Kentucky Antimicrobial Stewardship Innovation Consortium

Educational Pearl

Don't Let the Bug Beat You: *Stenotrophomonas maltophilia*

Stenotrophomonas maltophilia is a non-fermenting gram-negative rod that is commonly found within the environment.[1] It is also frequently isolated within the healthcare setting, including in intravenous fluids, dialysis machines, respiratory equipment, water faucets, and the hands of healthcare workers.[1] While not considered to be as virulent as other nosocomial pathogens[2], it does present challenges such as the ability to form a biofilm and intrinsic resistance against multiple antimicrobial agents.[1] This allows the organism to colonize or infect vulnerable patient populations. How do we beat the *S. maltophilia* bug?

Who gets *S. maltophilia?*

While *S. maltophilia* is a common respiratory colonizer, it has the potential to cause infections within certain patient populations. Risk factors for *S. maltophilia* infection include immunocompromised status, chronic respiratory diseases, hemodialysis, hospitalization, and use of broad-spectrum antibiotics.[1] Even with these risk factors, *S. maltophilia* is still often a colonizer.

***S. maltophilia* colonization versus infection**

It can be difficult to determine when *S. maltophilia* is the cause of patients' symptoms versus when it is a non-invasive colonizer.[1] In one retrospective study, 40 tracheostomy-dependent pediatric patients with 55 unique encounters were evaluated to determine if treating *S. maltophilia* improved time to baseline respiratory status. No difference was found between those who received antibiotics active against *S. maltophilia* compared to those who did not.[3] In another retrospective study of patients with *S. maltophilia* from respiratory cultures, 1604/1773 (90%) did NOT meet a clinical definition of pneumonia suggesting a high rate of colonization. Of the patients meeting clinical criteria for pneumonia, 92% had a secondary pathogen isolated alongside *S. maltophilia* and improved without active therapy against *S. maltophilia*.[4]

Key Takeaway: *S. maltophilia* is a common colonizer and does not always necessitate treatment when isolated in respiratory cultures. Decision to treat should be patient-specific and take into consideration their risk factors and alternative causes of symptoms.

References:

1. Said MS, Tirthani E, Lesho E. Stenotrophomonas Maltophilia. [Updated 2023 Jun 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK572123/
2. Tamma PD, Aitken SL, Bonomo RA, Mathers AJ, van Duin D, Clancy CJ. Infectious Diseases Society of America 2023 Guidance on the Treatment of Antimicrobial Resistant Gram-Negative Infections. *Clin Infect Dis*. Published online July 18, 2023. doi:10.1093/cid/ciad428
3. Tillman EM, Firmani SE, Ackerman VL, Slaven JE, Cristea AI. Evaluation of the Treatment of Stenotrophomonas maltophilia in Tracheostomy-Dependent Pediatric Patients. *J Pediatr Pharmacol Ther*. 2019;24(6):510-516. doi:10.5863/1551-6776-24.6.510
4. Imoto W, Yamada K, Kuwabara G, et al. In which cases of pneumonia should we consider treatments for Stenotrophomonas maltophilia?. *J Hosp Infect*. 2021;111:169-175. doi:10.1016/j.jhin.2021.01.011

Created 7.3.24