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# Hubungan antara kadar seng dalam serum dengan fungsi eksekutif pada anak dengan gangguan pemusatan perhatian hiperaktivitas (GPPH) = Correlation between serum zinc and executive function in children with attention deficit hyperactivity disorder (ADHD) / Rivo Mario Warouw Lintuuran

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Abstrak

[ABSTRAK<br>
Latar Belakang: Belum ada hubungan konsisten antara kadar seng dalam serum dengan gangguan fungsi eksekutif pada anak dengan GPPH. Studi ini bertujuan untuk mengidentifikasi perbedaan rerata kadar seng dalam serum pada anak GPPH dengan gangguan fungsi eksekutif, tanpa gangguan fungsi eksekutif and anak non GPPH, dan korelasi antara kadar seng dalam serum dengan fungsi eksekutif pada anak GPPH.
Metode. Penelitian ini adalah studi potong-lintang dengan kontrol. Sembilan puluh anak dari dua Sekolah Dasar di Jakarta diambil secara acak sebagai subjek penelitian yang dibagi dalam 30 anak GPPH dengan gangguan fungsi eksekutif, 30 anak GPPH tanpa gangguan fungsi eksekutif, dan 30 anak non GPPH. Kadar seng dalam serum diperiksa dengan metode Inductively Coupled Plasma-Mass Spectrophotometry. Fungsi eksekutif didapatkan melalui pemeriksaan BRIEF versi bahasa Indonesia. Analisis data menggunakan SPPS for Windows versi 20.
Hasil. Dari seluruh subjek penelitian, 75% mengalami defisiensi seng. Ditemukan 60% anak GPPH dengan gangguan fungsi eksekutif memiliki kadar seng tidak normal. Rerata serum seng pada anak GPPH dengan gangguan fungsi eksekutif adalah 59.40 g/dL, pada anak GPPH tanpa gangguan fungsi eksekutif adalah 55.36 g/dL, dan pada anak non GPPH adalah 52.93 g/dL. Tidak ada perbedaan bermakna pada rerata serum seng antara tiga kelompok (p = 0.119). Korelasi antara kadar seng pada anak GPPH dengan fungsi eksekutif adalah r=0.128.
Kesimpulan. Kadar seng dalam serum tidak berhubungan secara langsung dengan gangguan fungsi eksekutif, namun diduga berhubungan dengan gejala klinis GPPH. Perlu dilakukan penelitian lanjutan untuk mengetahui lebih jelas hubungan antara seng dalam serum dengan fungsi eksekutif pada anak dengan GPPH.
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ABSTRACT<br>
Background: It was assumed that there might be association between serum zinc level and executive function in children with ADHD. This study aimed to identify mean differences between serum zinc in ADHD children with executive dysfunction, without executive dysfunction, and non ADHD children, and to find correlation between serum zinc level and executive function in children with

ADHD.
Method. This was a cross-sectional study with control group. Ninety children from two elementary schools in Jakarta were randomly selected as research subjects. They were categorized into ADHD children with executive dysfunction (n=30), ADHD children without executive dysfunction (n=30), and non ADHD children (n=30). Serum zinc was analyzed using Inductively Coupled Plasma-Mass Spectrophotometry method. Executive function was examined using BRIEF-Indonesian version. Data was analyzed using SPSS 20 for Windows.
Result. Seventy five percent of research subjects experinced zinc deficiency. Meanwhile, 60% of children with ADHD suffered from zinc deficiency. There was no significant difference in mean serum zinc between ADHD children with executive dysfunction, without executive dysfunction, and non ADHD children (59.40 g/dL vs. 55.36 g/dL vs. 52.93 g/dL, p=0.119). The coefficient correlation between serum zinc level and executive function in ADHD children was 0,128.
Conclusion. Serum zinc level might not associate directly with executive dysfunction, however it might link with clinical symptoms of ADHD. Further study needs to be done in order to obtain a more clear understanding of serum zinc and executive function in children with ADHD, Background. It was assumed that there might be association between serum zinc
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