pressure was followed by rarefaction as the wave propagates through the air system. The waveform without the lung model, see figure, is similar to an under-damped mechanical oscillator. Adding the lung model resulted in an over-damped system and appeared to act as a RCI filter removing the high-frequency components. A typical sharp pressure rise was 19.8 cmH₂O with a calculated value of 17.1 cmH₂O.

Conclusions: The “water hammer” effect can account for the sudden oscillations in Paw. Lung mechanics dampen these pressure oscillations suggesting that the stiffer the lung, the greater the oscillations in Paw.

[HABCPAP]

[Pressure Signal Overlay]

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WHEN TO TREAT NEONATAL JAUNDICE: IS THERE ANY EVIDENCE?

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Objectives: To analyse if the currently used jaundice action charts are evidence based.

Methods: We contacted 72 neonatal units in the Great Britain and enquired about the unit guidelines for management of neonatal jaundice. The jaundice action charts were analysed to explore the variation between different charts. The time at which the threshold value for treatment reached a plateau was recorded.

Results: Of the 72 units contacted 46 responded with charts. Four neonatal units were using formulas and one hospital was using separate chart for each gestation. The data displayed wide variation in treatment levels (phototherapy and exchange transfusion) at 12 to 168 hours in the three gestational groups studied (28, 32 weeks and term). There was no reference of evidence quoted in the jaundice action charts.

[Term phototherapy data]

[28 week exchange transfusion data]

The median plateau time was also analysed and for phototherapy this corresponds to 72 hours for all three gestations. For exchange transfusion the median time of plateau was highest for the term babies and lowest for 32 weeks gestation.

Conclusion: Jaundice action charts reviewed in our study showed significant variation in the threshold for treatment of neonatal jaundice. Both the studied parameters (variation in threshold and the median time to plateau) point towards the fact that the charts being used in the neonatal unit are not evidence based and need modification.

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PRO-INFLAMMATORY CYTOKINES IN CSF/BALF ARE SIMILAR AT COMPRESSION:VENTILATION RATIO 15:2 VERSUS 3:1 IN ASPHYXIATED NEWBORN PIGLETS WITH CARDIAC ARREST

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Background and aim: The ideal ratio of chest compressions to ventilations (C:V ratio) during

neonatal cardiopulmonary resuscitation (CPR) is unknown. The aim of the study was to investigate the C:V ratios of 15:2 and 3:1 in terms of time to return of spontaneous circulation (ROSC) and expression of pro-inflammatory cytokines in a piglet model of cardiac arrest following severe asphyxia.

Methods: Twenty two Noroc pigs (age 12-36 h) were anaesthetized and mechanically ventilated followed by progressive asphyxiation until asystole occurred. CPR was performed by positive pressure ventilation (21% O₂) and cardiac compressions at a C:V ratio of 3:1 (n=11) or 15:2 (n=11). Protein concentrations of interleukin-1 β (IL-1 β) were measured in cerebrospinal fluid (CSF) and bronchoalveolar lavage fluid (BALF); and interleukin-8 (IL-8) and tumor necrosis factor- α (TNF α) were measured in BALF only using commercially available ELISA kits for porcine samples.

Results: Two of the animals in each group did not achieve ROSC after 15 minutes of CPR, and were excluded from the analyses. Mean time (SD) to ROSC for the 3:1 group was 204 s (153) and 250 s (144) for the 15:2 group (p=0.52). There was no difference between the two groups in any of the cytokines measured, neither in CSF nor in BALF. (Table will be included in poster)

Conclusion: Time to ROSC and expression of pro-inflammatory cytokines in the brain (CSF) and lungs (BALF) were comparable between groups possibly indicating that the C:V ratio of 15:2 is as safe and effective as 3:1.

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ASSESSMENT OF CHEST RISE DURING POSITIVE PRESSURE VENTILATION IN THE DELIVERY ROOM

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Background: Current guidelines suggest a role for clinical assessment of chest rise in determining adequacy of positive pressure ventilation (PPV). However, these guidelines do not state how chest rise should be assessed. We compared the clinical