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Safety of craniotomy for brain tumor resection in octogenarians and older patients – a matched – cohort analysis

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Abstract

Introduction: The incidence of brain tumors has increased in elderly population overtime. Their eligibility to a major surgery remains a questionable subject. This study evaluated prognostic factors and 30-days morbidity and mortality in octogenarian population who underwent craniotomy for resection of brain tumor.

Materials and methods: A total of 154 patients were divided into two different groups: patients above 80 years old and patients below 65 years old. In both groups, patients were stratified based on diagnosis with benign tumors [meningioma] and malignant tumors [high-grade gliomas and metastases]. Multivariable logistic regression model with backward elimination method was utilized to identify the independent risk factors for 30-days readmission and post-operative complications.

Results: The analysis revealed no significant difference in 30-day readmission ($p = 0.7329$), 30-day mortality (0.6854) or in post-operative complication ($p = 0.3291$) between age ≥ 80 and age ≤ 65 groups. A longer length of stay (LOS) was observed in the older patients ($p = 0.0479$). There was a significant difference in the pre-post KPS between the two groups ($p < 0.0001$). ASA ($p = 0.0315$) and KPS ($p = 0.071$) were found as important prognostic factors associated with post-operative mortality in both groups.

Conclusion: Octogenarians can withstand craniotomy without any significant increase in 30-day readmission, 30-day mortality and post-operative complications as compared to patients younger than age 65. The ASA score (>3) and/or KPS (<70) were the most important prognostic factors for 30-days readmission and mortality.

Keywords: Octogenarian population; brain tumors; craniotomy; elderly; geriatric oncology.

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