

STUDY ON INCIDENCE OF NALIDIXIC ACID RESISTANT
SALMONELLA ENTERICA SEROVAR TYPHI AND SALMONELLA
ENTRICA SEROVAR PARATYPHI A AND THEIR ANTIBIOTIC
SUSCEPTIBILITIES

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BY
SHUDIJI GIRI
CENTRAL DEPARTMENT OF MICROBIOLOGY
TRIBHUVAN UNIVERSITY
KIRTIPUR, KATHMANDU, NEPAL

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RECOMMENDATION

This is to certify that **Mr. Shudij Giri** has completed this dissertation work entitled "**Study on incidence of Nalidixic acid resistant *Salmonella enterica* serovar Typhi and *Salmonella enterica* serovar Paratyphi A in suspected enteric fever patient and their antibiotic susceptibilities**" 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 for any other degree.

Ms. Shaila Basnyat

Lecturer

Central Department of Microbiology

Tribhuvan University

Kirtipur, Kathmandu

Dr. Vijay K Sharma, MD, M.Phil

(Clinical Biochemistry)

T. Clinical Pathologist

Asst. Professor

IOM, Maharajgunj

Kathmandu, Nepal

Date:

Date:

CERTIFICATE OF APPROVAL

On the recommendation of **Ms. Shaila Basnyat** and **Dr. Vijay K Sharma**, this dissertation work of **Mr. Shudij Giri** is approved for the examination and is submitted to the Tribhuvan University in partial fulfillment of the requirement for M. Sc. degree in Microbiology (Medical).

.....

Prof. Dr. Anjana Singh

Head of the Department

Central Department of Microbiology

Tribhuvan University

Kirtipur, Kathmandu

Nepal

Date:

BOARD OF EXAMINERS

Recommended by:

.....

Ms. Shaila Basnyat

Supervisor

.....

Dr. Vijay K Sharma, MD, M. Phil

Supervisor

Approved by:

.....

Prof. Dr. Anjana Singh

Head of Department

Examined by:

.....

Assoc. Prof. Dr. Keshab Parajuli

External examiner

.....

Ms. Manita Aryal

Internal examiner

Date:

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Shudij Giri

Date:

ABSTRACT

A total of 949 blood specimen from patients suspected of enteric fever were included in this study. Among them 66 (6.95 percent) blood specimen were culture positive. The incidence of *S. Typhi* and *S. Paratyphi A* among total suspected enteric fever patient was 3.2% (30) and 3.8% (36) respectively. The incidence of culture positive case was highest among the age group of 10-20 years (12.4%). Among 66 culture positive cases, the incidence rate was more in male patient (8.9%) than female patient (4.7%). The culture positive rate was found maximum from out patients (7.5%) than inpatients (5.4%). The incidence of Nalidixic acid resistant *Salmonella* isolates among outpatient and inpatient was 7.2% and 4.6% respectively. The incidence of Nalidixic acid resistant *S. Typhi* and *S. Paratyphi A* among total population was 2.7% and 3.8% respectively. The incidence of Nalidixic acid resistant *Salmonella* isolates among male and female was 8.1% and 4.7% respectively. Among 66 isolates, 30 (45.5%) were *Salmonella Typhi* and 36 (54.5%) were *Salmonella Paratyphi A*.

The most sensitive antibiotics for *Salmonella Typhi* were found to be ciprofloxacin and ceftriaxone. Similarly the most sensitive antibiotics for *Salmonella Paratyphi A* were found to be ciprofloxacin, ceftriaxone, cotrimoxazole and chloramphenicol.

Among 62 Nalidixic acid resistant isolates 26(41.94%) were *Salmonella Typhi* and 36 (58.1%) were *Salmonella Paratyphi A*. In contrast, among 4 Nalidixic acid susceptible isolates all 4 (100%) were *Salmonella Typhi* and non were *Salmonella Paratyphi A*.

In this study, none of the nalidixic acid resistance isolates were found Ciprofloxacin resistance.

Key words: Enteric fever, *Salmonella*, Nalidixic acid resistance

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ABBREVIATIONS

CFU	:	Colony Forming Unit
DNA	:	Deoxyribonucleic Acid
FQs	:	Fluoroquinolones
MDR	:	Multi-Drug Resistant
MDRST	:	Multi-Drug Resistant <i>S. Typhi</i>
MHA	:	Mueller Hinton Agar
MHB	:	Mueller Hinton Broth
MIC	:	Minimum Inhibitory Concentration
NA	:	Nalidixic Acid
NAR	:	Nalidixic Acid Resistant
NAS	:	Nalidixic Acid Sensitive
NARST	:	Nalidixic Acid Resistant <i>S. Typhi</i>
PCR	:	Polymerase Chain Reaction
SIM	:	Sulphur, Indole, Motility medium
TSI	:	Triple Iron Sugar
WHO	:	World Health Organization