Catheter-related infections and microbiological characteristics in coiled versus straight peritoneal dialysis catheters in Malaysia

ABSTRACT

Background: Catheter-related infections remain a threat in peritoneal dialysis (PD) patients. Attempts to improve catheter insertion techniques and catheter type with best infectious outcomes yield heterogenous results. We seek to determine catheter-related infections in two different types of catheters and its microbiological spectrum. Methods: Retrospective crosssectional study conducted in Hospital Serdang, Malaysia. We included end-stage renal disease (ESRD) patients who opted for PD and examined catheter-related infections (peritonitis, exit site infection, and tunnel tract infection) and organisms causing these infections. Results: We included 126 patients in this study; 75 patients received the coiled PD catheter (59.5%) and 51 patients received the straight PD catheter (40.5%). The majority of patients were young, under the age of 65 years old (77.3% and 72.5%) in the coiled and straight PD catheter group, respectively, and the main cause of ESRD was diabetes mellitus in both groups (78.7% vs. 92.2%). The demographic and anthropometric data were similar between both groups. Peritonitis rate (0.29 episodes/patient-years vs. 0.31 episodes/patient-years, P value = 0.909), exit site infection rate (0.31 episodes/patient-year vs. 0.37 episodes/patient-year, P value = 0.730), and tunnel tract infection rate (0.02 episodes/patient-year, P value = 0.430) were similar in the coiled versus straight PD catheter groups. The predominant organism causing peritonitis was the gramnegative organism; Escherichia coli and Klebsiella pneumoniae. In exit site and tunnel tract infections, there is a predominance of gram-negative organisms; Pseudomonas aeruginosa and K. pneumoniae. Conclusions: There was no difference in infectious outcomes between the two different types of catheters. Type of organism in both groups was gram-negative.

Keyword: Exit site infection; Microbiological spectrum; Peritoneal dialysis; Peritonitis; Tunnel tract infection