

Study of Intraventricular Hemorrhage in VLBW Neonates Admitted in Al-Zahra Hospital, Tabriz, Iran

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ABSTRACT

INTRODUCTION AND AIM: Intra-ventricular hemorrhage (IVH) is an important predictor of adverse neurodevelopmental outcome. IVH risk factor identification may conduct improvement of quality of care in Neonatal Intensive Care Units. The aim of the current study was to determine possible risk factors associated with IVH in VLBW neonates admitted in our hospital.

PATIENTS AND METHODS: All neonates with birth weight below 1500 gr admitted to NICU. Cranial ultrasonography was done for premature neonates weighed <1000 g in 3 to 5 days and in 1 month again. In premature infants weighed >1000 g, sonography was done in 7 days and 30 days of life respectively. If there is any conditions such as apnea, seizure, significant decrease in level of hemoglobin, increased head circumference, increased oxygen consumption, and other significant changes another sonography was done again. Exclusion criteria were cerebral malformations, metabolic disturbances, chromosomal anomalies, central nervous system infection, and genetic syndromes. Data was analyzed by SPSS ver 16.0 (SPSS Inc, Chicago, IL, USA)

RESULTS: In this study 64 cases with IVH and 110 without IVH were included. Mean of gestational age was 28.78 ± 2.08 . From neonates, 54.6% were boys and 45.4% were girls. Vaginal delivery and cesarean section was done in 56 (32.2%) and 118 (67.8%) cases respectively. Mean \pm SD of pH in cases with IVH and without IVH was 7.19 ± 0.22 and 7.30 ± 0.12 respectively ($p=0.001$). Mean \pm SD of pco₂ in cases with IVH and without IVH was 65.15 ± 29.89 and 49.88 ± 40.89 respectively ($p=0.001$). Mean of 5th min APGAR score in patients required CPR was 7.36 ± 1.57

and in patients without CPR was 8.68 ± 1.25 ($P=0.001$).

From cases with IVH, hydrocephaly was detected in 20 cases. From cases without IVH, hydrocephaly was detected in 6 cases. Result of chi-square showed significant correlation between IVH and prematurity ($\chi^2=21.94$, $df=1$, $P<0.001$). From cases with IVH, 18 cases (28.1%) expired. From cases without IVH, 11 cases (10%) expired ($\chi^2=9.398$, $df=1$, $P=0.002$). Results of chi-square test showed that there were a correlation between IVH and PDA, pressure support, surfactant therapy,

inotrop drug administration, vaginal delivery, neonatal resuscitation, and antenatal corticosteroid therapy ($p<0.05$). Hyaline membrane disease, history of preclampsia in mother was significantly higher in cases without IVH (Chi-square, $p<0.05$).

CONCLUSION: PDA, pressure support, surfactant therapy, inotrop drug administration, vaginal delivery, neonatal resuscitation, and antenatal corticosteroid therapy were significantly higher in cases with IVH. Hyaline membrane disease and preeclampsia in mother was significantly higher in cases without IVH.

KEYWORDS: Intraventricular hemorrhage, APGAR, low birth weight, hyaline membrane disease, corticosteroid, surfactant, inotrop, pre-eclampsia

Date Accepted for Publication: 24 January, 2012

NigerJMed 2012: 92-97

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