Deteksi multidrug resistant mycobacterium tuberculosis dengan accupower TB and mdr real-time PCR KIT di Rumah Sakit Persahabatan dan Rumah Sakit DR Cipto Mangunkusumo = Detecting multidrug resistant mycobacterium tuberculosis with accupower TB and mdr real-time PCR KIT at Persahabatan Hospital and DR Cipto Mangunkusumo Hospital / Betha Ariesanty Anggraini Hartono

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Abstrak

ABSTRAK
Multidrug-resistant tuberculosis (MDR-TB) adalah tuberkulosis yang disebabkan oleh galur Mtb yang resisten setidaknya terhadap rifampisin dan isoniazid (INH). Penelitian ini bertujuan menilai kemampuan AccuPower TB and MDR Real-Time PCR Kit sebagai metode alternatif dalam mendeteksi Mtb serta resistensi terhadap isoniazid dan rifampisin dibandingkan dengan metode kultur dan uji resistensi konvensional. Subjek penelitian terdiri dari 61 pasien tersangka MDR-TB. Sampel sputum dari semua subjek dilakukan pemeriksaan untuk Mtb dan resistensi terhadap INH dan rifampisin dengan Accupower TB and MDR Real-Time PCR Kit dan metode konvensional. 28 dari 52 pasien terdeteksi resisten terhadap INH dan rifampisin. 1 subjek terdeteksi hanya resisten terhadap INH. 1 subjek terdeteksi hanya resisten terhadap rifampisin. Sensitivitas dan PPV kit dalam mendeteksi Mtb diperoleh 98,1% dan 86,7%. Sensitivitas, spesifisitas, PPV, dan NPV kit dalam mendeteksi resistensi Mtb terhadap INH diperoleh 62,1%, 86,9%, 85,7%, dan 64,5%. Sensitivitas, spesifisitas, PPV, dan NPV kit dalam mendeteksi resistensi Mtb terhadap Rifampisin diperoleh 93,1%, 86,9%, 90% dan 90,9%. Accupower TB and MDR Real-Time PCR Kit dalam mendeteksi resistensi ganda Mtb terhadap INH dan Rifampisin (MDR-TB) memperoleh sensitivitas 53,8%, spesifisitas 57,1%, PPV 88,9%, dan NPV 64,7%. Kit ini cukup baik dalam mendeteksi Mtb dan resistensi terhadap rifampisin, tetapi kurang baik untuk mendeteksi resistensi terhadap INH. Deteksi adanya resistensi tunggal diperlukan, karena monoresistensi dapat berkembang menjadi multi-drug dan extended-drug resistant.
<hr><i>ABSTRACT
Multidrug-resistant tuberculosis (MDR-TB) is caused by mycobacterium that is resistant at least to rifampicin and isoniazid (INH). The aim of this study was to assess the performance of Accupower TB and MDR Real-Time PCR Kit compared to the conventional culture-based drug susceptibility test for Mycobacterium tuberculosis (Mtb). Subject was consisted of 61 patients who were suspected of MDR-TB. Sputum samples from the participants were tested for Mtb and INH and rifampicin resistance by Accupower TB and MDR Real-Time PCR Kit and conventional method. 28 of 52 patients were detected resistance to both INH and rifampicin. 1 subject was detected INH resistance only. 1 subject was detected rifampicin resistance only. Sensitivity and PPV of the kit to detect Mtb were 98,1% and 86,7%, respectively. Sensitivity, specificity, PPV, and NPV of the kit in detecting INH resistance were 62,1%, 86,9%, 85,7%, and 64,5%, respectively. Sensitivity, specificity, PPV, and NPV of the kit in detecting rifampicin resistance were 93,1%, 86,9%, 90%, and 90,9%, respectively. Sensitivity, specificity, PPV, and NPV of the kit in detecting INH and rifampicin resistance (MDR-TB) were 53,8%, 57,1%, 88,9%, and 64,7%, respectively.

This kit was good enough to detect Mtb and Rifampisin resistance, but not good to detect INH resistance. Detection of single drug resistance is required as mono resistance might develop further to multi-drug and extended-drug resistant.</i>