

**A COMPARATIVE STUDY OF DIFFERENT DIAGNOSTIC
METHODS FOR *Mycobacterium tuberculosis* IN
SUSPECTED PATIENTS VISITING NATIONAL
TUBERCULOSIS CENTRE, THIMI, BHAKTAPUR, NEPAL**

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**BY
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This is to certify that **Mr. Asta Ram Khagi** has completed this dissertation work entitled “**A comparative study of different diagnostic methods for *Mycobacterium tuberculosis* in suspected patients visiting National Tuberculosis Centre, Thimi, Bhaktapur, Nepal**” as a partial fulfillment of M. Sc. degree in Microbiology under our supervision. To our knowledge this work has not been submitted for any other degree.

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ABSTRACT

This study was conducted in 250 symptomatic patients of pulmonary tuberculosis, attending National Tuberculosis Center (NTC), Thimi, Bhaktapur, Nepal during 29th June 2005 to 29th December 2005 using different diagnostic methods.

In this present comparative study, all 250x3 sputum samples, three sputum samples from each patient were examined by Auramine fluorochrome stain. In this study the samples were divided in to two groups, A (n=150) one from each patient showed tubercle bacilli in Auramine fluorochrome microscopy and B (n=100) one from each patient showed no tubercle bacilli in Auramine fluorochrome microscopy.

In study group A, Out of 150 sputum smear positive by Auramine fluorochrome microscopy only 134 patients were sputum smear positive in Ziehl-Neelsen microscopy and 136 were culture positive, where all the cases of sputum smear positive by Auramine fluorochrome microscopy were x-ray positive.

In study group B, out of 100 sputum smear negative by Auramine fluorochrome microscopy, 24 cases showed evidence of x-ray positive, 14 cases showed culture positive and all cases showed negative in Z-N stain.

The evidence of TB was found to be higher in male than female. On the basis of culture tubercle bacilli isolates were more frequently encountered in male i.e. 111 (82%) than female 25 (18%) which is statistically significant ($\chi^2= 54.38$). Middle age group (20-50 years) patients were found to be more susceptible to TB followed by younger age group.

Key words: *M. tuberculosis*, Ziehl-Neelsen, Auramin fluorochrome stain, Culture X-ray

TABLE OF CONTENTS

Title page	i
Recommendation	ii
Certificate of approval	iii
Board of Examiners	iv
Acknowledgement	v
Abstract	vii
Table of Contents	viii
List of Abbreviation	xii
List of Tables	xiii
List of Figures	xiv
List of Photographs	xv
List of Appendices	xvi
CHAPTER-I: INTRODUCTION	1
CHAPTER-II: OBJECTIVES	5
2.1 General objective	5
2.2 Specific objective	5
CHAPTER-III: LITERATURE REVIEW	6-45
3.1 Global History	6
3.2 Disease	8
3.3 <i>M. tuberculosis</i>	10
3.3.1 Habitat	12
3.3.2 Nutritional requirement	13
3.3.2.1 Carbon Source	13
3.3.2.2 Nitrogen source	14
3.3.2.3 Source of iron	14
3.3.3 Resistance	15
3.3.5 Classification	15

3.4 Epidemiology	16
3.4.1 Incubation period	17
3.4.2 Risk of infection	18
3.5 Predisposing factors in the development of tuberculosis	18
3.6 Pathogenesis	18
3.6.1 Primary pulmonary tuberculosis	19
3.6.2 Post pulmonary tuberculosis	20
3.6.3 Extra pulmonary tuberculosis	20
3.7 Host defense mechanism	21
3.8 Susceptibility to chemotherapeutic agents	21
3.9 Portal of entry	22
3.10 Diagnosis	23
3.10.1 Clinical diagnosis	23
3.10.2 Laboratory examination	23
3.10.2.1 Staining reaction	24
3.10.2.2 Specimen collection and transport	25
3.10.2.3 Sputum smear microscopy	27
3.10.2.4 Culture	32
3.10.2.5 Biochemical properties	35
3.10.2.5.1 Niacin test	35
3.10.2.5.2 Nitrate test	36
3.10.2.5.3 Catalase test	36
3.10.2.5.4 Urease test	37
3.10.2.6 Immunological test	37
3.10.2.7 Antigen detection	37
3.10.2.8 Antibody detection	38
3.10.2.8.1 Elispot test	38
3.10.2.8.2 Tuberculosteric Acid (TBSA) Test	38
3.10.2.9 Molecular method	39
3.10.2.9.1 Strand Displacement Amplification (SDA)	39
3.10.2.9.2 Polymerase Chain Reaction (PCR)	40

