

HITH patients were older, more likely to have failed prior oral antibiotics, less likely to have periorbital rather than limb cellulitis. Inpatients required longer IV treatment. Readmission rates, adverse events and rates of change of treatment were similar.

Conclusion Some children with moderate/severe cellulitis can be treated via HITH with IV ceftriaxone in this non-randomised study however further prospective work is required to define the most appropriate sub-group.

Primary Care: Infections

PS-374a PREDICTORS OF BACTERIAL COMMUNITY ACQUIRED PNEUMONIA IN CHILDREN: PRELIMINARY RESULTS FROM CAPES (COMMUNITY ACQUIRED PNEUMONIA AETIOLOGY STUDY)

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Background The majority of childhood community acquired pneumonia (CAP) in developing countries is believed to be bacterial in origin. However, the predictors of bacterial versus non-bacterial (viral) pneumonia are not clearly defined. This is essential for judicious use of antibiotic therapy.

Objective To determine the microbiologic aetiology of childhood CAP in India, and determine the predictors of bacterial pneumonia.

Methods Children (1 month–12 years) fulfilling World Health Organisation criteria for pneumonia (cough or difficult breathing, and tachypnea; for <7 days) were enrolled through a two-year (April 2011–March 2013) surveillance programme. Pneumonia severity was assessed using WHO criteria. Nasopharyngeal aspirate (NPA) culture, blood culture, IgM anti-Mycoplasma pneumoniae and IgM anti-Chlamydia pneumoniae were examined. Demographic characteristics, clinical profile, presence of 'risk factors', clinical examination findings, and radiographic features were evaluated as predictors of bacterial aetiology.

Results 2333 children with CAP were enrolled. 61% were 5–12 years. Figure 1 presents the pneumonia severity. Bacterial pathogens were isolated in 12.7% NPA cultures with Pneumococcus (n = 223), Staphylococcus aureus (n = 27), and Haemophilus influenzae (n = 23) predominating. Blood culture yielded bacteria in only 3.3%. S. aureus (n = 25), Gram negative bacilli (n = 21), and Alpha-hemolytic Streptococcus (n = 15) predominated.

Pneumococcus (n = 3) accounted for a minority. Serology for Mycoplasma and Chlamydia were positive in 4.4% and 1.6% samples respectively (Figure 2A,2B).

Table 1 highlights the unadjusted odds ratio for various factors explored as predictors of bacterial aetiology. Exposure to over-crowding at home appeared to be associated with a lower risk of bacterial aetiology, whereas exposure to tobacco smoke was associated with higher risk. None of the other factors predicted bacterial aetiology.

Conclusion The majority of childhood community acquired pneumonia appears to be non-bacterial in origin. Bacterial aetiology could not be predicted by demographic, clinical, or radiographic features, that are usually believed to be associated with bacterial aetiology.

Ventilation

PS-375 CAN LUNG ULTRASOUND CHANGE RESPIRATORY DISTRESS MANAGEMENT IN NEWBORNS?

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Background Lung ultrasound (LUS) has become an important method for diagnosis and monitoring of lung disease. Advantages over chest radiography include precision, low cost, simplicity, bedside care and specially avoids radiation.

Respiratory failure in late preterm infants (>32 weeks gestational age) and term infants is usually based on clinical and radiological (x-ray) manifestations.

However etiologic diagnosis in the early stage is difficult (respiratory distress syndrome (RDS), surfactant consumption or transient tachypnea) raising doubts in treatment (ventilation, surfactant administration, antibiotics) and short and medium term evolution.

Aims 1. Assess whether LUS is as effective as the usual clinical diagnostic methods in the neonatal respiratory distress in late pre terms infants and term infants.

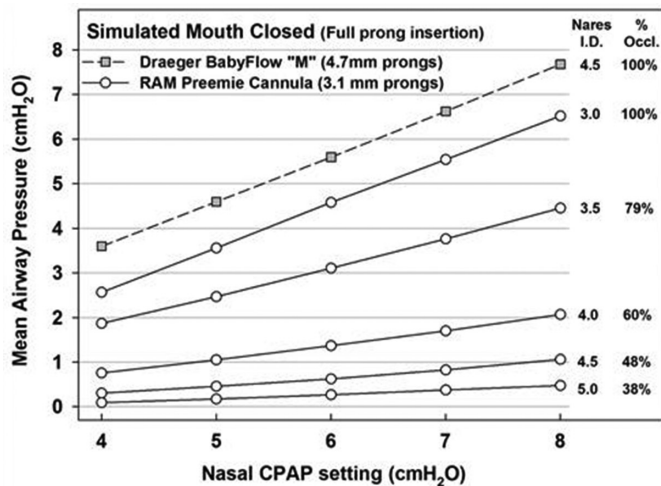
2. Check if initial LUS has a prognostic value in the need for respiratory support.

Materials and methods From January through April 2014 were enrolled all late preterm infants and term infants consecutive admitted in NICU with respiratory distress (prenatal malformation diagnosis were excluded).

A blind neonatology performed LUS at admission and through first hours income without interrupting routine neonatologist clinical management.

Abstract PS-375 Table 1

LUS diagnosis	Number of cases	Concordance with clinical diagnosis (%)	x-ray (%)	performed	Non invasive ventilation (NIV)	Hours of NIV (mean)	Mechanical ventilation (MV)	Hours of MV (mean)	Surfactant
NNT	28	93% NNT	96%		96%	7.4	0%	0	0%
RDS	9	100% RDS	100%		100%	116.8	78%	84.3	89%
MAS	2	100% MAS	100%		100%	60	100%	84	0%
BL+	3	33% NNT	100%		100%	12.6	0	0	0%
BL	2	50% NNT	100%		50%	4	3.5	0	0%
AL	5	100% Normal	80%		100%	3.5	20%	3	0%
NT	1	100% NT	100%		0%	1	0%	0	0%



Abstract PS-376 Figure 1

Results 50 patients were enrolled (53 male). Main results are shown in table 1. LUS diagnosis were made based in Lichtenstein and Coppeti standards.

