

**BACTERIOLOGICAL PROFILES OF TRACHEAL ASPIRATES
OF PATIENTS ATTENDING NATIONAL INSTITUTE OF
NEUROLOGICAL AND ALLIED SCIENCES**

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By

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ABSTRACT

National Institute of Neurological and Allied Sciences is the only super specialty hospital in Nepal. The hospital was constructed to treat traumatic and seriously ill Neurological patients and has saved life of several hundred such patients. Tracheostomy is performed to provide enough air to lung when patients can not respire in normal way. The tracheostomised patients have weak immune system due to impaired bronchociliary escalator so they are colonized by gram negative aerobic bacteria which lead to tracheobronchitis or pneumonia but there was no data suggesting bacteriological profile in tracheal aspirates. So the aim of the study was to isolate and identify the potential pathogen causing post tracheostomy infection. A prospective study was carried out during April 2008-February 2009 based at National Institute of Neurological and Allied Sciences, Kathmandu. Tracheal aspirates of 50 tracheostomized patients were collected and analyzed. Out of the 50 cases, 45 cases showed bacterial growth. Sixty seven isolates were identified; some cases were poly-microbial (20, 44.45%). *Pseudomonas aeruginosa* and enteric gram negative bacteria were most predominant bacteria (27; 40.30%) followed by *Staphylococcus aureus* (7; 10.45%), Viridans *Streptococcus* (2; 2.98%) and other Gram negative bacteria (4; 5.96%). The isolates of *P. aeruginosa* were most sensitive to the Amikacin (81.48%, 22) followed by Ciprofloxacin (70.37%, 19). All were resistant to the Cephotaxime. The isolates of enteric gram negative bacteria were sensitive to Amikacin and Chloramphenicol (74.07%) and all were resistant to Ampicillin and Cephalexin. All the gram positive bacteria isolated were sensitive to Vancomycin. Among the total isolates, 88.88% (24 isolates) of *P. aeruginosa*, 66.66% (19 isolates) of enteric gram negative bacteria, and 55.55% (5 isolates) of Gram positive bacteria were multi-drug resistant. The study showed alarming condition of MDR in tracheal aspirates indicating need of surveillance for MDR and timely intervention for control.

Key words: Tracheal specimen, Bacteriological profile, MDR.

TABLE OF CONTENTS

| | |
|--|----------|
| Title Page | i |
| Recommendation | ii |
| Certificate of Approval | iii |
| Board of Examiners | iv |
| Acknowledgement | v |
| Abstract | vi |
| Table of Contents | vii |
| List of Abbreviations | xii |
| List of Tables | xii |
| List of Photographs | xiv |
| List of Appendices | xv |
| | |
| CHAPTER I. INTRODUCTION | 1 |
| | |
| CHPAPTER II. OBJECTIVES | 3 |
| 2.1 General Objectives | 3 |
| 2.2 Specific Objectives | 3 |
| | |
| CHAPTER III. LITERATURE REVIEW | 4 |
| 3.1 Anatomy of parts involved | 5 |
| 3.1.1 Trachea | 6 |
| 3.2 Physiological changes after tracheostomy | 7 |

| | | |
|---------|---|----|
| 3.3 | Complication of tracheostomy | 7 |
| 3.4 | Common pathogens of post tracheostomy infection | 8 |
| 3.5 | Host Defences | 11 |
| 3.5.1 | Mucocilliary escalator | 11 |
| 3.5.2 | Non specific antimicrobial agents | 12 |
| 3.5.3 | Immunoglobulins | 12 |
| 3.5.4 | Recruited defences | 13 |
| 3.6 | Pathogenesis | 15 |
| 3.6.1 | Routes of Bacterial Entry | 15 |
| 3.6.2 | How Specific Risk Factors Lead to Pneumonia. | 16 |
| 3.6.2.1 | Infection control-related factors. | 16 |
| 3.6.2.2 | Intervention-related factors. | 17 |
| 3.6.3 | Adherence to respiratory surface | 18 |
| 3.7 | Invasion and Inflammation | 19 |
| 3.8 | Disease development | 21 |
| 3.9 | Infection followed by tracheostomy | 22 |
| 3.9.1 | Pneumonia | 23 |
| 3.9.1.1 | Community acquired pneumonia | 24 |
| 3.9.1.2 | .Aspiration pneumonia | 24 |
| 3.9.1.3 | Hospital acquired pneumonia | 25 |
| 3.10 | Samples for microbiological testing | 25 |

| | |
|--|-----------|
| 3.11 Microbiological examination of samples | 25 |
| 3.12 Direct examination of stained samples | 26 |
| 3.13 Detection of antigen | 26 |
| 3.14 Culture | 27 |
| 3.15 Identification of isolated organism | 28 |
| 3.16 Serological tests | 28 |
| 3.17 Detection of specific DNA sequences | 28 |
| 3.18 Antibiotic sensitivity test (Kirby-Bauer Disk Diffusion Method) | 29 |
| 3.19 Antibiotic resistance and Multi Drug Resistance (MDR) | 30 |
| CHAPTER: IV. MATERIALS AND METHODS | 31 |
| 4.1 Materials | 31 |
| 4.2 Methodology | 32 |
| 4.2.1 Specimen collection | 32 |
| 4.2.2 Inclusion criteria | 32 |
| 4.2.3 Exclusion criteria | 32 |
| 4.2.4 Transport | 32 |
| 4.3 Processing of specimen | 33 |
| 4.3.1 Macroscopic examination | 33 |
| 4.3.2 Microscopic examination of tracheal aspirates | 33 |
| 4.3.3 Culture of specimen | 33 |
| 4.3.4 Identification of isolated organism | 33 |
| 4.3.5 Sensitivity testing | 34 |

