

Perfusion Index Assessment in Newborns with Tachypnea

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Background and Aim

Tachypnea of newborn is a frequent respiratory problem which may be due to several causes. Perfusion index (PI) is a way of monitoring of peripheral perfusion noninvasively. The aim of this study was to compare PI of newborns with and without tachypnea within the 1st hour of life.

Methods

Neonates born at gestational age >36 weeks with C/S were monitored with Masimo Set Radical 7 pulse-oximeter postductally. PI and oxygen saturation (SaO₂) values, respiratory rates (RR), temperature and heart rate were manually recorded every ten seconds during first 3 minutes after the newborn was taken to the transition area (baseline) and at the 60 minutes of life.

Results

Study included 30 tachypneic neonates 7 of which were admitted for transient tachypnea of newborn (TTNB) and 24 neonates with normal respiratory rates (controls). Birth weight of 30 tachypneic newborns were higher than controls $p < 0.01$ whereas GA were similar. None of the neonates had risk for sepsis and all had capillary refill time < 3 sec. PI values were similar between groups both at baseline and at 1 hour (median and range; controls: 1.52(0.68–3.05), tachypnea: 1.38 (0.68–3.07), TTNB: 1.2 (1.02–1.60) at baseline and controls: 1.23 (0.66–2.84), tachypnea: 1.42 (0.65–3.40), TTNB: 1.22 (1.03–2.08) at 1 hour. Only RR values were significantly different between groups.

Conclusion

Low PI may be associated with various pathological conditions. The results of this study suggests that if the newborn has only transient tachypnea the PI remains normal which might be helpful for the clinician to decide about management.