Conclusions Lung ultrasound can differentiate those patients with NNT from other causes of neonatal respiratory distress may be an extremely useful tool for respiratory prognosis and can reduce the number of chest radiographs performed in these patients.

PS-376 NON-INVASIVE VENTILATION IN NEONATES: EFFECT OF NASAL CANNULA SIZE, INSERTION DEPTH AND NARES DIAMETER ON MEAN AIRWAY PRESSURE - AN IN-VITRO STUDY

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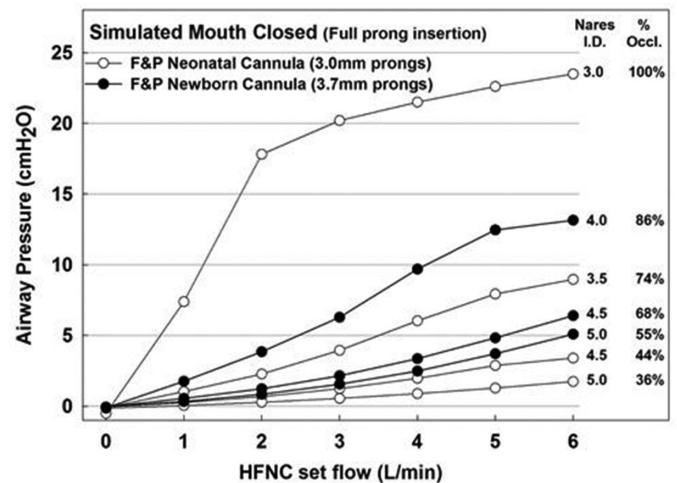
Background Increased neonatal Non-Invasive Ventilation (NIV) use, such as nCPAP and high flow nasal cannula (HFNC) prompted re-evaluation of nasal interface devices – specifically short bi-nasal prongs, and their size and fit relative to the nares.

Objective To quantify the effect of nasal prong size and insertion depth on generated mean airway pressure (MAP) during NIV.

Design/methods A Dräger traditional nCPAP interface, three sizes of RAM cannulae (Neotech, Valencia, CA, USA) and two Fisher and Paykel (FP) (Auckland, NZ) HFNC cannulae were tested with 8 simulated nares sizes. A simulated nasal airway was connected to an active lung model set at: Vt 8–10 ml, 60 b/m, Ti 0.35–0.40 s. A Dräger Evita XL ventilator delivered 4,5,6,7 and 8 cmH₂O to the RAM and the Dräger nCPAP cannulae and a FP HFNC system delivered 1–6 L/m flows. MAP was measured for open and closed-mouth conditions.

Results MAP decreased progressively as the percent nares occlusion (%Occl) decreased. At one-half insertion and closed-mouth conditions, close fitting prongs with high% Occl yielded MAP's of one-half of set CPAP levels. Delivered MAP's were significantly lower during open-mouth condition using either HFNC or CPAP cannulae. MAP increased with both flowrate and% Occl. A rapid rise in pressure was associated with%

Occl's >74%. Complete nares occlusions generated the highest pressures. Simulated closed-mouth produced 12 ± 7 SD



higher MAP's than open-mouth over all%Occl's at HFNC flows >1 L/m.

Conclusion RAM 'CPAP' does not deliver MAP as effectively as standard nasal prong CPAP. Optimum delivered airway pressure is dependent on appropriate %Occl, insertion depth and NIV settings.

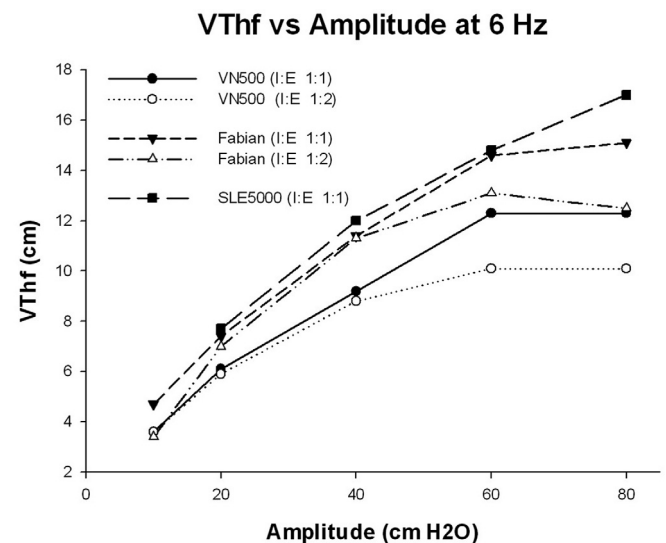
PS-377 WITHDRAWN

PS-378 IMPACT OF AMPLITUDE, FREQUENCY AND I:E RATIO ON TIDAL VOLUME IN HIGH FREQUENCY VENTILATION (VTHF) USING DIFFERENT HYBRID NEONATAL VENTILATORS

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Background and aims High frequency ventilation (HFV) is frequently used in both term and preterm newborns. Hybrid neonatal ventilators capable of both HFV and conventional ventilation are currently available with different mechanisms for



Abstract PS-378 Figure 1