MICROBIAL AETIOLOGIES OF DEVICE ASSOCIATED INFECTIONS (DAIs) AND THEIR ANTIMICROBIAL SUSCEPTIBILITY PROFILES IN CRITICAL CARE UNITS (CCUs) AT PARIRENYATWA GROUP OF HOSPITALS (PGH) AND WEST END HOSPITAL (WEH) IN HARARE, ZIMBABWE.

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Overall **DAIs rate** was **11.0 per 1000 device days** .The total number of participants who **developed DAIs** was **65 (60.7%) out of 107 participants**.

BACKGROUND

Device associated infections (DAIs) are a major problem, accounting for up to 40% of all hospital acquired infections (HAIs). These infections increases morbidity and mortality rates among patients admitted in critical care units (CCUs). The aim of this study was to determine microbial etiologies of DAIs and their antimicrobial susceptibility patterns in CCUs at PGH and WEH in Harare, Zimbabwe.

METHODS

We carried out a prospective descriptive cross-sectional study to determine microbial aetiologies of DAIs and their antimicrobial susceptibility profiles in CCUs patients obtained from 7 July 2019 to 30 November 2020. TDR-300B machine was used for the identification and susceptibility testing of isolated isolates. Breakpoints from the Clinical laboratory standards institute (CLSI) were used to interpret antimicrobial susceptibility results.

RESULTS

Overall DAIs rate was 11.0 per 1000 device days. Microbial aetiologies isolated were *Klebsiella pneumoniae* (23%), *Coagulase Negative Staphylococcus species (CoNS*) (18%), *Escherichia coli* (11%), *Candida albicans* (9%) and *Staphylococcus aureus* (8%). Carbapenems, aminoglycosides, vancomycin and fosfomycin were effective against isolated organisms. Third and fourth generation cephalosporins and fluoroquinolones (ciprofloxacin) had moderate action. Modes of antimicrobial resistance established were *Extended-spectrum beta-Lactamase* (ESBL) and methicillin resistance.

CONCLUSIONS

DAIs rate was generally high and many microbial isolates showed multi-drug resistance capabilities. Generated current information on microbial aetiologies and current antimicrobial susceptibility patterns of DAIs, has the potential to develop updated antibiograms that will strengthen patient care and improve antibiotic stewardship in CCUs.

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