Longitudinal Sleep Outcomes in Pierre Robin Sequence Infants Treated Conservatively
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INTRODUCTION
• The prevalence of Obstructive Sleep Apnea (OSA) in Pierre Robin Sequence infants (PRS) is reported in literature as 46 to 85%.
• Limited evidence regarding sleep outcomes of PRS infants treated conservatively (without surgery).
• Our goal is to examine outcomes in sleep architecture and respiratory parameters of PRS infants treated conservatively as a viable alternative to surgical intervention.

METHODS
• 13-year single institution retrospective study of 182 infants.
  • Included 23 infants with PRS with a diagnostic PSG (PSeₐ) at age < 6 months, and at least one follow-up polysomnogram (PSGₑ).
  • Excluded 159 PRS infants with a surgical intervention before or between studies or split night studies.
• Mixed model analysis was used to track developmental changes in sleep and respiratory parameters between both groups.

RESULTS
• Depicted in Tables 1, 2 and Figures 1,2.
  • Age groups:
    0-3 months: 20 infants (mean age 0.8±0.6)
    3-6 months: 6 infants (mean age 4.4±0.3)
    6-12 months: 21 infants (mean age 7.5±1.2)
    > 12 months: 6 infants (mean age 17.7±3.1)

CONCLUSIONS
• PRS infants treated conservatively have considerable resolution of OSA during the first year of life without surgical intervention.
  • Maximum improvement seen at 6-8 months of age.
  • Corresponding improvements in sleep efficiency and arousal index.
  • Normal developmental changes in sleep architecture are observed.

Disclosures and References
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References:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>0-3 mo</th>
<th>3-6 mo</th>
<th>6-12 mo</th>
<th>&gt;12mo</th>
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<tbody>
<tr>
<td>AHI (events/hr)</td>
<td>19.8</td>
<td>8.1</td>
<td>7.2</td>
<td>4.7*</td>
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<td>OAHI (events/hr)</td>
<td>12.8</td>
<td>5.3</td>
<td>3.9*</td>
<td>1.2*</td>
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<td>O2 saturation (%)</td>
<td>83</td>
<td>82</td>
<td>82</td>
<td>86</td>
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<tr>
<td>Avg ETCO2 (mmHg)</td>
<td>32</td>
<td>35</td>
<td>36*</td>
<td>40*</td>
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<tr>
<td>REM (%)</td>
<td>50</td>
<td>38*</td>
<td>31*</td>
<td>25*</td>
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<tr>
<td>NREM (%)</td>
<td>50</td>
<td>62*</td>
<td>69*</td>
<td>75*</td>
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<tr>
<td>Sleep Efficiency</td>
<td>69</td>
<td>79*</td>
<td>81*</td>
<td>84*</td>
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<td>Arousal Index</td>
<td>27.2</td>
<td>18.3*</td>
<td>12.5*</td>
<td>11.8*</td>
</tr>
</tbody>
</table>

Table 2. Changes in respiratory parameters with age. AHI: total apnea hypopnea index; OAHI: obstructive apnea hypopnea index; O₂: oxygen; Avg ETCO₂: average end tidal CO₂; REM: Rapid eye movement sleep; NREM: non rapid-eye movement sleep.
* Indicates p<0.05 compared to baseline.