Breastfeeding as a Protector Factor for Acute Bronchiolitis

Background and aims: The advantages of breastfeeding are largely documented. Amongst other possible effects it reduces the risk of infectious disease in infants. We evaluated the effect of breastfeeding in the length of stay for infants with moderately ill bronchiolitis.

Patients and methods: Prospective descriptive study including all moderately ill bronchiolitis infants admitted to our hospital between 2011–2014. They were grouped in exclusively breastfed or not. Severe bronchiolitis and patients with serious risk factors were excluded. The primary outcome was length of stay (LOS). The following variables were recorded: age, sex, atopic dermatitis, parental smoking, atopy in parents, number of siblings, RSV treatment received and clinical scale of bronchiolitis at admission.

Results: Among the 185 enrolled infants, 54.5% were exclusively breastfed. There were no statistically significant differences (p > 0.05) in: male gender (47% vs 44%), atopic dermatitis (31% vs 31%), smoking parents (37% vs 44%), parental atopy (31% vs 31%), number of siblings (0.66 vs. 0.68) day care attendance (16% vs. 10%) and percentage of positive RSV (61% vs 60%). The median LOS in the breastfeeding group was 3.14 days compared with 2.82 days in the other group (p = 0.004). There were statistically significant differences in median age (p = 0.000) and the severity at admission (p = 0.021).

Conclusion: In our series, breastfeeding does not protect from bronchiolitis. The breastfed group were admitted at a younger age which could explain their longer LOS. Interestingly, breastfed infants had a lower score of severity at admission suggesting a relative protective role of against severe bronchiolitis.

Abstract O-017 Table 1 Description of right ventricular function in infants with bronchiolitis with different respiratory support

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>CPAP(9)</th>
<th>BLPAP(10)</th>
<th>MV(11)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Days)</td>
<td>52</td>
<td>49</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Weight (Kg)</td>
<td>4.0</td>
<td>4.2</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>Base-to-apex length (cm)</td>
<td>25.6</td>
<td>27.8</td>
<td>28.4</td>
<td></td>
</tr>
<tr>
<td>Right sphericity index (1.49–2.34)</td>
<td>(1.7–2.85)</td>
<td>(1.52–2.64)</td>
<td>0.102</td>
<td></td>
</tr>
<tr>
<td>Right tricuspid annulus s’ (6.7–14)</td>
<td>(6.7–14.6)</td>
<td>(4.2–10)</td>
<td>0.035</td>
<td></td>
</tr>
<tr>
<td>Tricuspid annulus n’ (11.6)</td>
<td>(10.5)</td>
<td>8.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tricuspid E/A ratio</td>
<td>(9.6–15)</td>
<td>(7.5–16.9)</td>
<td>(4.5–10.1)</td>
<td>0.001</td>
</tr>
<tr>
<td>Mean (Range)</td>
<td>1.2</td>
<td>1.1</td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

Epinephrine Versus Placebo in Hospitalised Infants with Bronchiolitis Treated with Hypertonic saline solution

Background and aims: No bronchodilator nebulised in saline has significantly proven to be more effective than saline alone. The efficacy of adrenaline in hypertonic saline solution has not yet been studied. To determine the utility of nebulised adrenaline in hypertonic saline solution to treat acute bronchiolitis in moderately ill hospitalised infants.

Methods: Randomised, double-blind, controlled trial. 185 hospitalised infants (age 2.11 ± 2.23 months (mean ± SD)) with acute bronchiolitis received either nebulised 7 ml of 3% hypertonic saline (age 2.11 ± 2.23 months (mean ± SD)) with acute bronchiolitis received either nebulised 7 ml of 3% hypertonic saline solution with 3 mg of adrenaline (group SHH3%/+A; n = 94) or with 3 ml of placebo (group SHH3%+P; n = 91), in addition to routine therapy. Nebulisations were initially administered every four hours and adjusted thereafter according to clinical response. Severe bronchiolitis and patients with serious risk factors were excluded. The principal outcome measure was hospital length of stay (LOS).

Results: 30 echocardiographies were performed: 9 in infants with CPAP (4–8 cmH2O), 10 in BLPAP (13–16 cmH2O/6–8 cmH2O) and 10 in MV (PEEP 5–9 cmH2O and MAP 9–17 cmH2O). There was no difference in age or weight between the groups. The most relevant results are shown in Table 1.

Conclusions: As respiratory support increases, decreased systolic and diastolic RVF is observed by TDI in infants with severe bronchiolitis.

Right Ventricular Function in Infants with Severe Bronchiolitis and Different Respiratory Support

Background and aims: Cardiac dysfunction during bronchiolitis has been reported but few studies have assessed right ventricular function (RVF). The aim of this study was to assess RVF in infants with severe bronchiolitis with different respiratory support.

