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Clinical Outcomes Of Culture-Negative And Culture-Positive Peritonitis Among Patients On Peritoneal Dialysis In Tertiary Hospital In East Coast Malaysia: A Retrospective Study

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Objectives : Peritoneal dialysis-associated peritonitis(PDAP) remains a major hurdle for peritoneal dialysis(PD) technique survival. Culture-negative peritonitis poses a challenge due to uncertain optimal treatment and prognosis. Hence the objective of this study was to look into culture-negative and culture-positive PDAP in our centre.
Methods : This is a retrospective cohort study including all episodes of PDAP in Hospital Raja Perempuan Zainab II, Kota Bharu from January 2021 to June 2023. Patients' demographic and clinical data were reviewed and outcomes were followed up for at least 6 months.
Results : A total of 122 episodes of PDAP occurred in 92 PD patients. Culture-negative peritonitis accounted for 23% of the total episodes. Baseline characteristics were similar in the culture-negative and culture-positive patients with mean age 46.0 ± 13.2 vs 50.2 ± 16.1, about half were female (56% vs 51.3%) and diabetic (48% vs 57%), mean dialysis vintage (26.1 vs 21.9 months), assisted PD (21.4% vs 28.9%). 53.6% of the culture-negative group had unknown primary disease in contrast to culture-positive groups with predominantly diabetic nephropathy (40.8%). The culture-negative group had no recent antimicrobial usage within 30 days (0% vs 13.8%) and a lower incidence of exit-site/tunnel infection 3 months prior (3.6% vs 10.6%). The majority of culture-negative PDAP completed 14 days of intraperitoneal cloxacillin and ceftazidime whereas antibiotics were adjusted in the culture-positive group based on the sensitivity report. Compared with culture-positive patients, culture-negative patients fared better with significantly higher medical cure (78.6% vs 53.2%; P=0.017), lower catheter removal (10.7% vs 31.9%, P=0.027), permanent transfer to hemodialysis (10.7% vs 26.6%; P=0.079) and hospitalization (28.6% vs 51.1%; P=0.036). There was no difference in mortality rate between the two groups (0% vs 1.1%).
Conclusions : Although we reported higher culture-negative PDAP rate than the recommended 15%, it had an excellent treatment response to antibiotics alone similar to the reported large case series.