EFFECT OF POSTNATAL COMPLICATIONS ON DEVELOPMENT AFTER MODERATE PRETERM BIRTH

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Background: Moderate preterms (32-35⁺⁶ weeks gestation) are at risk for developmental delay compared to fullterms. It is unknown if postnatal complications are associated with developmental delay for this group.

Objective: To determine the effect of postnatal complications after moderate preterm birth on development for moderate preterms at age 4.

Design and methods: In a community-based stratified cohort, parents of 902 moderate preterms born in 2002/2003 completed the Ages and Stage Questionnaire (ASQ) when the child was 43-49 months old. An "ASQ total score" > 2SD below the reference value for fullterms was considered to indicate developmental delay. Postnatal risk factors including Apgar-score, transport after birth, tertiary NICU admission, documented asphyxia, mechanical ventilation, CPAP, inotropics, hypoglycemia (< 1.7 mmol/ltr), proven or suspected sepsis, apneas, caffeine, hyperbilirubinemia (>255mmol/ltr), and gestational age at discharge were obtained retrospectively from medical records. We performed Chi-square analyses and constructed a multivariate logistic model starting with all postnatal factors with univariate association with developmental delay at $P < 0.20$, adjusting for maternal education and SGA.

Results: Hypoglycemia (Odds ratio (OR) 2.5, Confidence Interval (CI); 1.2-5.0), documented asphyxia (OR 3.2, CI; 1.0-9.9) and tertiary NICU admission (OR 1.9 CI; 1.1-3.5) were positively associated with developmental delay. Gestational age at discharge had a borderline positive association with developmental delay ($P < 0.20$). All other postnatal risk factors were not associated with developmental delay ($P > 0.2$). In the multivariate model hypoglycemia remained associated with developmental delay (OR 2.6, CI; 1.3-5.3).

Conclusions: Hypoglycemia increases the odds for developmental delay after moderate preterm birth.