

Early Postnatal Changes in the Perfusion Index in Term Newborns with Subclinical Chorioamnionitis.

De Felice C., Del Vecchio A., Criscuolo M., Lozupone A., Parrini S., Latini G. *Arch Dis Child Fetal Neonatal Ed.* 2005 Sep;90(5):F411-4.

Background

Chorioamnionitis (HCA) in term newborns is often subclinical and associated with neonatal morbidity and mortality. *Objective:* To assess the value of the pulse oximetry perfusion index (PI) in the early prediction of subclinical HCA in term newborns.

Methods

PI cut-off values were first identified in 51 term newborns with HCA and 115 matched controls, retrospectively categorised on the basis of placental histology (study phase 1). The PI thresholds obtained were subsequently tested on an unselected case series of 329 prospectively recruited, term newborns (study phase 2). PI was evaluated during the first five minutes after delivery. Initial illness severity and short term clinical outcomes were determined.

Results

In study phase 1, newborns with HCA had lower PI one and five minutes ($p < 0.0001$) after delivery, lower one minute Apgar score ($p = 0.017$), lower cord blood base excess ($p = 0.0001$), together with higher rates of admission to neonatal intensive care unit ($p = 0.0001$) and endotracheal intubation ($p = 0.017$), and higher SNAP-PE ($p < 0.0001$) and NTISS ($p < 0.0001$) scores than those without HCA. In the prospective validation phase of the study, the PI cut-off values generated (one minute ≤ 1.74 , five minutes ≤ 2.18) showed 100% sensitivity, 99.4% specificity, 93.7% positive predictive value, and 100% negative predictive value in identifying subclinical HCA. Early identification of HCA was associated with a decreased rate of admission to intensive care ($p = 0.012$), as well as lower initial illness severity ($p < 0.0001$) and therapeutic intensity ($p = 0.0006$) than the newborns with HCA in phase 1.

Conclusion

These findings suggest that early PI monitoring is helpful in identifying HCA in term newborns.