LVO. Using TDI may improve the identification of cardiac dysfunction and guide further management.

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O-218 THE EFFECT OF CAFFEINE ON DIAPHRAGMATIC ACTIVITY IN PRETERM INFANTS

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Background Preterm infants born with a GA <32 weeks are at high risk of developing central apnea of prematurity (AOP). Treatment with caffeine reduces central AOP by stimulating the breathing centre. Animal studies suggest that caffeine improves contractility of the diaphragm. We have determined the effect of caffeine on diaphragmatic activity in preterm infants.

Methods Spontaneously breathing preterm infants <32 weeks treated with an intravenous loading dose (10 mg/kg) of caffeine base for central AOP were eligible for the study. Diaphragmatic activity was continuously measured by transcutaneous electromyography (dEMG) starting 30-min before (baseline) until 1-hour after caffeine administration. Diaphragmatic inspiratory activity per breath, expressed as the relative amplitude change of dEMG (logEMGAR), area under the curve (AUC), respiratory rate (RR), as well as tidal volume (V_t) measured by respiratory inductive

plethysmography, were calculated at 4 fixed time points after caffeine administration (5,15,30 and 60-min) using the average of all breaths in a 30-sec recording and compared to baseline.

Results 30 preterm infants (mean GA 29.1 ± 1.3 wk; birth weight 1237 ± 370 g) were included. 5-min after caffeine administration, diaphragmatic activity significantly increased (median, IQR) compared to baseline; logEMGAR (0.13, 0.09–0.17), corresponding with an amplitude increase of 35% (22–49%). AUC (19%, 11–34%) and V_t (30%, 7–48) also increased significantly. Caffeine did not impact RR. The increased activity was observed at all subsequent time points.

Conclusions This is the first study showing that caffeine treatment, besides stimulating respiratory drive, results in a rapid (within 5-min) and sustained increase in diaphragmatic contractility in preterm infants.

Late Breaking

O-219 DEVELOPING AND EVALUATING AN ON LINE PARENT INFORMATION AND SUPPORT APPLICATION TO FACILITATE HOME-BASED CARE BY PARENTS OF LONG-TERM CONDITIONS: A FEASIBILITY RCT

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Abstract O-219 Figure 1