and interrelationship between choride and sodium intakes. Indeed, especially in presence of co-morbidities as PDA or dehydration, both these factors can interfere with acid base homeostasis by modifying plasma chloride and SID.

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A NOVEL DEVICE TO ENABLE THE ACCURATE WEIGHING OF VENTILATED SICK PREMATURE NEONATES OBTAINING THE NEED FOR DISCONNECTION FROM VENTILATION

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Background: Accurate weight measurement facilitates optimum care of the preterm infant, but can be problematic. Incubator scales are inaccurate if infants are connected to ventilators, while disconnection from the ventilator to weigh on stand alone scales risks destabilising sick infants. We developed an adjustable device, to use in conjunction with incubator scales, to eliminate this problem.

Aim: To compare the accuracy, when weighing ventilated infants, of incubator scales alone and in combination with this device.

Methodology: Infants were weighed while connected to the ventilator using the incubator scales alone then in combination with the device. Infants were then disconnected from the ventilator for weighing on stand alone electronic scales (the true weight) A feasibility study using manikins gave statistically significant results Subsequently using the above methodology we obtained 41 sets of weights on 22 pressure ventilated infants.

Results: The data were analysed using Stats direct, and displayed using the Bland Altman method. With incubator scales alone the mean error in weight was 43.5g (2SD -28 to +115g). With the adjustable device mean error -5.6g (2SD -36 to +25g). An F-test for variance showed that this improvement in accuracy was highly statistically significant ($p < 0.0002$).

Conclusions: Results indicate that an adjustable device can be used to correct the error in weights obtained from incubator scales in ventilated neonates and obviate the need for disconnection from ventilation. The HFOV arm of the trial is still

ongoing but the interim results indicate a highly statistically improved accuracy in incubator scale weights on oscilated premature neonates when the device is used.

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FLUID BALANCES SHOW POOR AGREEMENT WITH DAILY BODY WEIGHT CHANGES IN SICK NEONATES

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Background: Fluid balance monitoring is a commonly used complex, time-consuming and therefore expensive method to assess patient fluid volume status. In clinical practice fluid balances commonly appear to be inaccurate. Studies on the reliability of fluid balance are lacking however, particularly in newborns.

Aim: To determine the accuracy of the fluid balance in sick newborns.

Methods: Fluid balance totals (ml/day) were compared to daily body weight changes (g/day) in sick newborns admitted to neonatal high care. Correlation coefficients and Bland-Altman plots were used to assess the agreement between fluid balance and daily weight changes. We chose 50 ml as the clinically relevant limit of agreement.

Results: In 170 patients, 482 fluid balances and weight differences over the same period were recorded. The correlation between fluid balance and weight change was moderate $r=0,65$ ($p < 0,01$). The difference between the weight change and fluid balance was more than 50 ml (the limit of agreement) in 40% of the cases, with 95% of the differences ranging from -125 to +104 ml.

Conclusion: Agreement between fluid balance totals and daily weight changes is poor. Fluid balances both under- and overestimated weight changes in unpredictable patterns. Because of the inaccuracy of this time-consuming and complex method, recording a fluid balance is not recommended in neonatal practice.