

Medulloblastoma: Distinctive Histo-Molecular Correlation with Clinical Profile, Radiologic Characteristics and Surgical Outcome

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Introduction

Medulloblastoma[MB] is a heterogenous tumor and the prognosis is influenced by various clinical,

histological and molecular factors. The aim of the study is to determine the clinical profile and radiologic characteristics

among the histo-molecular subgroups,the predictors of surgical outcome and the pattern of relapse in pediatric and adult MB.

Methods

An analysis of 118 patients of MB who underwent surgical treatment at National Institute of Mental Health and

Neurosciences [NIMHANS],India over seven-year period is presented.The clinical profile, radiologic

characteristics, surgical nuances and survival patterns are discussed.

Results

The mean age of the cohort was 12 years.The primary manifestation was raised ICP headache in 53 patients[44.9%] which was the predominant symptom in LCA and WNT subgroups.The median

pre-operative KPS was 60.Post-operative cerebellar mutism was

noted in 13 patients [11%],unilateral abducent nerve palsy in 12 patients

[10.2%],unilateral oculomotor nerve palsy in 10 [8.5%] patients,meningitis

in 7 [5.9%] patients,seizures in 6 [5.1%] patients and operative site CSF leak

in 4 patients[3.4%].Vermian and hemispheric location of

tumor was most commonly observed in Non WNT/Non SHH [91.7%] and SHH [42.9%] subgroups respectively.92patients

[78%] underwent pre-operative ventriculo-peritoneal shunts[VPS] for obstructive hydrocephalus and 14 patients[11.8%]

underwent VPS in the post-operative period. The median OS for the whole group was 82.1 months and

Conclusions

Pediatric MB comprised 82.2% of whole cohort and they had poor survival when compared to adults.Age, hemispheric location of tumor,extent of resection and adjuvant treatment status were the important clinical prognostic factors for survival.Surgery for MB is formidable and VPS can be considered in persistant symptomatic and progressive hydrocephalus.Our study on pediatric and adult MB validates the prognostic significance of various clinical,radiologic and histo-molecular parameters of MB.

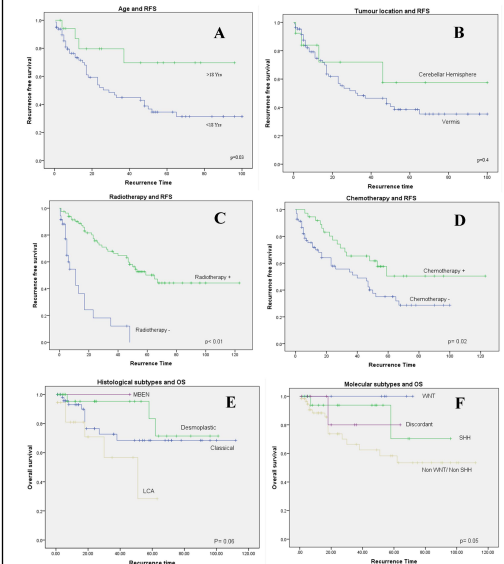
Learning Objectives

1. Histo-molecular correlation of medulloblastoma with surgical outcome.
2. Prognostic factors in pediatric and adult medulloblastoma.
3. Clinical profile variations in pediatric and adult cohorts.

References

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Figure file



Legend to figure

Figure 1:

- A- KM plot showing the correlation between age and RFS
- B- KM plot showing the correlation between tumor location and RFS
- C- KM plot showing the correlation between radiotherapy and RFS
- D- KM plot showing the correlation between chemotherapy and RFS
- E- KM plot showing the correlation between histological subtypes and OS
- F- KM plot showing the correlation between molecular subgroups and OS