

Peran inflamasi usus pada anak usia di bawah 2 tahun terhadap kejadian pendek = The role of intestinal inflammation in children under 2 years of age in stunted incidents

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Abstrak

Latar Belakang dan Tujuan: Prevalensi pendek pada anak usia di bawah dua tahun (baduta) di Indonesia pada tahun 2018 sebesar 29,9%, sedangkan di Jakarta sebesar 27,2%. Kondisi pendek pada awal kehidupan berhubungan dengan peningkatan morbiditas dan mortalitas, serta dapat mengurangi kapasitas fisik dan peningkatan risiko penyakit metabolik pada usia dewasa. Tujuan penelitian adalah memahami peran inflamasi usus pada baduta terhadap kejadian pendek.

Metode dan bahan: Studi dengan desain kasus kontrol yang dilakukan pada anak usia 6–23 bulan di Kelurahan Kampung Melayu, Jakarta. Penentuan subjek penelitian secara acak sederhana. Pendek ditetapkan berdasarkan nilai z-score panjang badan menurut----- umur (PB/U). Pengukuran panjang dan tinggi badan menggunakan infantometer dan microtoise. Penilaian hormon pertumbuhan berdasarkan kadar TSH, sedangkan penilaian inflamasi usus berdasarkan pengukuran kadar Reg 1B. Fungsi absorpsi usus ditetapkan dengan pengukuran kadar xilosa darah. Infeksi parasit dideteksi dengan pemeriksaan feses secara makroskopis dan kultur Blastocystis. Penilaian asupan energi dan zat gizi makro dilakukan dengan metode recall 24 jam. Frekuensi pengukuran panjang dan tinggi badan, inflamasi usus dan penilaian asupan dilakukan 2 kali dengan selang waktu 6 bulan.

Hasil: Pada penapisan 269 anak didapatkan 20,4% pendek dengan 55,8% laki-laki, 55,0% kelompok umur 12-23 bulan dan 47,3% memiliki kedua orang tua normal. Profil subjek penelitian adalah 61,1% laki-laki, 88,9% pada kelompok umur 12-23 bulan dan memiliki kadar TSH normal. Persentase rata-rata asupan energi dan zat gizi makro anak pendek lebih rendah daripada anak normal, tetapi tidak berbeda secara statistik. Pada subjek penelitian tidak ditemukan Soil Transmitted Helminths dan hanya 1 anak normal yang positif Blastocystis hominis. Untuk pemeriksaan Reg 1B tidak ditemukan perbedaan antara anak pendek dan normal, tetapi subjek penelitian yang mengalami peningkatan kadar Reg 1B sebagian besar terjadi penurunan nilai Z-score PB/U dan berbeda bermakna secara statistik. Pada pemeriksaan kadar xilosa darah tidak ditemukan perbedaan antara anak pendek dan normal. Dalam analisis korelasi, tidak diperoleh korelasi antara infeksi parasit usus dengan inflamasi usus dan malabsorpsi tetapi ada korelasi bermakna antara inflamasi usus dengan malabsorpsi.

Kesimpulan: Inflamasi usus terjadi pada anak pendek dan normal serta secara signifikan menurunkan nilai Z-score PB/U dari kedua anak tersebut dan berkorelasi secara bermakna dengan malabsorpsi.

.....Background and Objective: The prevalence of stunting in children under two years in Indonesia in 2018 is 29.9%, while in Jakarta it is 27.2%. Stunted early in life is associated with increased morbidity and mortality, and can reduce physical capacity and increase the risk of metabolic diseases in adulthood. The aim of the study was to understand the role of intestinal inflammation in children under 2-yrs of age in

stunted incidents.

Materials and Methods: A case-control study involving children aged 6-23 months in Kampung Melayu Village, Jakarta was done in 2018. Study sampling was determined by simple randomization. Stunting is determined based on the z-score of the body length by age (LZA). Length was measured using infantometer while height was measured by microtoise. Growth hormone was determined by TSH levels, while intestinal inflammation was determined with faecal Reg 1B levels. The function of intestinal absorption is determined by blood xylose levels. Parasitic infections are determined by macroscopic fecal examination and Blastocystis culture. Assessment of intake of energy and macro nutrients was analyzed by 24-hour recall method. The frequency of length and height measurements, intestinal inflammation and intake assessment were carried out twice with an interval of 6 months.

Results: Screening of 269 children found 20.4% of stunting with 55.8% of men, 55.0% of age group 12-23 months and 47.3% had both normal parents. The percentage of the average intake of energy and macro nutrients from stunting was lower than normal, but not statistically different. Soil Transmitted Helminths were not found and only one child for positive Blastocystis hominis. For the examination of Reg 1B there was no difference between stunted and normal children, but the study subjects who experienced an increase in Reg 1B levels were mostly accompanied by decreased Z-score values of LZA and were significantly different. On examination of blood D-xylose levels no differences were found between stunted and normal children. In correlation analysis, there was no correlation between intestinal parasitic infection and intestinal inflammation and malabsorption but there was a significant correlation between intestinal inflammation and malabsorption.

Conclusion: Intestinal inflammation occurs in stunted and normal children and significantly decreases the Z-score of LZA from these two children and correlates significantly with malabsorption.