Hypoglycemia in neonates without risk factors

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Introduction: Hypoglycemia is the most frequent treatable metabolic disease in neonatal period associated with adverse neurological outcome and brain injury if treatment was not provided. AAP and PES recommended screening for hypoglycemia only in newborns with risk factors but many others neonates may present episodes of asymptomatic hypoglycemia without any known risk factor. AAP 2011 guidelines and AAP and PES 2017 guidelines define hypoglycemia as follows:

- AAP guideline: numerical glycemia < 40 mg/dl (first 4h)
- PES guideline: glycemia < 50 mg/dl (first 48hr)

Risk factors of hypoglycemia: prematurity, large for gestational age, small for gestational age, infant of diabetic mother

Objectives: To assess the incidence of hypoglycemia in healthy full term neonates without any risk factors in our medical center and to correlate it with mother’s BMI, the initiating time of feeding and the difference between breast feeding and formula. To prove the benefit of universal neonatal screening of hypoglycemia in saving many full term newborns without any risk factors.

Materials and Methods: A hospital based, prospective longitudinal study involving 282 healthy full term asymptomatic neonates. Blood glucose level was measured at 60 and 90 minutes of life using reagent strips and Glucometer independent of feeding time.

Results:

- AAP BG < 40 mg/dl
- PES BG < 50 mg/dl

Birth weight was statistically non significant because we have chosen babies without risk factors.

Algorithm:

- Delayed initiation of feeding, gestational age below 38 weeks and bottle fed infants were significantly associated with hypoglycemia. It is preferable to do a universal glycemic screening for all newborns to prevent transient neonatal hypoglycemia, which could have some deleterious consequences on the central nervous system and to start breastfeeding within 1 hour after delivery as soon as possible.

Conclusion: Delayed initiation of feeding, gestational age below 38 weeks and bottle fed infants were significantly associated with hypoglycemia. It is preferable to do a universal glycemic screening for all newborns to prevent transient neonatal hypoglycemia, which could have some deleterious consequences on the central nervous system and to start breastfeeding within 1 hour after delivery as soon as possible.