Pediatric Cardiology and Adult Congenital Heart Disease

Selected Highlights Presented by
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Working Group
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Total abstracts submitted: 295
Total abstracts accepted: 99
No Conflicts
Catheter Closure of ASD’s
(8 abstracts)

• Catheter closure of ASD’s and PFO’s:
  – Preserves ventricular function compared with surgery
  – Reduces migrainous events
  – Reduces RV size and improves symptoms…even in patients older than 50 or 60 years.

• Adequate septal rim may or may not be necessary for closure success and device stability
Pacing in Pediatric Patients

• 6 pts with complete AV block, BiVent pacing
  – All treated for heart failure prior to conversion
  – E.F. increased: 34% to 57%
  – 5 of 6 had improved growth
  Rosenthal DN, Dubin AM, et al., Stanford University, Univ of Chicago

• Multisite pacing in 30 pts. with univentricular heart
  – Cardiac index increased in 15 of 16 pts.
  – Decreased QRS duration in 28 of 30 pts.
  – Asynchrony by 3D echo decreased in 9/10 pts.
Pacing in Pediatric Patients

• Acute RV resynchronization
  – 8 pts. (7.5 mos) with right ventriculotomy
  – Paced in CICU
  – AV sequential pacing improved hemodynamics
  – No demonstrated benefit with resynchronization

Cooper DS, et al., Cincinnati Children’s Hospital
Pulmonary Valve Replacement

• Reduces RV volume and shortens QRS
  – Van Huysduynen BH, et al. Leiden University, Netherlands

• Improves functional capacity (max VO$_2$)
  – Yetman AT, et al., Univ. of Arkansas, Little Rock AR

• Normalizes RV volume if performed before RV reaches 150% of normal size
  – Therrien J, et al., Toronto General Hosp., Toronto, Canada

• Mechanical valves in the pulmonary position
  – 10 pts., 8.3 ± 7.7 yrs f/u
  – One valve replacement (outgrown), no failures
  – Shulak JM, et al., Mayo Clinic, Rochester, MN
Hypoplastic Left Heart Syndrome

- **Single series: 51 consecutive cases**
  - 50 of 51 hospital survivors
  - 27 of 50 (54%) had interstage events, 1 death
  - 49 of 51 survived stage 2 (Glenn) repair
  - Ghanayem NS, et al., Children’s Hosp. of Wisconsin, Milwaukee, WI

- **29 surgical centers:**
  - Better survival assoc w/ high institutional volume (range 25 – 100%)
  - No relationship to # of surgeons per center
  - Checcia PA, et al., St. Louis Children’s Hosp., St. Louis, MO

**Bottom line:** Importance of improvements in institution-based approaches
Outcomes in Repaired CHD

• **Neurodevelopmental outcome after repair of total anomalous pulmonary venous return**
  - 30 children, 11 yr follow-up
  - Lower performance IQ and impaired fine motor skills
  *Kirshbom PM, et al., Children’s Hospital of Philadelphia*

• **Electrophysiologic assessment late after repair of total anomalous pulmonary venous return**
  - 29 children, non-invasive evaluation
  - 48 % sinus node dysfunction, 25 % chronotropic impairment
  *Tanel RE, et al., Children’s Hospital of Philadelphia*
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Repaired…

Yes

Cured…

NO
Fetal Cardiology

- 6 of 116 fetuses with CHD had restriction or closure of the foramen ovale
  - 4 of 6 died postnatally
  - Closure of the foramen can progress
- Suggest: serial assessments, ? Fetal intervention

Donofrio MT, et al, Virginia Commonwealth Univ., Richmond, VA
Fetal Cardiology

• Neonatal HLHS with restrictive foramen ovale, mortality >50%
• 6 fetuses with HLHS, 26 – 34 weeks
• Atrial septum punctured and dilated, transabdominal
  – No maternal mortality
  – 1 intrauterine death
  – 5 liveborn at term
• Fetal atrial septoplasty is feasible

CME completion slide