

## PARAMETER KUANTITATIF EEG (QEEG) SEBAGAI PREDIKTOR LUARAN FUNGSIONAL JANGKA PANJANG PASIEN STROKE ISKEMIK

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**Latar belakang:** Prediksi akurat luaran fungsional pasien stroke iskemik berpotensi meningkatkan perawatan klinis dan manajemen rehabilitasi, namun belum terdapat kesepakatan skala terstandar penilaian luaran stroke. Kuantitatif EEG dipercaya dapat menilai prognosis dan memprediksi perbaikan stroke namun hasil yang didapatkan masih kontroversi.

**Tujuan penelitian:** Menghitung risiko relatif parameter kuantitatif EEG (qEEG) terhadap luaran fungsional 90 hari pasca stroke iskemik.

**Metode penelitian:** Penelitian menggunakan penelitian analitik observasional dengan pendekatan *cohort* prospektif melalui uji *chi square* selama 90 hari dengan membandingkan luaran fungsional bulan ke-3, yang dinilai dengan Barthel indeks, terhadap parameter *asymmetry* kuantitatif EEG pasien stroke iskemik. Subjek penelitian diambil dari pasien yang dirawat di RSUP Dr. Sardjito, RSPAU dr. Hardjolukito, dan RS PKU Muhammadiyah Yogyakarta pada Desember 2018 – Juli 2019. Nilai *asymmetry* kuantitatif EEG ditentukan oleh penghitungan ROC dari *power absolute*.

**Hasil penelitian :** Terdapat total 51 subjek yang menyelesaikan penelitian *cohort* 90 hari dan didapatkan *cut-off* 0,429 ( $>0,429$  menunjukkan nilai *asymmetry* power delta). Subjek penelitian dengan nilai *asymmetry* delta berhubungan dengan perbaikan fungsional sebesar 7,2x lebih besar dibandingkan dengan subjek tanpa nilai *asymmetry* delta.

**Kesimpulan :** Parameter *asymmetry* delta kuantitatif EEG dapat menjadi prediktor perbaikan luaran fungsional pasien stroke iskemik jangka panjang.

Kata kunci : kuantitatif EEG, stroke iskemik, luaran fungsional, prognosis jangka panjang

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## QUANTITATIVE EEG (QEEG) PARAMETER AS A LONG TERM FUNCTIONAL OUTCOME PREDICTOR IN ISCHAEMIC STROKE PATIENT

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**Background:** Accurate predictions of functional outcomes in ischemic stroke patients have a potential to improve clinical care and rehabilitation management, but there is no agreement on standardized scale for evaluating stroke outcomes. Quantitative EEG is believed to be able to assess prognosis and predict stroke improvement but the results obtained are still controversial.

**Purpose:** To calculate the relative risk of quantitative EEG (qEEG) parameters to the functional outcome 90 days after ischemic stroke.

**Methods:** This study used an observational analytic study with a prospective cohort through the chi square test for 90 days by comparing the functional outcomes of 3<sup>rd</sup> month, assessed by Barthel index, against the quantitative EEG asymmetry parameters of ischemic stroke patients. The research subjects were taken from patients who were treated at RSUP Dr. Sardjito, RSPAU dr. S. Hardjolukito, and PKU Muhammadiyah Hospital Yogyakarta on December 2018 – July 2019. Asymmetry quantitative EEG value is determined by the ROC calculation of absolute power.

**Results :** There were a total of 51 subjects who completed 90-days cohort study and obtained a cut-off of 0,429 (>0,429 indicating the value of the asymmetry power delta). Research subjects with delta asymmetry values are associated with functional improvement of 7,2x greater than subjects without delta asymmetry values.

**Conclusion :** The quantitative delta asymmetry parameter EEG can be a predictor of long-term functional outcome improvement in ischemic stroke patients.

**Keyword :** quantitative EEG, ischemic stroke, functional outcome, long-term prognosis.

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