| | |
|--|----|
| 4.4 Purity plate | 34 |
| 4.5 Quality control for test | 34 |
| CHAPTER V. RESULT | |
| 5.1 Distribution of samples and patients | 35 |
| 5.2 Result pattern | 35 |
| 5.3 Growth patterns | 36 |
| 5.4 Staining pattern of the isolates | 36 |
| 5.5 Trends of microbial isolate | 37 |
| 5.6 Antibiotic sensitivity pattern | 38 |
| 5.6.1 Antibiotic sensitivity pattern of <i>Pseudomonas aeruginosa</i> | 38 |
| 5.6.2 Antibiotic Sensitivity pattern of <i>Klebsiella pneumniae</i> | 38 |
| 5.6.3 Antibiotic sensitivity pattern of <i>E. coli</i> | 39 |
| 5.6.4 Antibiotic sensitivity pattern of <i>Klebsiella oxytoca</i> | 40 |
| 5.6.5 Antibiotic sensitivity pattern of <i>Staphylococcus aureus</i> | 40 |
| 5.6.6 Antibiotic Sensitivity pattern of <i>Streptococcus viridans</i> | 41 |
| 5.6.7 Antibiotic sensitivity pattern of <i>Enterobacter Cloacae</i> | 41 |
| 5.6.8 Antibiotic sensitivity pattern of <i>Morganella morganii</i> | 41 |
| 5.6.9 Antibiotic sensitivity pattern of <i>Moraxiella catarrhalis</i> | 41 |
| 5.6.10 Antibiotic sensitivity pattern of <i>Pseudomonas maltophila</i> | 41 |
| 5.6.11 Antibiotic sensitivity pattern of <i>A. calcoaceticus</i> | 42 |
| 5.7 Burden of Multi Drug Resistance among the total isolates | 42 |
| CHAPTER VI DISCUSSION AND CONCLUSION | 43 |

| | |
|---|-----------|
| CHAPTER VII SUMMARY AND RECOMMENDATION | 53 |
| REFERENCES | 55 |

LIST OF ABBREVIATIONS

| | |
|-------------------------|---|
| <i>A. calcoaceticus</i> | <i>Acinetobacter calcoaceticus</i> |
| ASM | American Society of Microbiology |
| BA | Blood Agar |
| CA | Chocolate Agar |
| CAP | Community Acquired Pneumonia |
| CNS | Central Nervous System |
| <i>E. coli</i> | <i>Escherichia coli</i> |
| EGNB | Enteric Gram Negative bacteria |
| GPB | Gram positive bacteria |
| GNB | Gram negative bacteria |
| HAP | Hospital Acquired Pneumonia |
| <i>H influenzae</i> | <i>Haemophilus influenzae</i> |
| ICU | Intensive care unit |
| MA | Macconkey Agar |
| <i>M. catarrhalis</i> | <i>Moraxiella catarrhalis</i> |
| MHA | Mueller Hinton Agar |
| MDR | Multi Drug Resistance |
| MRSA | Methicillin Resistant Staphylococcus aureus |
| <i>K. pneumoniae</i> | <i>Klebsiella pneumoniae</i> |
| <i>K. oxytoca</i> | <i>Klebsiella oxytoca</i> |
| <i>P aeruginosa</i> | <i>Pseudomonas aeruginosa</i> |
| PAE | Post antibiotics effect |
| PMN | Polymorpho nuclear |
| RTA | Road traffic accident |
| <i>S aureus</i> | <i>Staphylococcus aureus</i> |
| <i>S. viridans</i> | <i>Streptococcus viridans</i> |

LIST OF TABLES

| | |
|-------------|---|
| Table 5.1 | Demography of patients |
| Table 5.2 | Pattern of result |
| Table 5.3 | Distribution of the growth patterns |
| Table 5.4 | Staining pattern of isolates |
| Table 5.5 | Distribution of microbial isolates from tracheal aspirates |
| Table 5.6.1 | Antibiotics sensitivity of <i>Pseudomonas aeruginosa</i> |
| Table 5.6.2 | Antibiotic sensitivity pattern of <i>Klebsiella pneumoniae</i> |
| Table 5.6.3 | Antibiotic sensitivity pattern of <i>E.coli</i> |
| Table 5.6.4 | Antibiotic sensitivity of <i>Klebsiella oxytoca</i> |
| Table 5.6.5 | Antibiotic sensitivity patterns of <i>Staphylococcus aureus</i> |
| Table 5.7 | Burden of MDR among the total isolates |

LIST OF PHOTOGRAPHS

1. Pus cell
2. Gram positive cocci
3. Antibiotic susceptibility test

LIST OF APPENDICES

| | |
|--------------|---|
| Appendix I | Clinical and Microbiological profile |
| Appendix II | Composition and preparation of different culture media |
| Appendix III | Procedures of Gram's staining and antibiotic susceptibility |
| Appendix IV | Biochemical tests used for identification of pathogen |