

Proporsi bakteri saluran cerna pada anak dengan infeksi saluran kemih berulang = The Proportion of gastrointestinal bacteria in children with recurrent urinary tract infection

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Abstrak

ABSTRAK

Latar belakang : Infeksi saluran kemih ISK berulang adalah ISK yang timbul kembali pasca pengobatan, dengan kejadian 40-50 dari ISK pertama. Kekerapan berulangnya ISK meningkatkan komplikasi gagal ginjal kronik. Salah satu faktor penyebab adalah kolonisasi bakteri patogen feses dari saluran cerna di daerah periuretra. Bakteri saluran cerna terdiri dari 3 kelompok, bakteri patogen, komensal dan bakteri menguntungkan. Penelitian membuktikan disbiosis antara bakteri patogen dan menguntungkan berkaitan dengan kejadian penyakit sistemik, namun belum ada penelitian tentang pengaruh hal tersebut pada ISK berulang. Tujuan : Mengetahui kondisi disbiosis yaitu perbedaan proporsi *Escherichia coli* dan *Bifidobacterium* sp. saluran cerna pada anak ISK berulang. Metode : Penelitian uji potong lintang pada anak ISK berulang usia 6 bulan sampai dengan <hr />

ABSTRACT
Background Recurrent urinary tract infection UTIr is repeated UTI post antibiotic treatment, with recurrency is 40 50 from the first infection. Recurrency of UTI increases possibility of chronic renal failure as complication. One of the causal factors is colonization of faecal pathogens from gastrointestinal tract in periurethra. Gastrointestinal tract bacteria is divided into 3 groups pathogens, comensal, and beneficial bacteria. Studies proved that imbalance of condition or dysbiosis between pathogens and beneficial bacteria lead to systemic diseases, but there were no studies in UTIr. Objective To know about dysbiosis condition based on proportion differences between gastrointestinal *Escherichia coli* and *Bifidobacterium* sp. in UTIr. Methods A cross sectional studies with children with UTIr, aged 6 months old until 18 years old, in Pediatric Departement Cipto Mangunkusumo Hospital as a subject. Healty child which had been matched by sex and age was choosen as a control group. Faecal samples from both groups underwent DNA extractions, using real time PCR method, to look for *Escherichia coli* and *Bifidobacterium* sp. amount and proportions. Results There was a total of 25 subjects, 8 32 were classifed as simplex UTI and 17 68 were complex UTI, also 25 healthy children as control. The total amount of *Escherichia coli* in UTIr compared to control was 1.099.271 vs 453.181 p 0,240. The total amount of *Bifidobacterium* sp. in UTIr compared to control was 1.091.647 vs 359.336 p 0,148. *Escherechia coli* proportion in UTIr compared to control was 10,97 vs 4,74 p 0,014 that shown a significant different, while *Bifidobacterium* sp. 6,54 vs 9,33 p 0,594. In UTIr group, proportion differences beetwen *Escherichia coli* and *Bifidobacterium* sp. was 10,97 vs 6,54 p 0,819, while in control group 4,74 vs 9,33 p 0,021 which showed that *Bifidobacterium* sp. has a significant different. The total amount of *Escherichia coli* in simplex compared to complex UTIr was 996.004 vs 1.099.271 p 0,798, while amount of *Bifidobacterium* sp. 835.921 vs 1.196.991 p 0,711. Logarithm of *Escherichia coli* proportion in simplex and complex UTIr was 5,50 SB 1,45 vs 5,92 SB 0,71 p 0,333, while *Bifidobacterium* sp. 5,85 SB 0,75 vs 6,04 SB 5,50 p 0,562 showed no significant differences. Conclusions *Escherchia coli* proportion was higher in UTIr children and *Bifidobacterium* sp. proportion was higher in healthy children. The proportion of both bacteria was equal in simplex and

complex UTIr.