Methods: Prospective study of under 3-month-old infants admitted to the PICU for severe bronchiolitis. Patients were classified in 3 groups according to the respiratory support: CPAP, bilevel positive airway pressure (BLPAP) and mechanical ventilation (MV). If the respiratory support was changed, echocardiography was repeated. Morphology and systolic and diastolic function were evaluated by echocardiography including Tissue Doppler imaging (TDI).
36%), parental atopy (29% vs 31%), breastfeeding (56% vs 53%), number of siblings (0.68 vs 0.72), day care attendance (14% vs 10%), clinical scale at admission (5.24 vs 5.36) or percentage of positive RSV (60% vs 61%).

Conclusions The use of nebulised adrenaline in hypertonic saline solution may significantly reduce the length of stay among hospitalised infants with moderately ill acute bronchiolitis.

Abstract 0-019 VIRAL RESPIRATORY TRACT INFECTIONS RESULT IN SIGNIFICANT RESPIRATORY MORBIDITY IN NICU INFANTS: A MATCHED CASE-CONTROL STUDY

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Introduction There is very little data available on the impact that viral respiratory tract infections (VRTIs) have on neonatal morbidity during their NICU stay.

Hypothesis NICU patients with proven VRTIs have significantly worse respiratory outcomes until the time of discharge from hospital.

Methods We conducted a retrospective case-control study, at two large UK tertiary centres, of all NICU patients with multiplex PCR confirmed VRTIs between 2007 and 2013. Two controls per case were matched for centre and gestation.

Results 255 babies (86 cases and 169 controls) were identified with a median gestation of 29 weeks (IQR 26–34) for both groups. No differences were noted between groups in birth weight, antenatal steroids, maternal smoking or number of siblings. 71% of cases had rhinovirus, 8% RSV and 6% H1N1. Fewer cases had positive blood cultures during their admission (53% vs 54%), number of siblings (0.68 vs 0.72), day care attendance (14% vs 10%), clinical scale at admission (5.24 vs 5.36) or percentage of positive RSV (60% vs 61%).

Conclusions The use of nebulised adrenaline in hypertonic saline solution may significantly reduce the length of stay among hospitalised infants with moderately ill acute bronchiolitis.

Abstract 0-019 Table 1

<table>
<thead>
<tr>
<th></th>
<th>Case (n = 86)</th>
<th>Control (n = 169)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilation days (median, IQR)</td>
<td>7 (2–22)</td>
<td>2 (0–4)</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>CPAP days (median, IQR)</td>
<td>14 (0–35)</td>
<td>5 (0–33)</td>
<td>0.05</td>
</tr>
<tr>
<td>Supplemental oxygen (median, IQR)</td>
<td>13 (2–37)</td>
<td>2 (0–32)</td>
<td>&lt; 0.0001</td>
</tr>
</tbody>
</table>

especially those <28 weeks gestation who required re-ventilation (38%). Cases required a significantly greater number of days of respiratory support (median 21 vs 7, p < 0.001 see table) and more were discharged on home oxygen (35% vs 18%, OR 2.54 95% CI 1.4–4.7, p < 0.01). Mortality did not differ between groups (3/86 and 11/169).

Discussion This is the largest study of VRTIs in this population to date and demonstrates significant respiratory morbidity with rhinovirus being the dominant pathogen. We need to explore better ways of minimising the impact of VRTIs in this vulnerable population.

H-020 HUMAN CORONAVIRUSES INFECTION IN ACUTE LOWER RESPIRATORY TRACT INFECTION IN CHILDREN

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Objectives To explore the effects of HCoVs (including HCoV-OC43, HCoV-229E, HCoV-NL63 and HCoV-HKU1) in acute lower respiratory tract infection (ALRTI) in children and to investigate the clinical features of paediatric ALRTI caused by HCoVs.

Methods Total 3503 cases with ALRTI from March 2007 to March 2010 in Beijing Children’s Hospital Affiliated to Capital Medical University were enrolled into this study. One nasopharyngeal aspirate specimen was collected from each patient. PCR (or RT-PCR) were used to detect respiratory viruses including respiratory syncytial virus, human rhinovirus, influenza virus type A, B and C, parainfluenza virus type 1–4, adenovirus, enterovirus, human coronavirus, human metapneumovirus and human bocavirus. Clinical manifestation and laboratory findings of patients with HCoVs were analysed by using SPSS 19.0 for Windows (SPSS Inc., USA).

Results The overall positive rate of HCoVs infection was 3.77%. Most cases with HCoVs infection were under 3 years old. The ratio between male and female were 2:3:1, and the rate of co-infection with other respiratory virus in patient infected HCoVs was 65.2%. The positive rate of HCoV-OC43 and HCoV-229E were higher than that of HCoV-NL63 and HCoV-HKU1. There were no significant differences of clinical manifestations, laboratory findings and severity between ALRTIs caused by HCoVs and RSV.

Conclusions The overall infection rate of HCoVs in ALRTI in children was low. The clinical manifestations, laboratory findings and severity of ALRTI caused by HCoVs were comparable to that of ALRTI with RSV infection in children.

Bronchopulmonary Dysplasia

H-021 PREVENTION OF BRONCHOPULMONARY DYSPLASIA (BPD) IN VLBW INFANTS WITH SEVERE RDS – A RANDOMISED TRIAL OF A NEW THERAPEUTIC REGIMEN

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