Perbedaan rerata kadar serum feritin terkait fungsi eksekutif pada Anak Dengan Gangguan Pemusatan Perhatian Hiperaktivitas (GPPH) = Difference in ferritin serum levels relate to executive function in Children with Attention Deficit/Hiperactivity Disorders (ADHD)

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Abstrak

Latar Belakang : Gangguan Pemusatan Perhatian/ Hiperaktivitas (GPPH) merupakan gangguan psikiatrik yang sering dijumpai dan diduga terkait dengan gangguan fungsi eksekutif serta defisiensi mikronutrien salah satunya zat besi (feritin). Feritin diperkirakan terkait dengan fungsi eksekutif pada GPPH dalam aktivitasnya pada sistem dopaminergik.
Tujuan : Mengetahui hubungan antara kadar feritin dalam serum dan fungsi eksekutif pada anak dengan GPPH.
Metode : Desain penelitian ini adalah potong lintang memakai data sekunder, membandingkan rerata kadar feritin dalam serum 22 anak GPPH dengan gangguan fungsi eksekutif , 22 anak GPPH tanpa fungsi eksekutif, dan 22 anak Sehat yang berusia 6-12 tahun. Uji Kruskal Wallis digunakan untuk mengetahui perbedaan yang bermakna diantara ketiga kelompok tersebut dan uji analisis Mann-Whitney digunakan untuk mengetahui perbedaan bermakna pada kelompok anak GPPH. Penegakkan diagnosis GPPH memakai Mini-International Neuropsychiatric Interview-kid (MINI KID), Gangguan Fungsi Eksekutif ditentukan dengan Behavior Rating Inventory of Executive Function versi Bahasa Indonesia (BRIEF-BI).
Hasil : Nilai rerata feritin dalam serum sebesar 48,4 ng/mL pada kelompok anak GPPH tanpa gangguan fungsi eksekutif, sebesar 43,5 ng/mL pada kelompok anak GPPH dengan gangguan fungsi eksekutif, serta sebesar 44,0 ng/mL pada kelompok anak sehat. Dari uji Kruskal Wallis Tidak didapatkan perbedaan bermakna antara rerata kadar feritin pada kelompok anak GPPH tanpa gangguan fungsi eksekutif, kelompok anak GPPH dengan gangguan fungsi eksekutif, dan kelompok anak sehat ($p > 0,05$). Tidak didapatkan perbedaan yang signifikan juga antar kelompok GPPH dengan uji Mann-Whitney ($p > 0,05$).
Kesimpulan : Pada penelitian ini tidak didapatkan adanya perbedaan rerata kadar feritin dalam serum antara GPPH dengan gangguan fungsi eksekutif, GPPH tanpa gangguan fungsi eksekutif, dan anak Sehat yang secara statistik signifikan. Diperlukan studi lebih lanjut untuk melihat peran feritin pada aktivitas dopaminergik otak pada anak GPPH.
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Background : Attention Deficit/ Hiperactivity Disorders (ADHD) is a common psychiatric disorder and associated with impaired executive function as well as one of micronutrient deficiencies such iron (ferritin). It has been suggested that ferritin was associated with executive function in ADHD trough activity on the dopaminergic system.
Objectives : To find the relationship between ferritin serum levels and executive function in children with ADHD.
Methods : This study is cross-sectional using secondary data, comparing the mean levels of ferritin serum in 22 ADHD children with impaired executive function, 22 ADHD children with normal executive functions, and 22 healthy children aged 6-12 years. Kruskal Wallis test was performed to determine significant

differences among the three groups and Mann-Whitney test analysis test was performed to determine significant differences between ADHD group. The diagnosis of ADHD was diagnosed by MINI KID, while executive function were assessed with BRIEF-Indonesian version.

Results : Mean values obtained in ferritin serum was 48.4 ng / mL in ADHD children with normal executive function, 43.5 ng / mL in ADHD children with impaired executive function, and 44.0 ng / mL in healthy children . With Kruskal Wallis test analysis, there were no significant differences between ferritin serum levels in the group of ADHD children with normal executive function, ADHD children with impaired executive function, and a group of healthy children ($p > 0.05$). There were also no significant differences between ADHD group with mann-Whitney test analysis ($p >0.05$).

Conclusions : In this study, there has been found no statistical significant differences in ferritin serum levels between ADHD with impaired executive function, ADHD with normal executive function, and healthy children. Further study is needed to look at the role of ferritin in dopaminergic activity within the brain of ADHD children.