Uji diagnostik pewarnaan gram urin untuk infeksi saluran kemih pada anak usia 2 bulan - 2 tahun = A diagnostic study of urine gram staining for urinary tract infections in children aged 2 months 2 year

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Abstrak

Latar belakang: Infeksi saluran kemih ISK merupakan salah satu penyakit infeksi yang paling sering pada anak usia 2 bulan ndash; 2 tahun. Infeksi saluran kemih sulit dideteksi karena gejalanya yang tidak khas. Diagnosis pasti dengan biakan urin membutuhkan waktu yang lama, sedangkan pemeriksaan urinalisis sulit mendeteksi ISK karena pengosongan kandung kemih yang cepat. Pewarnaan Gram urin lebih mudah dilakukan, cepat, dan murah sehingga diajukan sebagai metode diagnosis alternatif.
Tujuan: Mengetahui kesesuaian pemeriksaan pewarnaan Gram urin dibandingkan dengan biakan urin dalam mendiagnosis ISK pada anak usia 2 bulan - 2 tahun.
Metode: Studi potong lintang, di RSCM Jakarta, bulan Mei hingga Desember 2016. Penelitian melibatkan 59 anak usia 2 bulan ndash; 2 tahun dengan klinis tersangka ISK. Urin diambil dengan teknik kateterisasi peruretra. Sampel urin diperiksakan pewarnaan Gram, biakan urin dan urinalisis. Biakan urin sebagai baku emas pemeriksaan, dinyatakan sebagai ISK apabila tumbuh kuman dengan koloni >50.000 cfu/mL. Pewarnaan Gram dinyatakan positif ISK apabila ditemukan satu jenis bakteri per lapang pandang besar.
Hasil: Prevalens ISK pada penelitian ini sebesar 38,9. Sensitivitas pewarnaan Gram urin sebesar 47,8 IK 95 26,8-69,4, spesifisitas 97,2 IK 95 85,5-99,9, NDP 91,7 IK 95 60,3-98,8, NDN 74,5 IK 95 60,3-98,8, LR 17,2 IK 95 2,4-124,6, LR - 0,54 IK 95 0,36-0,8, akurasi 78.
Simpulan: Terdapat kesesuaian antara pemeriksaan pewarnaan Gram urin dengan biakan urin dalam mendiagnosis ISK. Terapi antibiotik dapat segera diberikan apabila hasil pemeriksaan Gram urin positif menunjukkan hasil positif. Pemberian antibiotik dapat ditunda menunggu hasil biakan urin, apabila gejala klinis ISK tidak terlalu khas dan tidak ditemukan bakteri dari pewarnaan Gram urin.
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Background: Urinary tract infection UTI one of the most common disease in children age 2 months 2 years. Urinary tract infection in children is often difficult to diagnose because of the atypical symptoms. The definitive diagnosis with urine culture has its limitations because it takes a long time to get results, while it is difficult to detect UTI using urinalysis due to the rapid bladder emptying. Gram staining of urine is thought to be easier, faster, and cheaper, therefore it is proposed as an alternative method for early diagnosis of UTI.
Objective: To compare the diagnostic accuracy of urine Gram staining with urine culture to diagnose UTI in children aged 2 months to 2 years.
Methods: A cross sectional study was conducted at Cipto Mangunkusumo Hospital from May to December 2016. The study involved 59 children aged 2 months 2 years drawn through consecutive sampling method with clinically suspected UTI. Urine sample was taken with per urethra catheterization techniques. Urine samples were examined by Gram staining, urine culture and urinalysis. Urine culture as a gold standard examination is expressed as UTI when colonies of bacterias grow 50,000 cfu mL. Gram stain tested positive for UTI if one type of bacteria is found per high power field.

Results: The prevalence of UTI in this study is 38.9. The sensitivity of urine Gram staining is 47.8 95 CI 26.8 to 69.4, specificity of 97.2 95 CI 85.5 to 99.9, NDP 91.7 CI 95 from 60.3 to 98.8, NDN 74.5 95 CI 60.3 to 98.8, LR 17.2 95 CI 2.4 to 124.6, LR 0.54 95 CI 0.36 to 0.8, and accuracy of 78.
Conclusion There is a correlation between the urine Gram staining with urine culture in diagnosing UTI in children aged 2 months 2 years. Antibiotics may be administered immediately when urine Gram staining shows positive result. Antibiotics for UTI may be delayed until the results of urine culture, if clinical symptoms of UTI is not very distinctive and urine Gram staining shows negative result.