

## AB023. Early postnatal hypotension (EPH) in ELBW neonates: complications and effects of antenatal factors

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**Background:** The incidence of early postnatal hypotension (EPH) in ELBW infants is 20–45%. EPH is associated with significant mortality and morbidities in this population. Associated with EPH, about 25% of hypotensive ELBW infants are refractory to volume expansion and inotropes (VI) and require hydrocortisone (HC) for resolution of hypotension. ELBW with refractory hypotension (RH) are clinically indistinguishable from those who respond to VI during early course of the morbidity. To compare hypotensive ELBW infants with normotensive controls (C). To compare ELBW infants suffering from RH with those who suffer from non-RH (NRH) in order to identify neonates susceptible to RH early in course.

**Methods:** Retrospective case control.

**Results:** Normotensive controls (C=124) *vs.* hypotensive groups: (I) NRH (n=74) *vs.* C: BW, GA and receipt of ANS did not differ. In the multivariate analysis, the occurrence of gestation associated diabetes mellitus (GDM) and risks for PDA, IVH, SIP, VM and oxygen dependence at 36 postmenstrual week of life (BPD) were higher in VI. (II) RH (n=69) *vs.* C: HC recipients had lower BW, GA and receipt of ANS. After controlling for these variables, the risks

for IVH, BPD, air leaks and PDA were higher in the HC group. The occurrences of SIP, NEC, VM and GDM did not differ. Hypotensive infants: RH *vs.* NRH groups: infants in RH group had lower BW (675±121 g) and gestational age (GA, 25.1±1.3 weeks) and higher mean airway pressure and oxygen requirements, all independent of antenatal steroid (ANS) exposure. The receipt of ANS (P=0.01) and occurrences of GDM (P=0.01) were lower in RH group. ANS (OR, 0.5, 95% CI: 0.2–0.9, P=0.01) and GDM (OR, 0.3, 95% CI: 0.09–0.9, P=0.04) reduced the risk for RH, as did maternal hypertension after controlling for BW (OR, 0.2, 95% CI: 0.07–0.9, P=0.02). RH group had higher risk for IVH (OR, 2.1, 95% CI: 1.02–4.2 P=0.04) which declined in the multivariate analysis. A trend towards lower risk of ventriculomegaly (VM) was noted in RH group (OR, 0.3, 95% CI: 0.1–1.1), which became significant after controlling for BW (OR, 0.2 95% CI: 0.07–0.9, P=0.04).

**Conclusions:** Hypotensive ELBW overall are susceptible to PDA, IVH and BPD. ELBW infants who are ≤25 weeks of GA and unexposed to ANS and GDM are more likely to suffer from RH and may benefit from an initial therapy with, or earlier institution of hydrocortisone. NRH treated with inotropes is associated with increased risks for SIP and VM in ELBW infants whereas, those treated with hydrocortisone for RH do not exhibit such risks. GDM decreases the occurrence of RH in ELBW infants. Effect of maternal hypertension in decreasing the occurrence of RH is birth weight dependent. This, as well as the trend towards a higher risk for VM with VI therapy needs validation in future well powered studies.

**Keywords:** Hypotension; ELBW; inotropes; hydrocortisone

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