ASSOCIATION BETWEEN TECHNICAL PERFORMANCE SCORES AND NEURO DEVELOPMENTAL OUTCOMES AFTER CONGENITAL CARDIAC SURGERY

Moderated Poster Contributions
Poster Sessions, Expo North
Sunday, March 10, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Congenital Cardiology Solutions: Congenital Heart Surgery
Abstract Category: 13. Congenital Cardiology Solutions: Pediatric
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Background: Technical Performance Score (TPS) has been shown to have a strong association with early and late outcomes after congenital cardiac surgery with higher morbidity and re-intervention in children with TPS of Class 3 (major residual lesions). This study was designed to look at the impact of TPS on neurodevelopmental outcomes (NDO).

Methods: NDO testing at 1 year was offered to families of infants undergoing heart surgery, excluding those with trisomy 21, using Bayley Scale of Infant Development-III-Cognitive, Language and Motor standard scoring. TPS based on discharge echocardiograms are graded as Class 1 (optimal), Class 2 (minor residual) or Class 3 (major residual). Analysis of variance was used to test for association between TPS and NDO.

Results: 122 patients underwent NDO testing at median age of 16 months. 21(18%) had single ventricle palliation and 99(82%) had biventricular repair. 32(27%) were in RACHS-1 category 4 to 6. 100 had repair on cardiopulmonary bypass. Table 1 summarizes the mean scores across TPS classes with lower scores in class 3. There was no significant difference in NDO scores based on single ventricle or biventricular repair, or RACHS-1 categorization.

Conclusion: This data extends the observation that TPS exerts a strong influence on outcomes after congenital heart surgery. Children with significant residual lesions(class 3) following repair should be considered at increased risk of ND difficulties and be considered for prompt referral to early intervention programs.

<table>
<thead>
<tr>
<th>NDO</th>
<th>TPS Class 1 (Mean±SD) n=69</th>
<th>TPS Class 2 (Mean±SD) n=34</th>
<th>TPS Class 3 (Mean±SD) n=13</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSID- Cognitive</td>
<td>102±17</td>
<td>96 ± 17</td>
<td>91 ± 18</td>
<td>p=0.05</td>
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<tr>
<td>BSID- Language</td>
<td>96 ± 17</td>
<td>92 ± 18</td>
<td>88 ± 12</td>
<td>p=0.23</td>
</tr>
<tr>
<td>BSID- Motor</td>
<td>91 ± 15</td>
<td>87 ± 18</td>
<td>79 ± 19</td>
<td>p=0.08</td>
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</tbody>
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