

Correlation between hypoxia Inducible factor-1 alpha (HIF 1 Alpha) expression with hystopathological level on intracranial meningiomas patients at RSUP Haji Adam Malik Hospital Medan

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Abstract : Background : Meningiomas account for \pm 30% of all primary brain and central nervous system tumors and are associated with extremely variable clinical outcomes. Hypoxia plays an important role in the development, angiogenesis and growth of malignant brain tumors. Overexpression of HIF-1 has been demonstrated in many common human cancers and correlated with tumor grading and progression, including renal, colon, and brain tumors. The purpose of this study is to determine the relation between HIF-1 α expression of intracranial meningioma with WHO criteria histopathologically in patients with intracranial men.

Method : This study was a cross sectional analytic study of 32 parts of paraffin block meningioma After staining, then HIF-1 α expression were calculated with light microscope. The results were expressed as the percentage of cells with strong positive staining as follows: \leq 10 % positive cells- negative (-), between 11 and 50 % (+), and \geq 51 % positive cells (++)

Result : Based on the results of HIF-1 α Expression examined on 32 intracranial meningioma slides, results found were: in grade I Meningioma there were 13 slides (30,59%) included in Expression 0 and 14 slides group (43.75% in Expression 1+ group, Meningioma grade II obtained 3 slides (9.37%) included in the expression of group 1+, and 1 slides (3.12%) belonging to group Expression 2+, While Meningioma Grade III was found in 1 slide (3.12%) included in the group of Expression 2+.

Conclusion : The expression of HIF-1 α in intracranial meningiomas was associated with incidence of recurrency and changes to high grade meningioma (grade 2 and grade 3). This indicates that there is a significant relation between HIF-1 α expression and the degree of meningioma based on WHO classification hystopathologically, correlation value $p = 0.044$ ($p < 0.05$).

Keyword : Meningioma, hypoxia Inducible factor-1 alpha, hystopathological level.

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