

**TIME RELATED CHANGES IN BACTERIOLOGICAL PROFILE
OF BURN WOUND AND THEIR ANTIBIOGRAM**

A

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Master of Science in Microbiology
(Medical)**

By

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This is to certify that **Mr. Santosh Rajbahak** has completed this dissertation work entitled “**TIME RELATED CHANGES IN BACTERIOLOGICAL PROFILE OF BURN WOUND INFECTIONS AND THEIR ANTIBIOGRAM**” as a partial fulfillment of the requirements of M.Sc. Degree in Microbiology (Medical) under our supervision. To our knowledge, this work has not been submitted to any other degree.

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ABSTRACT

A prospective study of the burn cases were carried out in 42 burn patients admitted in burn unit of Bir Hospital from September 2011 to February 2012 to evaluate time-related changes in aerobic bacterial colonization and their sensitivity pattern. Periodic swabs were taken from the burn wound on 1st, 2nd, 3rd, and 4th weeks to see the changing pattern of organisms during hospital stay of patients. The antibiotic susceptibility tests of identified bacteria were done by Kirby-Bauer disk diffusion techniques. In the present study burn injury was found to be highest in the age group 25-34 years (28.6%). Male to female ratio was 1:1.5. Fire was the major cause of burn (78.6%) followed by scald burn (7.1%). Among the 168 samples, single organism was isolated in 47.6% samples and mixed organisms in 39.9% and no growth in 12.5%. A total of 215 bacterial isolates were isolated from 168 samples in which *Pseudomonas aeruginosa* accounts for the highest percentage 45.6% followed by *Staphylococcus aureus* (19.1%), *Acinetobacter* spp. (17.7%) and CONS (5.6%). On 1st week of culture 38.6% of the isolates were *P. aeruginosa* followed by *Acinetobacter* spp. (21%) and *S. aureus* (19.2%). No growth was found in 14.3% samples. These findings were gradually changing with time and on 4th week *P. aeruginosa* were 57.8% whereas *S. aureus* and *Acinetobacter* spp. were only 13.3% each respectively. Antimicrobial sensitivity test showed that *P. aeruginosa* was highly resistant to antimicrobial agents. It was most sensitive to polymyxine B (99%) followed by amikacin (64.3%). *Acinetobacter* spp. was found least resistant to amikacin (28.9%) followed by chloramphenicol (36.8%). *S. aureus* was least resistant to vancomycin (2.4%) followed by levofloxacin (19.5%) and chloramphenicol (19.5%) whereas they were moderately resistant to oxacillin (53.7%). Continuous survey and analysis of changing microbial flora and their antibiogram in burn patients help in timely detection and control of spread of infection and also help to review effective antibiotic policies.

Key words: Burn, Burn wounds infection, *P. aeruginosa*, Antibiotics resistance pattern.

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LIST OF ABBREVIATION

BA	Blood Agar
BCU	Burn Care Unit
BU	Burn Unit
CONS	Coagulase Negative Staphylococci
<i>E. coli</i>	<i>Escherichia coli</i>
GNB	Gram Negative Bacilli
GPB	Gram Positive Bacilli
GPC	Gram Positive Cocci
HCW	Health Care Worker
ICU	Intensive Care Unit
MA	MacConkey Agar
MHA	Muller Hinton Agar
NA	Nutrient Agar
NB	Nutrient Broth
<i>P. aeruginosa</i>	<i>Pseudomonas aeruginosa</i>
<i>S. aureus</i>	<i>Staphylococcus aureus</i>
<i>S. epidermidis</i>	<i>Staphylococcus epidermidis</i>
<i>S. pneumoniae</i>	<i>Streptococcus pneumoniae</i>
<i>S. saprophyticus</i>	<i>Staphylococcus saprophyticus</i>
SIM	Sulphur Indole Motility
SSI	Surgical Site Infection
TBSA	Total Body Surface Area
TSI	Triple Sugar Iron Agar
TSST	Toxic Shock Syndrome Toxin
WHO	World Health Organization