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Retrospective analysis of spectrum of infections and antibiotic resistance pattern in chronic kidney disease patients on maintenance hemodialysis in a tertiary care centre in north India

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Objectives: Hemodialysis patients are at risk of infections due to various factors. Antibiotic resistance is an ever-changing issue. Initial empirical therapy depends on local epidemiology of infection, and antibiotic resistance pattern. Non-access related infections received lesser research attention worldwide. This study examines the spectrum of infections, and antibiotic resistance pattern.

Methods: : We retrospectively reviewed the records of 586 hemodialysis patients from May 2018 to April 2020 in a tertiary care hospital in North India.

Results: The study identified 99 episodes of confirmed infections. Urinary tract infections were the most common type of infections (55.5%), followed by Catheter-related blood stream infections (CRBSI) (definitive 21.2%). Other infections were pneumonia (8.1%), tuberculosis (6.1%), skin and soft tissue infection (4.0%), dengue fever in (3.03%) and empyema thoracis (1.0%). Overall, Escherichia coli (33.3%) was the most common organism isolated. The most frequent uropathogens recovered were *Escherichia coli* (54%). In confirmed CRBSI, *P. aeruginosa* (23.8%) and MSSA (23.8%) were the most common pathogen isolated. *K. pneumonia* (37.5%) was the most common pathogen in pneumonia. Uropathogens showed highest resistance to fluoroquinolones (93.3-100%). Pathogens isolated in CRBSI shown maximum resistance to ciprofloxacin (100%). In pneumonia, highest resistance was seen to third generation cephalosporins (75-100%).

Conclusions: Though bacterial spectrum remains the same over time, antibiotic resistance is changing in uropathogens. There is a trend of predominance of gram-negative bacterial infections in CRBSI. Tuberculosis incidence rate was much higher than the general population. There is a need for nationwide and worldwide continuous surveillance.

Figure 1.Overall antibiotic resistance pattern in urinary tract infection.