

Please read this bit first

The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a "Journal Club" activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out "correct" answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT00025**.

Each attendee should claim **THREE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

Cycle 20 Organism 6:

Stenotrophomonas maltophilia

Microbiology, taxonomy and identification

S. maltophilia, formerly named *Pseudomonas* and then *Xanthomonas maltophilia* is the only species of the genus. *S. maltophilia* are motile, free-living, glucose-nonfermentative, Gram-negative aerobic bacilli with multitriflagellar polar flagella. *S. maltophilia* grows readily on most bacteriologic media, typically appearing pale yellow, grayish, lavender green on blood agar. Preliminary identification may be facilitated by its ammonia-like odour. Most clinical isolates are oxidase negative, oxidation of glucose and maltose¹.

Virulence factors and pathogenesis

S. maltophilia uncommonly causes community acquired pneumonia (CAP) in previously normal patients. Their resistance to a number of antimicrobial agents selects them in the hospital environment. *S. maltophilia* is a nosocomial pathogen that occurs in the same types of hospitalized patients as *Burkholderia cepacia*. In the majority of clinical situations, isolation of *S. maltophilia* may represent colonization or contamination rather than true infection².

Clinical manifestations

The most frequent clinical manifestation of *S. maltophilia* infection is pneumonia². True *S. maltophilia* pneumonia is more likely to occur among intensive care or cancer patients and is associated with extensive use of broad-spectrum antibiotics, advanced age, and mechanical

ventilation³. Nosocomial pneumonia caused by *S. maltophilia* is associated with a high mortality, particularly when associated with bacteraemia or obstruction.

The second most frequent clinical manifestation of *S. maltophilia* infection is central venous catheter-related bacteraemia². A substantial proportion of these infections are polymicrobial³.

Single cases of other clinical manifestations of *S. maltophilia* infection, such as endocarditis both on native and prosthetic valves, endophthalmitis, sinusitis, cellulitis and myositis, have been described³. *S. maltophilia* isolated from the urinary tract often represent colonization in the presence of a Foley catheter rather than true infection².

Treatment

The Clinical and Laboratory Standards Institute (CLSI) recommend that only trimethoprim-sulfamethoxazole, levofloxacin and minocycline be tested against isolate of *S. maltophilia*. Other antibiotics may appear sensitive in vitro but are not clinically effective.

References

1. Gilligan PH, Lum G, Vandamme PAR, and Whittier S. *Stenotrophomonas*. In Murray PR, ed. Manual of Clinical Microbiology. Washington, DC: ASM Press; 2003: 729-748.
2. Denton M, Kerr KG. Microbiological and clinical aspects of infection associated with *Stenotrophomonas maltophilia*. Clin Microbiol Rev. 1998;**11**:57-80.
3. Gopalakrishnan R, et al. *Stenotrophomonas maltophilia* infection and colonization of the intensive care units of two community hospitals: A study of 143 patients. Heart Lung. 1999;**28**:134-141.

Questions

1. How would you differentiate between *Stenotrophomonas maltophilia* and *Burkholderia cepacia*?
2. How would you isolate *Stenotrophomonas maltophilia*?
3. What characteristics are used to identify *Stenotrophomonas maltophilia*?
4. What infections are caused by *Stenotrophomonas maltophilia*?