BACTERIAL ISOLATES FROM EAR DISCHARGE OF PATIENTS SUFFERING FROM OTITIS MEDIA AND THEIR ANTIBIOTIC SUSCEPTIBILITY PATTERN

A DISSERTATION SUBMITTED TO THE CENTRAL DEPARTMENT OF MICROBIOLOGY TRIBHUVAN UNIVERSITY KATHMANDU, NEPAL, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTERS OF SCIENCE IN MICROBIOLOGY
(MEDICAL)

BY

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RECOMMENDATION

This is to certify that **Ms. Ramita Suwal** has completed this dissertation work entitled "**BACTERIAL ISOLATES FROM EAR DISCHARGE OF PATIENTS SUFFERING FROM OTITIS MEDIA AND THEIR ANTIBIOTIC SUSCEPTIBILITY PATTERN"** as a partial fulfillment of Master of Science Degree in Microbiology under our supervision. To our knowledge, this work has not been submitted to any other degree.

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ABSTRACT

This study was conducted to identify the aerobic bacterial pathogen causing otitis media and determine their antibiotic susceptibility pattern. Aural discharge samples were collected from the patients visiting the Ear Nose Throat Out Patient Department of Shree Birendra Hospital, Chhauni, who were diagnosed with chronic suppurative otitis media and acute otitis media. Standard microbiological procedures were employed to isolate and identify the causative agents of the infection and determine the antibiotic susceptibility pattern of isolated pathogen.

Among total 153 samples, 128 (84.31%) samples were positive. 119 (77.7%) samples produced single organism and 9 (5.8%) samples gave mixed growth. The total of 136 isolates was obtained. Gram positive organisms (64%) were predominant. The most common isolates were *Staphylococcus aureus* from 70(51.5%) cases followed by *Pseudomonas aeruginosa* from 27 (19.9%) cases. Other organisms isolated were Coagulase negative staphylococci (11.8%), *Klebsiella* species (6.6%), *Escherichia coli* (5.1%), *Citrobacter fruendii* (2.9%), *Proteus mirabilis (*0.7%), *Streptococcus pyogenes* (0.7%) and *Haemophilus influenzae* (0.7%). *S. aureus* showed greater sensitivity (67.1%) to cefoxitin than other antibiotics tested. Antibiotic susceptibility test of *P. aeruginosa* showed 100% sensitivity to imipenem, 92.6% to piperacillin, 88.9% each to ceftazidime and amikacin and 74.1% to ciprofloxacin. Similarly, most *E. coli* isolates (71.4%) were sensitive to gentamicin, *C. fruendii* (100%) to gentamicin, *Klebsiella* sps (77.8%) to ciprofloxacin and gentamicin each. *S. aureus* was found to be the most common etiological agent of otitis media followed by *P. aeruginosa*.

Keywords: Otitis media, Chronic suppurative otitis media, *S. aureus*, *P. aeruginosa*

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ABBREVIATIONS

AOM	Acute Otitis Media
BA	Blood Agar
BRINOS	Britain Nepal Otology Service
CA	Chocolate Agar
CLSI	Clinical and Laboratory Standards Institute
CoNS	Coagulase Negative Staphylococci
CSOM	Chronic Suppurative Otitis Media
DALY	Disability-Adjusted Life-Years
ENT	Ear Nose and Throat
MA	MacConkey Agar
MDR	Multi-Drug Resistant
MHA	Muller Hinton Agar
MRSA	Methicillin Resistant *Staphylococcus aureus*
NA	Nutrient Agar
OME	Otitis Media with Effusion
OPD	Out Patient Department
SIM	Sulphide Indole Motility
TSI	Triple Sugar Iron
WHO	World Health Organization