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Serum cardiac troponin T in asphyxiated term neonates delivered at two teaching hospitals in lagos, Nigeria.

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Abstract

BACKGROUND: Asphyxia is a leading cause of perinatal morbidity and mortality in the developing countries. All organs including the myocardium are vulnerable to ischemic injury in asphyxia. The aim of the current study was to assess myocardial injury in asphyxiated full-term neonates using their serum cardiac troponin T levels.

METHODS: In all, 30 term asphyxiated neonates and 30 gestational age-, birth weight-, and sex-matched controls were studied. Asphyxia was defined by double criteria of low umbilical arterial blood pH <7.20 and low five-minutes Apgar score ≤6, while the controls were term nonasphyxiated neonates with umbilical arterial blood pH ≥7.20 and five minutes Apgar score >6. The umbilical arterial pH was done soon after delivery, while the serum cardiac troponin T was done within the first 4 to 24 hours of life.

RESULTS: Participants and controls were similar in terms of mean gestational age, mode of delivery, gender, and birth weight (P = 1.0, .07, 1.0, and 1.0, respectively). Two thirds of the asphyxiated babies had elevated serum cardiac troponin T in the high risk range (> 0.1 ng/mL). On the contrary, none of the controls had serum cardiac troponin T in that range. Serum cardiac troponin T showed negative correlation with pH (r = -.75), five-minute Apgar score (r = -.74), and one-minute Apgar score (r = -0.70).

CONCLUSION: The study identified perinatal asphyxia as a high-risk factor for elevated serum cardiac troponin T and hence for myocardial cellular injury.

KEYWORDS: asphyxia; myocardial injury; neonates; troponin T

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