Gambaran nilai Rerata P300 Auditorik pada anak normal di tiga sekolah dasar swasta Jakarta = Mean value profiles of auditory P300 in school-aged children of three private elementary schools in Jakarta

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Abstrak

Latar Belakang :
Event-related potensial (ERP), terutama P300, merupakan perubahan potensial otak yang menggambarkan proses pengolahan stimulus yang diterima. Pemeriksaan ERP merupakan salah satu tekhnik neurofisiologis yang non-invasive, tetapi objektif, yang sexing digunakan untuk mengevaluasi aktivitas kognitif seseorang, terutama yang berkaitan dengan atensi, persepsi memori, fungsi eksekutif, dan kontrol perilaku.

Metode :
Pemeriksaan ERP auditorik diskriminasi 2 nada dilakukan pada 81 anak asimptomatik yang memenuhi kriteria inklusi dari 3 sekolah dasar swasta di Jakarta. Rerata performa motorik (kecepatan reaksi, hits, dan commission error) serta iatensi dan amplitude komponen-komponen ERP (N I00, N200, dan P300) yang timbul terhadap nada target direkam dan dianalisa berdasarkan faktor usia dan jenis kelamin.

Basil :
Kecepatan reaksi, hits, dan latensi P300 secara statistik berbeda bermakna berdasarkan faktor usia. Terdapat korelasi negatif dengan kekuatan sedang antara faktor umur dan kecepatan reaksi dan latensi P300 ($p<0.0l$). Sedangkan faktor usia dan hits berkorelasi secara positif dengan kekuatan sedang. Tidal(didapatkan perbedaan yang bermakna secara statistik antara performa motorik maupun latensi dan amplitudo P300 terhadap faktor jenis kelamin.

Kesimpulan :
Perkembangan fungsi kognitif anak tampaknya berkaitan dengan maturasi otak sejalan dengan pertambahan usia, dan tidak berkaitan dengan faktor jenis kelamin. Perneriksaan ERP auditorik diskriminasi 2 nada dapat digunakan untuk menilai perkembangan fungsi kognitif anak.
.....Background :
Event Related Potentials (ERPs), especially P300, are electrical changes generated in the brain in association with stimuli processing. They can provide a non-invasive but objective means to evaluate the activity of human brain associated with attention, perception, memory, decision making, and control of behavior.

Methods:
Auditory ERP two-tone discrimination (`oddball) paradigm was presented to 81 healthy asymtomatic school aged children of three private elementary schools in Jakarta. Motor performances (reaction time, hits, and commission error) and latency and amptlitude of ERP components (N100, N200, and P300) elicited to target stimuli were recorded and analyzed for between group difference (age and sex).

Results:

Reaction times, hits, and P300 latency were significantly different between age groups (pcO.01). There were also moderately negative correlation between age groups and reaction limes and P300 latencies ($p<0.01$). Moderately positive correlation were noted between hits and age (p <0 01). None of motor performances nor latencies and amplitudes of P300 were different between sex groups ($p>0.05$).

Conclusions:

Maturation of cognitive brain functions in children are related to age development despite of sex gender. Auditory ERP two-tone discrimination ERPs are excellent tools for the study of cognitive brain functions in humans and the developmental time course of these functions in childhood.