

Stenotrophomonas maltophilia: resistance to trimethoprim/sulfamethoxazole and quinolones in cystic fibrosis and non-cystic fibrosis patients

Autores BRAGA, F.S.¹, LEÃO, R. S.¹, LOBATO¹, R. B. ABREU, J. O.¹, MARQUES, E.A.¹

Instituição ¹UERJ – Universidade do Estado do Rio de Janeiro (Avenida Boulevard Vinte e Oito de Setembro, 87 – Vila Isabel – 20.551.030 – Rio de Janeiro – RJ)

Stenotrophomonas maltophilia is an emerging multi-drug-resistant global opportunistic pathogen involved in nosocomial infections. It is also an important pulmonary pathogen in cystic fibrosis patients (CF). Fluoroquinolone and trimethoprim/sulfamethoxazole (TMP-SXT) are drugs of choice for the treatment of infections caused by *S. maltophilia* but increasing resistance has been reported. This study determined the susceptibility profile of *S. maltophilia* strains obtained from CF patients assisted in two CF reference centers and hospitalized non-cystic patients (NCF) assisted in a teaching hospital in Rio de Janeiro, Brazil. A total of 226 isolates from different clinical specimens were identified using conventional methods and evaluated by the Kirby-Bauer disk diffusion method (DD) to levofloxacin, minocycline and trimethoprim/sulfamethoxazole (TMP-SXT). The minimal inhibitory concentration (MIC) of ciprofloxacin (CIP), ceftazidime (CAZ) and TMP-SXT was determined by microdilution method according to *Clinical and Laboratory Standard Institute*. Fifty two samples (23%) were obtained from CF patients and most of all isolated from sputum (92.3%). The majority of 174 samples (n=77%) obtained from NCF patients were isolated from secretion/aspirate tracheal (51.5%), sputum (27%) and blood (12.1%). By DD test all samples (n=52) of CF patients were susceptible to all evaluated antimicrobials. Only 8 (3.54%) *S. maltophilia* strains isolated from NCF patients were resistant to TMP-SXT and levofloxacin. To determine the MIC we selected samples that showed resistance to any antimicrobial in the DD test; samples isolated from blood and one isolate for each CF patients, totaling 78 samples. The MIC for TMP-SXT ranged from 0.031 to 32ug/mL with MIC₉₀ of 1ug/mL. The MIC for CAZ ranged from 0.5 to 256ug/mL (MIC₉₀=128ug/mL), and the MIC for CIP ranged from 0.5 to 32 ug/mL (MIC₉₀=8ug/ml). Using MIC determination, CIP was the antimicrobial with the highest percentage (62.8%) of resistant strains (30.77% from CF and 32.05% from NCF). Considering the simultaneous resistance, 22 samples (28 %) isolated from 14 CF and 8 NFC patients were resistant to CAZ + CIP. Five isolates of NFC were resistant to CIP + TMP-SXT. Continuous monitoring of resistance to important antibiotics is warranted to provide appropriate antimicrobial regimens for treating *S. maltophilia* infections.

Palavras-chaves: *Stenotrophomonas maltophilia*, antimicrobial resistance, cystic fibrosis, resistance to quinolones, resistance to trimethoprim/sulfamethoxazole

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