

**PATTERN OF BACTERIAL ISOLATES AND ANTIBIOGRAM FROM
OPEN WOUND INFECTION AMONG THE INDOOR PATIENTS OF
BIR HOSPITAL**

A

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(Medical)**

By

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ABSTRACT

The present study was conducted for a period of 9 months with an aim to identify the etiological agents causing wound infection along with their antibiotic susceptibility pattern among inpatients in Bir Hospital. In this study a total of 305 pus samples which consisted 251 (82.29%) pus swabs and 54 (17.70%) pus aspiration from the infected wounds were collected and analyzed. The etiological agents were isolated, identified by culture and biochemical tests and their susceptibility pattern to commonly used antibiotics were determined using standard protocols. The male patients were high in number (n=185) than females (n=120) and majority of patients belonged to age group 21-30 (n=76). Out of total 305 pus samples, 197 (64.45%) samples showed growth; of which 135 (68.52%) samples showed single isolates and 62 (31.47%) showed multiple isolates. The growth was found to be highest in burn ward (90.90%) followed by post operative ward (80%) and lowest was in plastic surgery ward (33.33%). A total of 253 bacterial isolates were found which belonged to 15 different species; of which 155 (61.2%) were Gram negative and 98 (38.8%) were Gram positive bacteria. Among Gram positive bacteria, *S. aureus* (83.67%) was most common followed by CONS (7.14%), non haemolytic streptococci (4.08%), unidentified Gram positive rods (3.06%) and haemolytic streptococci (2.04%). Among Gram negative bacteria, *E. coli* (38.7%) was most common followed by *P. aeruginosa* (25.16%), *Acinetobacter* spp. (10.96%), *K. oxytoca* (7.74%), *P. mirabilis* (5.16%), *K. pneumoniae* (4.51%), *P. vulgaris* (2.58%), *Enterobacter* spp. (2.58%), *C. freundii* (1.93%) and *Providencia* spp. (0.64%). Direct smear Gram staining and culture were found to be correlated ($r_{xy} = 0.99$). Among the antibiotics used, the most effective antibiotic for overall bacterial isolates was found to be Ciprofloxacin with a sensitivity of 67.58%. For Gram positive isolates, the most sensitive antibiotic was Ofloxacin (70.40%) while among the Gram negative isolates, Ciprofloxacin (69.03%) was the most sensitive antibiotic. Hence, etiological agents of wound infection along with their antibiotic susceptibility pattern were determined.

Key words: wound infection, indoor patients, bacterial isolates, antibiogram

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LIST OF ABBREVIATIONS

| | |
|-------|----------------------------------------------------|
| AIDS | Acquired Immuno Deficiency Syndrome |
| BA | Blood Agar |
| CDC | Centre for Disease Control |
| CONS | Coagulase Negative Staphylococcus |
| DNA | Deoxyribonucleic Acid |
| ENT | Ear Nose Throat |
| FSW | Female Surgical Ward |
| GNB | Gram Negative Bacilli |
| GPC | Gram Positive Cocci |
| HAI | Hospital Acquired Infection |
| ICU | Intensive Care Unit |
| MA | Mac Conkey Agar |
| mcg | Micro-gram |
| MHA | Muller Hinton Agar |
| MRSA | Methicillin Resistant <i>Staphylococcus aureus</i> |
| MSW | Male Surgical Ward |
| NA | Nutrient Agar |
| NB | Nutrient Broth |
| NINSS | Nosocomial Infection National Surveillance Service |
| NNIS | National Nosocomial Infection Surveillance |
| NSW | Neurosurgical Ward |
| PMN | Polymorphonucleocytes |
| POW | Post Operative Ward |
| RCMB | Robertson's Cooked Meat Broth |
| SIRS | Systemic Inflammatory Response |
| SSI | Surgical Site Infection |
| TUTH | Tribhuvan University Teaching Hospital |
| WHO | World Health Organisation |

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