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HUMAN MILK INTAKE IN PRETERM INFANTS: CORRELATION OF THE PRETERM INFANT BREASTFEEDING BEHAVIOR SCALE (PIBBS) AND TEST WEIGHING

Ann Gibbons Phalen, Ph.D, RNC, CRNP
Sponsor: Dr. Vinod K. Bhutani, MD, FAAP

Background
The PIBBS (Nyqvist et al., 1996) evaluates preterm infants’ breastfeeding behaviors. High PIBBS scores often are assumed to imply sufficient milk intake.

Purpose
This study tested the concurrent validity of the PIBBS against the criterion of volume of milk intake consumed by the preterm infant during breastfeeding as measured by test weighing.

Research Questions
Using a preterm infant population:
1a. Determine interrater agreement between investigator (PI) and individual lactation specialists using the PIBBS.
1b. Determine interrater agreement between PI and preterm infant’s mother using PIBBS.
1c. Determine interrater agreement between individual lactation specialists and preterm infant’s mother using PIBBS.

Method
PI and one of two trained lactation specialists observed 90 breastfeeding mother-preterm infant dyads at single breastfeeding sessions. PI, lactation specialist, and the mother scored the session using the PIBBS. Infants were test weighed before and after breastfeeding using an infant scale.

PIBBS Score Items

<table>
<thead>
<tr>
<th>PIBBS Item</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rooting</td>
<td>0-2</td>
</tr>
<tr>
<td>Areolar Grasp</td>
<td>0-3</td>
</tr>
<tr>
<td>Latched-on</td>
<td>0-3</td>
</tr>
<tr>
<td>Suckling</td>
<td>0-4</td>
</tr>
<tr>
<td>Longest Sucking Burst</td>
<td>0-6</td>
</tr>
<tr>
<td>Swallowing</td>
<td>0-2</td>
</tr>
<tr>
<td>Total Score</td>
<td>0-20</td>
</tr>
</tbody>
</table>

Results

1a. Substantial interrater agreement was found between PI (A) and lactation specialists (B & C).

<table>
<thead>
<tr>
<th>Interrater Agreement</th>
<th>Average (p&lt;.01)</th>
<th>A/C</th>
<th>PIBBS Score versus Milk Intake</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI vs B, C</td>
<td>11</td>
<td>28</td>
<td></td>
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<td></td>
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</tbody>
</table>

1b & 1c. Chance to slight interrater agreement was found between mothers and PI/lactation specialists.

2. Correlation between PIBBS scores and Milk Intake:
   • Statistically significant but low magnitude
   • Not clinically significant

3. No significant relationship was found between Milk Intake and PMA, BFE, or PNA.

Conclusions
• Direct observation and the use of observational instruments are not clinically useful in predicting milk intake in preterm infants.
• PMA, PNA, and BFE should not be used arbitrarily as predictor variables for the volume of milk intake in preterm infants.
• Test weighing is the most reliable method to measure milk intake.
• The PIBBS is a reliable instrument when used by trained lactation specialists but not predictive of milk intake in preterm infants.