The Postnatal Glucose Concentration Nadir Is Not Abnormal and Does Not Need to Be Treated

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Dear Editor,

In their just published article in *Neonatology* [1], the authors conclude their abstract with the following sentence: "In order to potentially prevent low glucose concentrations at the time of the nadir, exogenous glucose should be provided to all newborns as soon as possible after birth." We should like to point out that this statement is factually incorrect, misleading, and potentially harmful. If "all" newborns were to receive exogenous glucose, this would apply to the vast majority of term and even many late preterm infants who appropriately do not receive exogenous glucose and normally suckle ad lib. Normal physiological processes, common throughout the animal kingdom, particularly in mammals, respond to the normal fall in glucose concentrations that starts almost immediately after birth. These processes produce a robust increase in glycogen breakdown, followed by gluconeogenesis, release of endogenous glucose from the liver, and breakdown of fat to provide alternative fuels to glucose. Providing exogenous glucose very likely would interfere with this normal response to the normal

postnatal decline in glucose concentrations.

Furthermore, if the infant were to be dependent on exogenous glucose, early enteral feeding, even in term infants, let alone extremely preterm infants, would hardly provide sufficient exogenous glucose for vital metabolic functions. Assuming the authors might have been thinking about glucose supplied from hydrolysis of lactose in milk, there just is not enough breast milk in the first hours after birth when the glucose concentration nadir occurs to support essential glucose metabolism. This is the reason glucose production by the newborn's liver and endogenous provision of alternative fuels are essential. Had the authors confined their statement to extremely low gestational age newborns or very preterm infants, their statement would be widely accepted, as the glucose stores and glucogenic capacity are too low in such infants to provide adequate glucose supply to vital organs.

We are very concerned that the authors' statement about *all* newborn infants might be erroneously interpreted by some

to imply that IV dextrose infusion or formula milk are required even for normal term and late preterm infants. This might lead to inappropriately excessive IV glucose infusion, even if indicated, and also contribute to reduced breastfeeding, losing its known advantages. It might postpone or even inhibit normal hepatic glucose production. It also might fuel the flames of personal injury attorneys, who already are keyed into looking for practices that might lead to hypoglycemia and adverse outcomes.

We believe, therefore, that a retraction and correction of the author's concluding abstract statement is necessary. We look forward to their response as well as that of the journal that allowed this incorrect statement to appear in print.

References

- 1 Kaiser JR, Bai S, Rozance PJ: Newborn plasma glucose concentration nadirs by gestational-age group. *Neonatology* 2018;113:353–359.