

Hubungan mikrosporidiosis intestinal dengan calprotectin feces pada anak dengan diare = Association between intestinal microsporidiosis and fecal calprotectin in children with diarrhea

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Abstrak

Latar belakang: Mikrosporidiosis adalah penyakit infeksi protozoa pada saluran gastrointestinal yang disebabkan oleh Microsporidia. Populasi anak merupakan salah satu kelompok populasi berisiko mengalami mikrosporidiosis karena imunitas yang belum matang. Kerusakan mukosa intestinal terkait mikrosporidiosis tersebut dapat menyebabkan diare kronik, malabsorpsi hingga berat badan menurun terutama pada anak. Namun, mikrosporidiosis kurang terdiagnosis karena gejala klinis tidak spesifik dan pemeriksaan spesifik Microsporidia tidak umum dilakukan. Di Indonesia, infeksi Microsporidia pada anak dengan diare belum pernah diinvestigasi. Untuk mengetahui kerusakan mukosa intestinal akibat mikroposiridosis, pemeriksaan calprotectin feces dapat dilakukan. Penelitian ini bertujuan untuk mengetahui prevalensi mikrosporidiosis intestinal pada anak dengan diare dan hubungannya dengan calprotectin feces positif.

Metode: Penelitian ini menggunakan desain potong lintang. Sebanyak 112 sampel feces dikoleksi dari Laboratorium Parasitologi FKUI yang berasal dari pasien anak di RSUPN Cipto Mangunkusumo (RSCM) berusia 0 sampai 18 tahun dengan diagnosis diare. Setiap sampel dipulas dengan pewarnaan trichrome untuk mendeteksi Microsporidia dan dilakukan pemeriksaan calprotectin feces kualitatif. Untuk mendeteksi parasit usus lain, dilakukan pemeriksaan mikroskopik langsung, konsentrasi, kultur Blastocystis, pulasan modifikasi tahan asam, dan pemeriksaan coproantigen Giardia dan Cryptosporidium. Data sekunder terkait diagnosis klinis, status gizi dan demografi, didapatkan dari rekam medis. Analisis statistik dilakukan antara subjek dengan infeksi tunggal Microsporidia dan hasil calprotectin feces.

Hasil: Prevalensi mikrosporidiosis intestinal pada anak dengan diare yaitu 42,9%, dimana 50% merupakan infeksi Microsporidia tunggal. Infeksi tunggal Microsporidia terbanyak pada usia bayi 8/24 (33,3%), jenis diare akut 17/24 (70,8%) dan penyakit dasar atresia bilier 7/24 (29,1%). Infeksi pada anak laki – laki 15/24 (62,5%), status gizi baik & kurang sama yaitu sebanyak 8/24 (33,3%). Proporsi calprotectin feces positif pada anak dengan diare dan positif Microsporidia yaitu 14/24 (58,3%). Secara statistik, ditemukannya Microsporidia intestinal tidak berhubungan dengan calprotectin feces.

Kesimpulan: Prevalensi infeksi Microsporidia pada anak dengan diare di RSCM tinggi, umumnya pada diare akut dan tidak didapatkan hubungan antara mikrosporidiosis intestinal dengan calprotectin feces.

.....Background: Microsporidiosis is protozoan infection in gastrointestinal tract caused by Microsporidia. Children have been identified as a population group at risk of developing microsporidiosis due to their immature immune system. Damage to the intestinal mucosa related to microsporidiosis causes chronic diarrhea, malabsorption and weight loss, especially in children. However, microsporidiosis was underdiagnosed because of the clinical symptoms were not specific and Microsporidia examination was not commonly performed. In Indonesia, Microsporidia infection in children with diarrhea has not been investigated. To determine the intestinal mucosa damage due to microposiridosis, a fecal calprotectin test can be performed. This study aims to determine the prevalence of intestinal microsporidiosis in children with diarrhea and its association with positive fecal calprotectin.

Methods: The cross-sectional study design was performed in this research. Stool samples as much as 112 were obtained from the FKUI Parasitology Laboratory from pediatric patients at RSUPN Cipto Mangunkusumo (RSCM) aged 0 to 18 years with a clinical data of diarrhea. Each stool sample was stained with trichrome for Microsporidia detection and a qualitative fecal calprotectin test was performed. To detect other intestinal parasites, direct microscopic examination, concentration, Blastocystis culture, acid-fast modified smear, and Giardia - Cryptosporidium coproantigen examination were also performed. Secondary data related to clinical diagnosis, nutritional status and demographics were obtained from medical records. Statistical analysis was performed between subjects with a single Microsporidia infection and fecal calprotectin results.

Results: The prevalence of intestinal microsporidiosis in children with diarrhea was 42.9% and 50% of them were single Microsporidia infections. Population characteristics of intestinal microsporidiosis in children with diarrhea, are mostly found in infants 8/24 (33.3%), acute diarrhea 17/24 (70.8%) and underlying disease of biliary atresia 7/24 (29.1%). Infections in boys were 15/24 (62.5%), good & poor nutritional status in equal number 8/24 (33.3%). The proportion of positive fecal calprotectin in children with diarrhea and Microsporidia positive is 14/24 (58.3%). Statistically, the presence of intestinal Microsporidia is not associated with fecal calprotectin.

Conclusion: The prevalence of Microsporidia infection in children with diarrhea at RSCM is high, generally in acute diarrhea and there is no association between intestinal microsporidiosis and fecal calprotectin.