Hubungan Antara Kadar Insuline Like Growth Factor (IGF-1) dengan Perkembangan Kognitif pada Anak Stunting: Systematic Review = Correlation between Insuline Like Growth Factor (IGF-1) Consentration and Cognitive development in stunted children: Systematic Review

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Abstrak

Latar Belakang: Stunting merupakan kondisi malnutrisi yang terjadi pada 1000 hari pertama sejak kosepsi, dengan gejala klinis spesifik berupa tinggi tubuh lebih rendah dari normal. Tidak hanya menyebabkan gangguan pertumbuhan fisik, dampak stunting juga dapat meliputi penurunan fungsi kognitif, motorik, serta hambatan perkembangan bahasa penderita. Prevalensi stunting di negara berkembang seperti Indonesia tergolong tinggi. Telah dilaporkan adanya penurunan kadar IGF-1 dan perkembangan kognitif pada anak stunting. Salah satu peran IGF-1 adalah dalam neurogenesis dan synaptogenesis.
Tujuan: Mengevaluasi secara sistematis berbagai literatur bagaimana hubungan antara kadar/ekspresi IGF-1 dengan perkembangan kognitif anak stunting.
Metode: Pencarian literatur dilakukan dengan menggunakan pedoman alur Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) pada tiga electronic database. Penilaian kualitas literatur dilakukan dengan menggunakan QUADAS-2.
Hasil: Delapan jurnal memenuhi syarat tahap seleksi artikel sesuai metode PRISMA. Jurnal-jurnal tersebut diterbitkan pada tahun 2012-2020. Di antara kedelapan jurnal tersebut, terdapat tiga jurnal yang membahas tentang hubungan IGF-1 dengan stunting, dua jurnal yang membahas hubungan IGF-1 dengan perkembangan kognitif, sementara tiga jurnal lainnya membahas hubungan stunting dengan kognitif.
Kesimpulan: Ekspresi IGF-1 yang rendah berkaitan dengan kejadian stunting. Kondisi stunting dan IGF-1 juga berkaitan erat dengan penurunan kapasitas kognitif. Namun untuk diagnosis hambatan kognitif pada anak stunting berdasarkan konsentrasi IGF-1 perlu penelaahan lebih lanjut.
.....Background: Stunting is a condition of malnutrition which occurs during the first 1000 days since conception and has specific clinical sign as a significantly reduced height. Not only it results in disturbed physical growth, stunting could also lead to a decrease in cognitive function, motor function, and language development. The prevalence of stunting in developing countries such as Indonesia is high. It had been reported that there were decreased IGF-1 level and cognitive capacity in stunted children. IGF-1 is known to have role in synaptogenesis and neurogenesis.
Objectives: To systematically evaluate the various literatures for analyzing the relationship between the level of IGF-1 and the inhibited cognitive capacity in stunted children.
Methods: Literature researches using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines through three electronic databases, PubMed, ScienceDirect, and Scopus. Quality assessment of bias was examined using QUADAS-2 tool.
Results: A literature search identified eight eligible journals which were published in 2012-2020. The three journals discuss the relationship of IGF-1 with stunting, two journals discuss the relationship of IGF-1 with cognitive while the other three journals discuss the relationship of stunting with cognitive.

Conclusion: Low IGF-1 expression is associated with stunting. Stunting conditions and IGF-1 are also closely related to cognitive impairment in children. However, whether the cognitive impairment in stunted children were solely due to the IGF-1 decline, needs to be re-confirmed.