

Antibiotics Sensitivity Profile of proteus species Associated With Specific Infections at University of Ilorin Teaching Hospital, Ilorin.

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Abstract

Proteus is a prominent member of the family Enterobacteriaceae responsible for a variety of infections in human, such infections include urinary tract infection and many other opportunistic infections in human. The threat of antimicrobial resistance among important isolates is of great concern. This study was conducted to determine the prevalence and antibiotic sensitivity pattern of *Proteus spp* associated with its specific infections at the University of Ilorin Teaching Hospital Ilorin. A retrospective review of cultures results of urine, wound swabs, ear and throat swabs were analysed. A total of 1,500 clinical samples were examined for identification of bacteria and their antimicrobial susceptibility. The greatest number of *Proteus spp* isolates were from wound swabs, 57.1%, followed by mid-stream urine 20.4%. Males were found to be more vulnerable than females in acquiring *Proteus* infections, 53.1% and 46.9% respectively. Results of the antimicrobial sensitivity testing showed that Imipenem and Piperacillin antibiotics were the most effective against *Proteus spp* with each having 100%, followed by Cefazidime 79.2%, and Ofloxacin 76.5%. The least effective antibiotic against *Proteus* was Augmentin 58.1% sensitivity. It is therefore recommended that Imipenem and Piperacillin should be used in the treatment of *Proteus* infections, and where both are not affordable, Cefazidime and Ofloxacin could be used in the study area for the treatment of infections caused by *Proteus*. Regular monitoring of antimicrobial susceptibility is recommended.

Key words: *Proteus*, infection, antibiotics, Sensitivity pattern

Introduction

Proteus is a member of the family Enterobacteriaceae, and the genus *Proteus* consists of motile, aerobic and facultative anaerobic Gram-negative rods.¹ *Proteus* is a member of the tribe proteae, which also include Morganella and Providencia. A striking microbiological characteristic of *Proteus* species is their swarming activity. Members of the genus *Proteus* are wide spread in the environment and are found in human gastro intestinal tract.² The most common infections caused by *Proteus* species are urinary tract infections (UTIs),³ and in addition *Proteus spp* are the causative agents of a variety of opportunistic nosocomial infections including those of the respiratory tract, ear, nose, skin, burns and wounds. It may also cause gastroenteritis.⁴ *Proteus spp* can be found to colonize the vaginal introitus prior to onset of bacteriuria, therefore like *E.coli*, *Proteus spp* cause urinary tract infections by ascending from the rectum to the peri urethra and the bladder.⁵

Proteus mirabilis is by far the most common species identified in clinical specimens.⁶ *Proteus spp*, possess several virulence factors that explain their uropathogenic potential. They have Pili or fimbriae for adherence to the uroepithelium. *Proteus spp* can be naturally resistant to antibiotics, there have been numerous reports of production of extended spectrum beta lactamases (ESBLs) by *Proteus spp*. The ESBL can confer resistance to the third generation cephalosporins. A Study done in Benin shows that *Proteus mirabilis* was resistant to Cloxacillin, Erythromycin and Cephalexin but highly sensitive to Peflacin, Ciprofloxacin, Cephalexin and Cefotaxime.⁷ Aisha et al in a study done in Kano, reported *Proteus* to be resistant to Cefazidime, Gentamicin and Ciprofloxacin. The threat of antimicrobial resistance among important clinical isolates is of growing concern. This study therefore reports the antibiotics sensitivity pattern of *Proteus spp* associated with specific infections at the University of Ilorin Teaching Hospital, Ilorin.

Materials And Method

This research was a retrospective study carried out between January 2015 and June 2015 and was exempted from ethical approval. Different clinical samples such as urine, purulent materials from wound or abscesses, ear swabs and sputum were cultured to isolate the organisms. A total of 1500 clinical samples were obtained during the study period. Demographic

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