

Continuous ambulatory peritoneal dialysis (CAPD) associated peritonitis in a young female: A case of peritonitis caused by *Acinetobacter*

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Abstract

CAPD was very first invented in 1976 and gaining popularity over years because of convenience of home administration and even similar or superior survival in first 2 to 3 years. In the patient with CAPD, infection specially peritonitis including catheter related and tunnel infection are the most common complication.^{1,2} The most common organism involved are gram positive bacteria.³ *Acinetobacter*, a broad group of pathogen consist of strictly aerobic, pleomorphic gram negative coccobacillary rods usually colonize in the aquatic environments and usually isolated from urine, tracheal secretions and CSF. Here we are going to present a case of CAPD associated peritonitis caused by *Acinetobacter*.

Keywords: Continuous ambulatory peritoneal dialysis, Peritonitis, *Acinetobacter* infection.

Case Report

This is a patient, 32 year old female, a case of ESRD, secondary to postpartum sepsis with AKI. The patient was earlier on haemodialysis, now has been on CAPD for last 3 months, admitted to the hospital on 16-11-2017 with complaint of fever, very low urine output, progressively increasing pain abdomen for 15 days and cloudy peritoneal effluent for 4 days.

On examination, the patient was very ill looking. Vitals were normal. Abdomen was tense, distended and very tender with apparently non palpable liver and spleen. Umbilicus was midline and CAPD catheter was in place with serous discharge at entry site.

Prima facie the patient was diagnosed as peritonitis and started on systemic antibiotic piperacillin and intraperitoneal vancomycin alongwith supportive care. Initial lab investigation showed hb 7.8, TLC 19200 (P82 L12, M1), platelet count 1.21 lacs, blood urea 156 and s. creat 12.3 with sever hypoalbuminemia.

Multiple samples of peritoneal fluid were sent for examination according to ISPD guidelines. Of which the second sample showed 3000 pus cells/ hpf with more than 60 PMN. On incubation, culture report suggestive of gram negative rod and the organism identified as *Acinetobacter*.

As the patient was not improving, on the D4 after admission, guidewire associated CAPD catheter replacement was done under proper aseptic environment and patient started on low dwell volume and frequent peritoneal dialysis. Further according to the antibiogram and sensitivity report which showed that the organism was resistant to most of the antibiotics except imipenem, the treatment regimen shifted to intraperitoneal imipenem and systemic collistin therapy adjusted to renal modified dose. Other bacterial cultures for blood and urine suggestive of no growth.

Hospital Course

On the basis of presentation and investigation reports, patient was diagnosed as CAPD associated peritonitis associated with *Acinetobacter* infection. Patient immediately started on treatment including change of CAPD catheter in view of catheter blockage and infectious organism alongwith proper antibiotics according to culture and sensitivity reports. Patient showed improvement clinically with clear peritoneal effluent from the D4 of starting antibiotics. The antibiotics course was completed for 21 days.

Discussion

CAPD, most often complicated with CAPD associated peritonitis and one of the cause for CAPD discontinuation or shift to HD.⁴ According to some previous database most of the peritonitis caused by overwhelming bacteria, including mostly gram positive organisms (approximately 73%) and gram negative bacteria (responsible for 24 % case).

Acinetobacter is an unusual pathogen, responsible for CAPD associated peritonitis. Zhang et al. retrospectively analyzed 26 episodes of PD-related Acinetobacter species peritonitis.⁵ Infection with acinetobacter most commonly seen in patient with immunocompromised status mostly diabetes mellitus and chronic alcoholics and has a high recurrence rate.⁶ The most common presentation of such patients are diffuse abdominal pain, fever and cloudy peritoneal effluent.

Various regimen of antibiotics available for treatment of CAPD associated peritonitis including intraperitoneal aminoglycoside, cephalosporins, penicillins, vancomycin and meropenem along with systemic antibiotics coverage but no consistent regimen regarding monotherapy or combination therapy is still available. In reviewing literature, Acinetobacter peritonitis is usually treated with early and appropriate antibiotic therapy as it is thought to be highly susceptible to antibiotics.⁷ This patient was also started on piperacillin and vancomycin but did not respond initially and then switched over to another group of antibiotics, continued for full term course until culture negative.

Conclusion

CAPD, most often complicated with CAPD associated peritonitis of which most common organism is gram positive bacteria and a less frequent gram negative organism out of which, infection with Acinetobacter is

very rare and if present, it needs urgent management with proper and complete course of antibiotics with or without change of CAPD catheter.

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Conflict of Interest

None.

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