The Hemodynamic of Bichorionic Biamniotic Twins in Early Neonatal Period

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**Background.** The multiple pregnancies are associated with placental dysfunction and pathology of early neonatal period. The objectives of study was to investigate central and cerebral hemodynamic in early neonatal period in bichorionic biamniotic twins. **Matherial.** Prospective case-control investigation of central and cerebral hemodynamic was performed in 62 twins (37 without intrauterine growth retardation (IGR) and 25 with IGR), and 48 singletons (25 without IGR and 23 with IGR). The routine sings of hemodynamic were investigated (Philips HD7 XE unit, the Netherlands). For comparison of multiple groups, Kruskal-Wallis ANOVA on program STATISTICA 7. **Results.** The pregnancy course in women with twins and singletons was not difference except increase rate of in vitro fertilization (p=0.0006), and cesarean section (p=0.001) multiple pregnancy. The third twins ware “near term infants”. There were significant difference in decreasing of Vmin (11 cm/s) at third day of life in twins with IGR comparing singletons and twins without IGR in medium cerebral artery. At this time registration of decreasing cardiac output (60±2.7%) was present with correlation on Vmin (r=0.68, p<0.05). The twins and singletons had no difference in central hemodynamic regimen: 53.2% twins and 56.2% normokinetic, p=0.7547; 35.4% twins and 41.6% singletons hyperkinetic, p=0.5208; and 11.4% and 2.2% hypokinetic respectively, p=0.0706. There was correlation between resistance index in anterior cerebral artery and ductus arteriosus diameter (r=0.5, p<0.05); systolic index and ductus arteriosus diameter (r=-0.45, p<0.05), and ductus arteriosus functional period in days (r=-0.48, p<0.05). **Conclusions.** We speculate about risk of brain ischemia in bichorionic biamniotic twins with IGR on third day of life due to decrease of cardiac output (hypokinetic hemodynamic regimen) on decrease catecholamine labor stress in “near term” infants with premature brain autoregulation. The regimen of central hemodynamic depends on the diameter and its functional period.