

Perfusion index assessment during transition period of newborns: an observational study.

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BACKGROUND: Perfusion index (PI) is becoming a part of clinical practice in neonatology to monitor peripheral perfusion noninvasively. Hemodynamic and respiratory changes occur in newborns during the transition period after birth in which peripheral perfusion may be affected. Tachypnea is a frequent symptom during this period. While some tachypneic newborns get well in less than 6 h and diagnosed as "delayed transition", others get admitted to intensive care unit which transient tachypnea of newborn (TTN) being the most common diagnosis among them. We aimed to compare PI of neonates with TTN and delayed transition with controls, and assess its value on discrimination of delayed transition and TTN.

METHODS: Neonates with gestational age between 37 and 40 weeks who were born with elective caesarian section were included. Eligible neonates were monitored with Masimo Set Radical7 pulse-oximeter (Masimo Corp., Irvine, CA, USA). Postductal PI, oxygen saturation and heart rate were manually recorded every 10 s for 3 min for two defined time periods as 10(th) minute and 1(st) hour. Axillary temperature were also recorded. Newborn infants were grouped as control, delayed transition, and TTN.

RESULTS: Forty-nine tachypneic (TTN; 21, delayed transition; 28) and 30 healthy neonates completed the study. PI values were similar between three groups at both periods. There were no correlation between PI and respiratory rate, heart rate, and temperature.

CONCLUSION: PI assessment in maternity unit does not discriminate TTN from delayed transitional period in newborns which may indicate that peripheral perfusion is not severely affected in either condition.