A Retrospective Study of Feeding Practices and Growth of Preterm Infants Admitted to the Special Care Baby Unit at Whangarei Hospital

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Abstract

**Introduction:** Being born preterm places an infant at increased risk of post-natal growth faltering. The immature development of the gastro-intestinal system often in conjunction with feeding difficulties can result in inadequate nutritional intake. Therefore, close monitoring of feeding and growth during hospital admission in preterm infants is important to enable the provision of adequate nutrition support, with early interventions recommended to support optimal growth.

**Aim:** To investigate feeding practices, monitoring and growth outcomes of preterm infants admitted to the Special Care Baby Unit (SCBU) at Whangarei Hospital, New Zealand.

**Methods:** Retrospective data on feeding and growth outcomes was collected from medical notes of preterm infants admitted to SCBU for a minimum of 3 days between January 2013 and March 2014. Data collection on feeding practices included mode, type and duration of feeding during admission and upon discharge. Growth outcomes included body weight, length, and head circumference which are expressed as Z-scores using UK-WHO data. Days to regain birth weight was a further measure of growth outcomes. Data was collected on the monitoring of feeding practices and growth parameters as well as any referrals to paediatric dietetic services during admission.

**Results:** One hundred infants were recruited, 57 of whom were male. The median age of the infants was 35 weeks (range 25-36 weeks). Fourteen infants were born extremely premature and 86 were of moderate to late prematurity. Median length of SCBU admission was 14 days. Breastfeeding was initiated by 83% of the mothers. Seventy-six infants received enteral feeding with 45 infants commenced on expressed breast milk. On a median day of 9, 54 infants reached full enteral feeding volumes. Of the 79 infants discharged home, 47 regained birth weight prior to discharge. The mean change in z-score between birth and discharge was -0.49±0.16 with 19 infants decreasing by >1 z-score. During admission only 6/100 infants were referred to dietetic services. On
discharge, 73.1% were receiving some breast milk with 67.1% exclusively breastfeeding.

**Conclusions:** Preterm infants admitted to SCBU had high rates of breastfeeding initiation and nearly 3 out 4 infants were receiving some milk on discharge. However, prior to discharge nearly 20% could be identified at risk of growth faltering. This suggests that improvements could be made to the monitoring of feeding and growth of these infants prior to discharge and more referrals to dietetic services may be warranted.
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### Abbreviations

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<th>Full Form</th>
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<tbody>
<tr>
<td>BMI</td>
<td>Body Mass Index</td>
</tr>
<tr>
<td>BPD</td>
<td>Broncopulmonary Dysplasia</td>
</tr>
<tr>
<td>CRP</td>
<td>C Reactive Protein</td>
</tr>
<tr>
<td>DHB</td>
<td>District Health Board</td>
</tr>
<tr>
<td>EBM</td>
<td>Expressed Breast Milk</td>
</tr>
<tr>
<td>ELBW</td>
<td>Extremely Low Birth Weight</td>
</tr>
<tr>
<td>ESPGHAN</td>
<td>European Society of Paediatric Gastroenterology, Hepatology and Nutrition</td>
</tr>
<tr>
<td>GDM</td>
<td>Gestational Diabetes Mellitus</td>
</tr>
<tr>
<td>GI</td>
<td>Gastrointestinal</td>
</tr>
<tr>
<td>LBW</td>
<td>Low Birth Weight</td>
</tr>
<tr>
<td>NDHB</td>
<td>Northern District Health Board</td>
</tr>
<tr>
<td>NEC</td>
<td>Necrotising Enterocolitis</td>
</tr>
<tr>
<td>PNGF</td>
<td>Post Natal Growth Faltering</td>
</tr>
<tr>
<td>PPROM</td>
<td>Preterm Premature Rupture of Membranes</td>
</tr>
<tr>
<td>RDS</td>
<td>Respiratory Distress Syndrome</td>
</tr>
<tr>
<td>SCBU</td>
<td>Special Care Baby Unit</td>
</tr>
<tr>
<td>VLBW</td>
<td>Very Low Birth Weight</td>
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