

Hubungan mikrosporidiosis intestinal dengan calprotectin feses 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 mikrosporidiosis, pemeriksaan calprotectin feses dapat dilakukan. Penelitian ini bertujuan untuk mengetahui prevalensi mikrosporidiosis intestinal pada anak dengan diare dan hubungannya dengan calprotectin feses positif.

Metode: Penelitian ini menggunakan desain potong lintang. Sebanyak 112 sampel feses 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 feses 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 feses.

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 feses positif pada anak dengan diare dan positif *Microsporidia* yaitu 14/24 (58,3%). Secara statistik, ditemukannya *Microsporidia* intestinal tidak berhubungan dengan calprotectin feses.

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

.....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 microposiridiosis, 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.