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Ventricular reservoir in neonatal hydrocephalus – Single center study

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Introduction: Neonatal hydrocephalus can be initially treated by ventricular reservoir, ventriculosugaleal shunt or external ventricular drain. In this study, authors present their experience with the use of neonatal ventricular reservoir.

Methods: Our study includes 40 consecutive patients with hydrocephalus treated at our center in the years 2005-2012. All patients were treated by ventricular reservoir in neonatal period (corrected age at the surgery 28th WG – 1 month, mean corrected age at implantation 37th WG). Achieved gestation week ranged between 25th – 40th GW (mean 30,98 GW). Main etiology of hydrocephalus was posthemorrhagic (n=33), then congenital (n=5) and other (n=2).

Results: Overall complication rate was 7.5%, whereof infection rate was 5%. Shunt conversion was needed in 28 patients (70%), ETV was performed in 4 patients (10%). No permanent treatment of hydrocephalus was needed in 8 patients (20%). Achieved gestation week and age at the surgery did not influence significantly the need for permanent treatment of hydrocephalus ($p=0,812$ and $p=0,360$ for GW and age at surgery respectively), or the complication rate ($p=0,624$ and $0,060$ for GW and age at the surgery respectively). However, the best results were observed in the group of patient born between 32nd – 36th WG (complication rate 0%, need for permanent treatment in 67%).

Conclusion: Due to low complication rate and good clinical outcome we consider ventricular reservoir as optimal choice in treatment of neonatal hydrocephalus, specially in cases when shunt insertion or ETV procedure is not possible or desirable.