# Perbandingan deteksi clostridium difficile toksigenik menggunakan rapid test dan real time pcr pada pasien dengan terapi antibiotik di Rumah Sakit Cipto Mangunkusumo = Toxigenic clostridium difficile detection using toxin rapid test and real time pcr in patients with antibiotic therapy at Cipto Mangunkusumo Hospital

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Abstrak

Infeksi Clostridium difficile toksigenik meningkat tajam pada satu dekade terakhir, menyebabkan pseudo membran colitis (PMC) dan Clostridium difficile associated diarrhea (CDAD). Salah satu faktor risikonya adalah penggunaan antibiotik. Tujuan penelitian adalah mengetahui prevalensi dan gambaran karakteristik subyek dengan Clostridium difficile toksigenik serta menilai kemampuan rapid test toksin terhadap real time PCR. Subyek penelitian prospektif ini adalah 90 subyek dewasa dengan terapi antibiotik lebih dari 2 minggu. Hasil pemeriksaan menggunakan rapid test dan real time PCR disajikan dalam tabel 2x2, dilakukan uji statistik dengan chi square. Hasil penelitian menunjukkan 2 spesimen dieksklusi karena hasil invalid, 24 spesimen positif dan 64 negatif dengan rapid test toksin; 33 spesimen positif dan 55 negatif dengan real time PCR. Prevalensi Clostridium difficile toksigenik berdasar rapid test toksin adalah 27,3% dan real time PCR 37,5%. Terdapat perbedaan bermakna antara konsistensi feses dan jumlah antibiotik dengan terdeteksinya Clostridium difficile toksigenik (p<0,05). Terdapat hubungan antara lama terapi antibiotik dengan terdeteksinya Clostridium difficile toksigenik menggunakan real time PCR (p=0,010, RR=2,116). Sensitivitas, spesifisitas, nilai duga positif, nilai duga negatif, rasio kemungkinan positif dan rasio kemungkinan negatif rapid test toksin terhadap real time PCR berturut-turut adalah 69,7%; 98,2%; 95,8%; 84,4%; 39,2 dan 0,31. Dari hasil penelitian disimpulkan bahwa prevalensi Clostridium difficile di RSCM lebih tinggi dibanding Malaysia, Thailand dan India; subyek dengan terapi antibiotik lebih dari 4 minggu berisiko terdeteksi Clostridium difficile toksigenik 2 kali lebih besar dibanding subyek dengan terapi antibiotik kurang dari 4 minggu; rapid test toksin dapat digunakan sebagai alat deteksi Clostridium difficile toksigenik.

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Toxigenic Clostridium difficile infection have increased sharply in the last decade, causing a pseudo membrane colitis (PMC) and Clostridium difficile associated diarrhea (CDAD). One of the biggest risk factor is the use of antibiotics. The purpose of the study was to determine the prevalence and characteristics of subjects with toxigenic Clostridium difficile and assess the ability of the toxin rapid test compared to real-time PCR. Ninety adult subjects with antibiotic therapy more than 2 weeks were enrolled to this prospective study. The results of toxin rapid test and real-time PCR were presented in 2x2 table, statistical tests was calculated with chi square. Two specimens were excluded due to invalid results. The results showed 24 positive and 64 negative specimens by toxin rapid test; 33 positive and 55 negative specimens by real-time PCR. The prevalence of toxigenic Clostridium difficile based on toxin rapid test were 27.3% and 37.5% by real-time PCR. There were significant differences between stool consistency and number of antibiotics that were used with the detection of toxigenic Clostridium difficile. There was a relationship between duration of antibiotic therapy with detection of toxigenic Clostridium difficile using real-time PCR (p = 0.010, RR =

2.116). Sensitivity, specificity, positive predictive value, negative predictive value, positive likelihood ratio and negative likelihood ratio of toxin rapid test against real-time PCR were 69.7%; 98.2%; 95.8%; 84.4%; 39.2 and 0.31, respectively. The study concluded that the prevalence of Clostridium difficile in RSCM was higher than Malaysia, Thailand and India; subjects with antibiotic therapy for more than 4 weeks had double risk to have toxigenic Clostridium difficile than subjects with antibiotic therapy for less than 4 weeks and toxin rapid test could be used as a tool to detect toxigenic Clostridium difficile.