

Case series of *Stenotrophomonas Maltophilia* as a rare cause of PD Peritonitis

Dr Lauren Floyd¹, Dr Arvind Ponnusamy¹

¹Royal Preston Hospital, Preston, United Kingdom

Introduction

Peritoneal Dialysis (PD) peritonitis is a common and serious cause of PD related complications. Common organisms include *Staphylococcus aureus*, Enterococci and Coagulase Negative Staphylococci, however *Stenotrophomonas maltophilia* (*S. maltophilia*) is a very rare cause. It is a nosocomial gram negative bacillus that often occurs in immunosuppressed patients (1). The organism is considered opportunistic and is resistant to many antibiotics classes including beta-lactams and aminoglycosides, making it difficult to treat (2). The duration of treatment is usually over 6 weeks and complications can include concurrent fungal infections, PD catheter removal, conversion to haemodialysis and mortality.

Case Studies

We identified 3 cases of *S. maltophilia* over a 7 week period. The patients had a median age of 49 years. The patients presented with similar features of abdominal pain, cloudy PD fluid and pyrexia.

1 of the cases grew *S. maltophilia* from an exit site swab and the other 2 patients had positive PD fluid cultures, with WCC values of between 99 x 10⁶/L to 4000 x 10⁶/L. The organisms grown were all identified as *Stenotrophomonas maltophilia*.

All patients were on Continuous ambulatory peritoneal dialysis (CAPD) and had been for several years prior to this presentation. They shared common co-morbidities including diabetes mellitus and hypertension. One patient had an autoimmune condition and was on immunosuppression with Rituximab and prednisolone but the other 2 patients were not on any immunosuppressive medications.

The outcome of these infections were severe in all 3 cases. All patients required their infected Tenckhoff catheters to be removed. One patient had a tube reinserted 10 days later but went on to deteriorate and eventually pass away from underlying intraabdominal sepsis. The other two patients had the tubes removed and switched modalities to haemodialysis.

The organisms were fully sensitive to trimethoprim/ sulfamethoxazole and the average treatment course was 30.3 days. Two patients required additional antibiotic therapy including teicoplanin and gentamicin.

Two out of three patients required hospital admission and the average hospital stay was 24 days.

A root cause analysis was held as to why these patients presented with such a rare organism in a short space of time. Multidisciplinary meetings were held with microbiologists, PD home therapies teams, nurses and doctors.

Conclusion

In conclusion *S. maltophilia* is a severe infection that, whilst rare, has catastrophic consequences including a high burden of morbidity, mortality, hospitalisation as well as loss of the PD catheters (1). Risk factors from our cohort and other case reports include immunosuppression, diabetes mellitus and exposure to broad spectrum antibiotics.

Treatment is often challenging and requires expert microbiology input. Extended courses of antibiotics (typically Co-trimoxazole) are required due to recurrence of the organisms and often the Tenckhoff catheters require removal and or replacement, as was the case in our 3 patients (2).

When rare cases occur in short succession it is often more than coincidence and root cause analysis and investigations into the potential links are paramount to prevent further cases.