Hubungan Nilai Apparent Diffusion Coefficient Dengan Derajat Edema Peritumoral Glioblastoma Pada Pemeriksaan Magnetic Resonance Imaging Kepala Serta Faktor-Faktor Yang Memengaruhinya Di RSUPN Dr. Cipto Mangunkusumo = Relationship Between Apparent Diffusion Coefficient and Degree of Peritumoral Edema in Glioblastoma on Head Magnetic Resonance Imaging Examination and Its Influencing Factors at RSUPN Dr. Cipto Mangunkusumo

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Abstrak

Latar Belakang: Edema peritumoral kerap dihubungkan dengan gejala neurologis dan progresivitas pada glioblasoma. Peran nilai Apparent Diffusion Coefficient (ADC) pada Magnetic Resonance Imaging (MRI), faktor demografi dan gejala klinis dalam memrediksi derajat edema peritumoral masih belum banyak diketahui, sehingga perlu telaah lebih lanjut.
Tujuan: Menilai hubungan nilai ADC intratumoral, faktor demografi dan gejala klinis dengan derajat edema peritumoral.
Metode: Studi crossectional dengan data sekunder di RSUPN Dr. Cipto Mangunkusumo pada tahun 2014-2022. Seluruh sampel memiliki hasil MRI dengan sekuens DWI-ADC. Setiap variabel bebas dan tergantung dianalisis secara bivariat menggunakan uji Chi-square; untuk variabel bebas dengan nilai p<0,25 dilakukan analisis multivariat. Derajat edema peritumoral pada MRI dibagi menjadi mayor (>1cm) dan minor (<1cm).
Hasil: 78 pasien dianalisis; didapatkan hubungan yang bermakna antara nilai ADC intratumoral dengan derajat edema peritumoral pada nilai cut off 0,75 x 10-3 mm2/s (p <0,001). Tidak terdapat hubungan antara usia 60 tahun, jenis kelamin, sakit kepala, penurunan kesadaran dan papil edema dengan derajat edema peritumoral, sedangkan usia >60 tahun mutlak mengalami edema mayor.
Kesimpulan: Pasien dengan nilai ADC 0,75 x 10-3 mm2/s memiliki kemungkinan mengalami edema peritumoral mayor lebih besar.
.....Background: Peritumoral edema is often associated to neurological symptoms and progression in glioblastoma. The role of the Apparent Diffusion Coefficient (ADC) in Magnetic Resonance Imaging (MRI), demographic and clinical symptoms in predicting the degree of peritumoral edema not much known, so further studies are needed.
Objective: To assess the relationship between intratumoral ADC value, demographic and clinical symptoms with the degree of peritumoral edema.
Methods: Cross-sectional study with secondary data at RSUPN Dr. Cipto Mangunkusumo in 2014-2022. All samples had MRI with DWI-ADC sequence. Each independent and dependent variable was analyzed bivariately using the Chi-square test; independent variables with p <0.05, multivariate analysis was performed. Peritumoral edema on MRI are divided into major (>1cm) and minor (<1cm).
Results: 78 patients were analyzed; a significant relationship was found between intratumoral ADC value and degree of peritumoral edema at cut-off value of 0.75 x 10-3 mm2/s (p <0.001). There is no relationship between age 60, gender, headache, loss of consciousness and papilledema with the degree of peritumoral edema, whereas age >60 years has absolute major edema.

Conclusion: Patients with ADC values 0.75 x 10-3 mm2/s have a greater likelihood of developing major edema.