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Brain tumors in children 0-3 years old

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Introduction: Although in the last 20 years survival in older children with brain tumors has increased, in small children the survival still remains poor. This is due to some factors specific to small age. The oncologic treatment is limited, radiotherapy being prohibited before the age of 3-4 years old. In these conditions the best treatment option is gross total removal of the tumor but this is often hard to accomplish.

Method: We retrospectively analyzed 85 cases of children 0-3 years old admitted in our clinic from June 2003 – May 2013. Following factors were analyzed: age, sex, duration of symptoms, clinical features on admission, tumor location, surgical removal, complications, histology and survival.

Results: From the 85 children included in the study (35 girls, 50 boys) with the median age 2,03 years old, 71 underwent surgical removal of the tumor. The other 14 were cases of brainstem tumors, thalamic tumors or children with bad neurologic condition on admission in the hospital (deep coma, resuscitated after cardio-respiratory arrest, etc). From the 71 cases operated, total removal was accomplished in 52,11% of cases, subtotal removal in 45,07% and partial removal in 2,81%.Most frequent hystopathological results were: pilocytic astrocytoma (23,94%), medulloblastoma (19,71%), ependymoma (16,9%), PNET (9,85%), choroid plexus carcinoma/atypical papilloma (9,85%). 30 days postoperative mortality was 7,04%.

Conclusions: Most aggressive tumors, usually supratentorial, were encountered in small children. Once the children grow histology and localization of tumors change - majority of tumors are infratentorial and the percent of benign tumors rises. Analyzing a big number of cases of tumors in small children we can identify factors who can lead to better survival of this category of patients.