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### **Peritonitis in Chronic Peritoneal Dialysis Patients: Clinical Profile, Microbiologic Spectrum and Outcomes**

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**Objectives :** To study the clinical profile, risk factors, microbiological spectrum and outcomes of peritonitis in patients on chronic peritoneal dialysis

**Methods :** •Retrospective, single center, observational study conducted at Christian Medical College Vellore, India •Patients initiated on chronic PD between 1st January 2013 to 31st December 2017 were followed till August 2023 •Data regarding baseline characteristics, microbiologic profile and outcomes of peritonitis were obtained through review of medical records •Patients < 18 years of age or on immunosuppressants were excluded •Peritonitis and peritonitis related outcomes - defined as per ISPD guidelines •Empiric intra-peritoneal antibiotics (vancomycin/cephazolin and ceftazidime) and oral antifungal - started after diagnosis •Antibiotics - revised based on culture and sensitivity reports •Clinical deterioration mandated shift to IV Antibiotics

**Results :** •During the study period, a total of 250 patients were initiated on PD •Total 575.756 patient- years were followed up and the mean duration of PD was  $27.99 \pm 26.42$  months •125 PD-related peritonitis episodes were identified in 70 patients, (range : 1-8 episodes per patient) •Mean time to first episode of peritonitis was  $15.29 \pm 13.7$  months Coagulase-negative staphylococci (CONS) emerged as the most common Gram-positive pathogen, whereas Gram-negative infections were associated with poorer clinical outcomes. Of the peritonitis episodes, 68% resolved completely with medical management. Gram-negative infections demonstrated higher rates of hospitalization, catheter loss, and worse outcomes compared to Gram-positive infections. Peritonitis-associated mortality was observed in 8 cases (6.4%), reflecting a low overall mortality rate. Catheter removal and transfer to hemodialysis were common complications, particularly in patients with Gram-negative or fungal infections. Resistance patterns varied, necessitating empiric therapy adjustments based on culture and sensitivity results.

**Conclusions :** The study highlights an improved peritonitis rate of 0.217 episodes per patient-year, aligning with ISPD recommendations. Despite advancements, culture-negative peritonitis remained prevalent (29.6%), and Gram-negative infections posed significant challenges due to their association with severe outcomes