redington, from The Hospital for Sick Children, Toronto, gave a riveting discussion of both local and remote ischemic preconditioning (rIPC), and treated the audience to the latest work on ischemic per-conditioning. Dr. Redington concluded that rIPC shows some promise in terms of both an improved understanding of postoperative responses and susceptibility, but also offers a way to shift our field's concentration from treating consequences to primary prevention of ischemia reperfusion injury.

James Tweddell, from Children's Hospital of Wisconsin in Milwaukee, gave a thoughtful review of the challenges facing practitioners looking for data and consensus

on aprotinin. Methodologic flaws were carefully outlined and represented, for this author, a model of critical appraisal of the literature. For some pediatric heart programs, aprotinin has value in limiting bleeding, reducing transfusion requirements, and as an anti-inflammatory, but new contraindications (limiting re-exposure) and growing legal issues may be insurmountable challenges.

Andrew Atz, from the Medical University of South Carolina, closed the session with a fascinating discussion of the role for monitoring mixed venous oxygen saturation (MVO2) in the ICU. Given the challenges of direct measurement of cardiac index, MVO2 is used by many centers as a marker of the adequacy of cardiac output – and one that may be more useful than delayed markers like lactate and BNP. Dr. Atz beautifully outlined techniques for SVO2 monitoring, and the trends one can expect to guide therapy in response to milrinone, inhalational gases, and phenoxybenzamine among others.

This ambitious session closed as a fascinating and extremely well orchestrated overview of our field's current state-of-the-art. In addition, the collective call for further collaborative work on improving neurodevelopmental outcomes was quite compelling.

FRIDAY AFTERNOON PROGRAM AT A GLANCE

Noon Box Lunch/"Cardiology Bowl"-Grand Harbor South

In a game-show format, contestants will be quizzed on topics ranging from the history of pediatric heart surgery to difficult cases and cardiovascular physiology.

1-2 p.m.—Visit the Exhibition/Poster Presentations

2-4 p.m.—Simultaneous Breakout Sessions

- **Ballroom:** Postoperative Care
- **Asbury A:** Interventional Catheterization
- **Asbury B:** Show Me the Money – Industry and Philanthropic Support of Cardiovascular Programs
- **Asbury C:** Electrophysiology
- **Asbury D:** Echocardiography

4-4:30 p.m.—Break/Visit the Exhibits

4:30-6:30 p.m.—Improving Safety for Cardiovascular Patients—Grand Harbor South

- **Changing Culture for Continuous Quality Improvement**
- **How May We Improve Communication During Patient Handover?**
- **Nosocomial Infections: Are they Inevitable or Preventable?**
- **Ensuring Patient Safety During Clinical Trials**
- **Developing and Maintaining an Effective Quality Assessment and Improvement Program**
- **Rational Work-hour Assignments for Bedside Nurses: What's the Rationale?**

6:30 p.m.—Debate of the Day: "Mandatory Work Hour Restrictions are Good for Patients and Doctors"

7-8:30 p.m.—Reception

8:30 p.m.—Cardiology 2007 Ensemble—Grand Harbor South

See Cardiology 2007 program for details

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