

ABSTRACT

Introduction

Peritonitis is one of the most frequent and serious complications associated with chronic ambulatory peritoneal dialysis (CAPD). Understanding the incidence of peritonitis among CAPD patients in a specific healthcare setting is essential since it provides a baseline measure of the burden of the disease, which can help identify gaps in clinical practice and infection control.

Objectives

To describe the proportion of peritonitis, associated factors, aetiological agents, and their antibiotic susceptibility pattern in patients who develop peritonitis associated with chronic ambulatory peritoneal dialysis (CAPD) patients in the CAPD unit, National Hospital, Kandy

Methods

Descriptive cross-sectional study was conducted among 167 patients with end stage renal failure registered at the CAPD unit, National Hospital, Kandy. Patients below 18 years and undergoing peritoneal dialysis for fewer than 30 days were excluded from the study. Interviewer administered questionnaire and structured data extraction sheet were used for data collection. CAPD fluid sampling storage and culture procedure were conducted according to guidelines published in Laboratory manual in Microbiology, Sri Lanka. Organisms were identified using Gram stain and biochemical tests. Phenotypic identification of all the Gram-negative culture isolates was done using the VITEK 2 automated identification system. ABST was performed and interpreted according to CLSI M100 34th edition. Data analysis was facilitated by SPSS version 28.0. Project was ethically cleared by Ethics Review Committee, Post Graduate research centre, National Hospital Kandy.

Result

The study included 167 CAPD patients. Of these, 58 patients had peritonitis events detected. Of these 58 patients, 86 peritonitis episodes were reported during the study

period. The study was conducted over a 7-month period and peritonitis events were calculated in patient years. Incidence of peritonitis per patient year of observation was 0.883 (95% confidence interval :70.58-108.98) Distribution of peritonitis among patients was 51.49% (95% CI=31.2-50.7) during the study period.

The analysis of associated factors for peritonitis shows no statistically significant relationships for the variables studied. Diabetes mellitus (OR: 1.678) shows a trend toward higher risk. Mean serum Bicarbonate concentration was significantly differed from group of patients infected with peritonitis compared to patients who do not ($t=2.43$; $p=0.01$). The distribution of microorganisms in culture-positive peritonitis shows a predominance of Gram-positive cocci, with Coagulase negative Staphylococci (22.1%, $n = 19$). The predominant Gram-negative organisms in our study were *Escherichia coli* and *Pseudomonas aeruginosa*. (7.0%. $n=6$, 7.0%. $n=6$)

Conclusions

Incidence of peritonitis per patient year of observation was 0.883 (95% confidence interval :70.58-108.98). No significant factors associated with peritonitis were identified. Mean serum Bicarbonate concentration was significantly differed from group of patients infected with peritonitis compared to patients who do not. Coagulase negative Staphylococci are the predominate microorganism among the patients.

Key word: Peritonitis, CAPD, Antibiotics, Microorganisms