

## KOMPARASI CT SCAN KEPALA NON KONTRAS DENGAN EEG KUANTITATIF (qEEG) TERHADAP TINGKAT KEPARAHAN PASIEN STROKE ISKEMIK AKUT

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### INTISARI

**Latar belakang:** Prediksi luaran jangka panjang pasca stroke iskemik, melalui penilaian tingkat keparahan, dapat meningkatkan manajemen komprehensif. Salah satu metode penilaian, dengan CT scan kepala, belum tersedia merata di seluruh Indonesia. Kuantitatif EEG diyakini dapat menilai kelainan fungsional saraf dan tingkat keparahan dibidang lain namun penggunaan dibidang stroke masih minimal.

**Tujuan penelitian:** Melakukan studi komparasi untuk menilai korelasi parameter qEEG (DTABR) terhadap skor NIHSS dibandingkan dengan skor ASPECT CT Scan kepala non kontras pada pasien stroke iskemik akut.

**Metode penelitian:** Penelitian menggunakan rancangan analitik observasional dengan desain *crossed sectional* yang membandingkan nilai korelasi parameter qEEG (DTABR) dan skor ASPECT terhadap skor NIHSS pasien stroke iskemik akut. Data penelitian diambil berdasarkan data sekunder pasien di RSUP Dr. Sardjito, RS PKU Muhammadiyah Yogyakarta dan RSPAU dr. S. Hardjolukito yang dilakukan pemeriksaa CT scan kepala non kontras, EEG dan laboratorium pada fase akut perawatan.

**Hasil penelitian:** Terdapat 51 subyek penelitan dan didapatkan korelasi positif berkekuatan rendah antara parameter DTABR pada qEEG terhadap skor NIHSS ( $r=0,279$ ;  $p=0,047$ ) serta tidak didapatkan korelasi antara skor ASPECT terhadap skor NIHSS ( $r=-0,003$ ;  $p=0,982$ ). Hasil signifikan lain didapatkan pada korelasi power delta terhadap skor NIHSS dengan nilai korelasi positif lemah ( $r=0,376$ ;  $p=0,007$ ).

**Kesimpulan:** Parameter DTABR pada qEEG memiliki hubungan korelasi yang signifikan terhadap tingkat keparahan pasien stroke iskemik akut dibandingkan dengan skor ASPECT pada CT scan kepala non kontras.

Kata kunci: kuantitatif EEG, skor ASPECT, tingkat keparahan, stroke iskemik

## COMPARATION OF NON-CONTRAST HEAD CT SCAN WITH QUANTITATIVE EEG (qEEG) ON THE SEVERITY OF ACUTE ISCHEMIC STROKE PATIENTS

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### ABSTRACT

**Background:** Long-term outcome prediction after ischemic stroke, through severity assessment, can improve comprehensive management. One of the assessment methods, with head CT scan, is not yet available evenly throughout Indonesia. Quantitative EEG is believed to be able assess functional neuron abnormalities and severity in other fields but its use in stroke is still minimal.

**Purpose:** To conduct a comparative study to assess the correlation of qEEG parameters (DTABR) to the NIHSS score compared to the ASPECT score of non-contrast head CT Scan in acute ischemic stroke patients.

**Methods:** The study used an observational analytical design with a crossed sectional design that compared the correlation values of qEEG parameters (DTABR) and ASPECT scores to the NIHSS scores of acute ischemic stroke patients. The research data were taken based on secondary data from patients at Dr. Sardjito General Hospital, PKU Muhammadiyah Hospital Yogyakarta, and RSPAU dr. S Hardjolukito who underwent non-contrast head CT scan, EEG and laboratory examinations in the acute phase of care.

**Results:** There were 51 subjects and a low-strength positive correlation was found between the DTABR parameters on qEEG and the NIHSS score ( $r=0,279$ ;  $p=0,047$ ) and no correlation was found between the ASPECT score and the NIHSS score ( $r=-0,003$ ;  $p=0,982$ ). Other significant result were obtained in the correlation of power delta to NIHSS score with a low-strenght positive correlation value ( $r=0,376$ ;  $p=0,007$ )

**Conclusion:** DTABR parameters on qEEG have a significant correlation with the severity of acute ischemic stroke patients compared to ASPECT score on non-contrast head CT scans.

Keywords: quantitative EEG, ASPECT score, severity, ischemic stroke