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Multiresistant *Stenotrophomonas maltophilia* as a nosocomial pathogen

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Stenotrophomonas maltophilia is one of an opportunistic pathogens of growing significance, and is the third most common nonfermentative gram-negative bacillus isolated from clinical specimens. Differentiation between *S. maltophilia* colonization and infection may be difficult. Risk factors for colonization and infection include mechanical ventilation, broad-spectrum antibiotic prophylaxis, the use of central venous catheter. *S. maltophilia* can cause a wide variety of infections including bacteremia. The infections are increasingly encountered especially in debilitated or immune suppressed patients.

S. maltophilia is intrinsically resistant to many classes of antimicrobial agents. In a worldwide SENTRY surveillance study, resistance to the antimicrobial agents tested was over 50%, with the exception of trimethoprim-sulfamethoxazole (SXT, 5%), levofloxacin (6%), ticarcillin-clavulanate (14%) and ceftazidime (34%). A KONSAR survey in 2005 showed that resistance rates to these agents were 13%, 7%, 19% and 51%, respectively.

Resistance to b-lactam agents is mediated by the production of at least two b-lactamases, L1 and L2. L1 is a zinc-dependent metalloenzyme that hydrolyzes virtually all classes of b-lactams, except monobactam, while L2 is a serine active-site cephalosporinase. Aminoglycoside and quinolone resistance is the result of mutations in the outer membrane proteins. Very few drugs show an acceptable potency or spectrum against *S. maltophilia*.

SXT is the drug of choice and continues to be active.

Susceptibility testing of *S. maltophilia* is particularly difficult, and not completely standardized. The correlations between in vitro susceptibility tests show variations. A study in 2005 showed that disk diffusion and E-test were unreliable alternative methods for *S. maltophilia*, except SXT. The BSAC (version 5, 2006) recommended disk diffusion breakpoint for SXT only, while the CLSI (2006) recommended dilution testing for SXT, ceftazidime, chloramphenicol, levofloxacin, minocycline, and ticarcillin-clavulanate, and disk diffusion for only SXT, levofloxacin, and minocycline.

In conclusion, *S. maltophilia* is an important nosocomial pathogen causing significant morbidity and mortality. Antimicrobial surveillance programs remain important to guide empirical antimicrobial therapy for pathogens with lack of susceptibility testing standardization.

References

1. Jones RN, Sader HS, Beach ML: Contemporary in vitro spectrum of activity summary for antimicrobial agents tested against 18569 strains non-fermentative gram-negative bacilli isolated in the SENTRY Antimicrobial Surveillance Program (1997-2001). *Int J Antimicrob Agents* 2003;22:551-6
2. Tatman-Otkun M, Gurcan S, Ozer B, Aydoslu, Bukavaz S: The antimicrobial susceptibility of *Stenotrophomonas maltophilia* isolates using three different methods and their genetic relatedness. *BMC Microbiol* 2005;5:24
3. Andrews JM: BSAC standardized disc susceptibility testing method (version 5). *J Antimicrob Chemother* 2006;58:511-29