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Prediction of perintal asphyxia with nucleated red blood cells in cord blood of newborns

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Objective of this obstruction Study was to evaluate nonnallevel of nucleated red blood cells (NRBC) per 100 White blood cells in cord blood of tenn, non-asphyxiated newborns and, to determine its variation with perinatal asphyxia and other Intrapartum parameters, and to detuning the difference between NRBC in arterial and venous cord blood. One hundred and sixty five mothers and their newborns selected according to inclusion criteria. I m1 of arterial cord blood was taken into heparinised syringe at the time of delivery, for immediate analysis of arterial blood gas. Additional samples of 2 mL of blood were collected from the umbilical artery and vein. Thin blood smears were made and studied under 40 X magnification. The number of nucleated red blood cells per 100 white blood cells (WBC) was counted in both samples. Intrapartum parameters such as CTG changes, meconlum staining of Liquor, Apgar score at birth, were also recorded. Newborns were observed till they are discharged from the hospital. Mean NRBC per 100 WBC in cord arterial and venous blood of term, non-asphyxiated newborns was 4.78(SD+/- 1.84) and 4.34 (SD+/- 1.71) respectively, (p0.05). Mean NRBC per 100 WBC in term asphyxiated newborns was 80.9(SD+/- 5.76) in arterial bloodand 80.29 (SD+/- 9.14) in venous blood, (p0.05). There was a statistically significant difference between the NRBC counts of asphyxiated and non-asphyxiated newborns, (pO.OOl) in arterial blood and venous blood. No statistically significant difference was observed in the NRBC per 100 WBC with the duration of labour or mode of delivery. The NRBC counts in asphyxiated newborns are significantly higher than that of the non-asphyxiated newborns. As the NRBC counts are similar in arterial and venous blood, and as collecting umbilical cord venous blood is relatively easy, we can continue with NRBC counting in venous blood alone. The NRBC counts did not change with other factors such as duration of labour or mode of delivery. Therefore the variation of NRBC was solely due to the hypoxic state