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Risk factors, microbiology, and outcomes of capdrelated peritonitis at Helen Joseph hospital, South Africa

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ABSTRACT

Background:

In the resource-constrained public health care sector of South Africa, with limited availability for haemodialysis (HD) and long wait-list periods for renal transplantation, the longevity of the peritoneal dialysis (PD) modality is vital. We aimed to investigate the spectrum of causative organisms and associated sensitivity patterns of continuous ambulatory peritoneal dialysis (CAPD) related peritonitis cases. This study will further explore associated risk factors and outcomes among this patient population.

Methods:

This is a retrospective, open cohort study conducted at the Division of Nephrology, Helen Joseph Hospital, Johannesburg, South Africa for the period January 2013 – December 2018. During this period, 145 episodes of peritonitis were document in 149 patients.

Results:

The overall rate of peritonitis was 1 episode of peritonitis per 24.35 patient months. Of all peritonitis episodes, 43.45% (n=63) were due to gram-positive organisms, 30.34% (n=44) due to gram-negative organisms, and 21.38% (n=31) of episodes were culture- negative. Mycobacterium tuberculosis (2.07%, n=3) and fungal peritonitis (2.76%, n=4) were rare. The majority (55.55%, n=35) of gram-positive peritonitis episodes were methicillin-resistant. Extended-spectrum b-lactamase producing organisms caused 12.5% (n=2) of index and 15.90% (n=7) of all gram-negative peritonitis cases. All-cause modality failure was experienced in 28.10% (n=34) of study patients; the majority (76.47%, n=26) were peritonitis related. The risk of modality failure was higher among peritonitis patients (HR 2.79 95% CI 1.22 – 6.38, p =0.014), and modality survival was poorer in this group in comparison to those that were peritonitis-free (p = 0.0002). The time to the first episode of peritonitis showed a correlation with the duration of modality survival (p=0.000001). A 30.08% (n=37) all-cause mortality was documented on study completion.

Conclusion:

These findings have refined in-unit empiric antimicrobial protocols for the management of CAPD-associated peritonitis with the purpose of improving modality and patient survival. It has also provided insight into the risk factors and outcomes relative to this