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Abstract (poster session)

Susceptibility testing of ten antibiotics against Corynebacterium spp. determined by broth microdilution, Etest and EUCAST disc diffusion methods

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Objective: EUCAST has not yet defined breakpoints for clinical categories of clinically relevant antibiotics for Corynebacterium. In this study, the performance of three methods for susceptibility testing of five Corynebacterium species has been evaluated. Methods: The activity of Penicillin G (PNG), ciprofloxacin (CIP), moxifloxacin (MOX), gentamicin (GEN), vancomycin (VAN), clindamycin (CLI), tetracycline (TET), linezolid (LIN), rifampin (RIF) and cotrimoxazole (SXT) against 60 Corynebacterium spp. (12 isolates from each of the following species: C. striatum, C. amycolatum, C. jeikeium, C. urealyticum and C. pseudodiphteriticum) were determined using BMD (broth microdilution with cation-adjusted Mueller-Hinton broth with 3% laked horse blood), or on solid medium (Mueller-Hinton agar with 5 % defibrinated horse blood and 20 mg ß-NAD/L) by Etest and disk diffusion (disk contents as defined by EUCAST). BMD was performed in one lab in Spain, Etest in one lab in Sweden and disk diffusion in three labs (one in Spain, two in Sweden). Plates were incubated at 35ºC in air (microdilution) or 5% CO2 (agar media) and read after 16-20h or, in case of insufficient growth, after another 24 h. Results: Microdilution results could be read after 16-20h incubation for all species but C. pseudodiphteriticum. Etest MICs and inhibition zones could be determined at 16-20 h for all 12 C. striatum, but incubation for 40-44h was needed to a varying degree for the other species. Essential agreement (EA, that in +/- 1 dilution) between microdilution and Etest was: PNG and VAN (96.7%), GEN (91.7%), RIF (88.3%), LNZ (81.7%), CIP (76.7%), MOX (71,7%), CLI (66.7%); TET (65%), and SXT (55.0%) , For species, EA were: C. urealyticum (95.8%), C. jeikeium (85.8%), C. striatum (80.8%), C. jeikeium (73.3%) and C. pseudodiphteriticum (66.6%). Correlation between BMD MICs and inhibition zones was good, i.e. isolates with high MICs had small inhibition zones and vice versa. Correlation between inhibition zones from three labs was over all good, even when zones had to be read after another 24 h. Conclusions: Growth of Corynebacterium spp. on MH-F differs between species and it is sometimes necessary to incubate plates for longer than the standard 16 – 20h. There is a good correlation between BMD and Etest for penicillin G, vancomycin and gentamicin. More studies on MIC/zone correlation on species-identified Corynebacterium must be performed before breakpoints (or ECOFFs) can be established.