3.10.2.9.3 Transcription Mediated Amplification (TMA)	40
3.10.2.9.4 Reporter Mycobacteriophage	41
3.10.2.10 Tuberculin skin test	41
3.11 X-Ray	43
3.12 Chemotherapy	44
CHAPTER-IV: MATERIAL AND METHODS	46-58
4.1 Materials and Chemicals used	46
4.2 Methods	46
4.2.1 Study site	46
4.2.2 Study population	46
4.2.3 Collection of sputum sample	47
4.2.4 Sample evaluation	47
4.2.5 Sputum smear microscopy	50
4.2.5.1 Ziehl-Neelsen method	50
4.2.5.2 Auramine fluorochrome method	52
4.2.6 Culture examination (NaOH modified Petroff method)	55
4.2.7 Chest X-ray	57
CHAPTER-V: RESULTS	59-69
5.1 Study group A	60
5.2 Study group B	69
CHAPTER-VI: DISCUSSION AND CONCLUSION	70-79
6.1 Discussion	70
6.2 Conclusion	79
CHAPTER-VII: SUMMARY AND RECOMMENDATION	80-81
7.1 Summary	80
7.2 Recommendations	81

REFERENCES

82

APPENDICES

LIST OF ABBREVIATIONS

AFB	: Acid Fast Bacilli
AIDS	: Acquire Immuno Deficiency Syndrom
ALA	: American Lung Association
ATS	: American Thoracic Society
BCG	: Bacilli Calmette-Guerin
CAMP	: Christie, Atkins and Munch Peterson
CD	: Cluster of differentiation
CMI	: Cell Mediated Immunity
DOTS	: Directly Observed Treatment Short Course Therapy
ELISA	: Enzyme Linked Immunosorbent Assay
HIV	: Human Immuno Deficiency Virus
INH	: Isoniazid
IUATL	: International Union Against Tuberculosis and Lung Disease
LJ	: Lowenstein Jensen
MDR	: Multidrug Resistant
MRS	: Methicilin Resistance Strain
MTB	: <i>Mycobacterium tuberculosis</i>
NTC	: National Tuberculosis Centre
NTP	: National Tuberculosis Programme
PCR	: Polymerase Chain Reaction
PPD	: Purified Protein Derivative
PTB	: Pulmonary Tuberculosis
SAARC	: South Asian Association of Regional Corporation
STC	: SAARC Tuberculosis Centre
TB	: Tuberculosis
TU	: Tuberculin Units
WHO	: World Health Organization
Z-N	: Ziehl-Neelsen

LIST OF TABLES

Table 1: Distribution of positive cases according to different diagnostic method	61
Table 2: Distribution of Auramine Fluorochrome stain positive cases by age and sex	62
Table 3: Distribution of culture positive cases by age and sex.	64
Table 4: Distribution of chest X-ray positive cases by age and sex.	66
Table 5: Distribution of Ziehl-Neelsen stain positive cases by age and sex	68
Table6: Distribution of positive cases in direct sputum smears negative cases examined by fluorescent microscopy method.	70

LIST OF FIGURES

Figure1:	Diagrammatic representation of the <i>Mycobacterium</i> cell wall.	12
Figure2:	Flow chart of direct sputum smear examination(Z-N technique)	48
Figure3:	Flow chart of direct sputum smear examination(Auramine technique)	49
Figure4:	Flow chart for primary culture examination	54
Figure5:	Flow chart of direct sputum smear examination	58
Figure6:	Comparative study of direct smear examined by Auramine Fluorochrome stain, Ziehl-Neelsen stain, culture and chest x-ray	60
Figure7:	Distribution of direct smear positive by Auramin Fluorochrome microscopy method in different age group	62
Figure8:	Prevalence of pulmonary tuberculosis among male and female according to Auramine fluorochrome microscopy method	62
Figure9:	Distribution of culture positive cases according to different age group	64
Figure10:	Prevalence of pulmonary tuberculosis among male and female according to culture	64
Figure11:	Distribution of chest X-ray positive cases according to different age group	66
Figure12:	Prevalence of pulmonary tuberculosis among male and female according to chest X-ray	66
Figure13:	Distribution of direct smear positive by Ziehl-Neelsen microscopy method in different age group	68
Figure14:	Prevalence of pulmonary tuberculosis among male and female according to Ziehl-Neelsen microscopy method	68
Figure15:	Comparative study of direct smear examined by fluorescent stain, Z-N stain, culture and chest X-ray	69

LIST OF PHOTOGRAPHS

Photograph 1: Z-N stained sputum smear showing red AFB of MTB (100X)	i
Photograph 2: Auramine stained sputum smear showing glowing MTB (40X)	i
Photograph 3: Microscopic observation of Z-N stained slide	ii
Photograph 4: Microscopic observation of Auramine stained slide by fluorescent microscope	ii
Photograph 5: Culture of Mycobacteria on LJ medium	iii

LIST OF APPENDICES

Appendix I: Materials	i
Appendix II: Bacteriological media	iv
Appendix III: Reagents/Chemicals	vi
Appendix IV: Master chart	vii
Appendix- IV: Statistical analysis	xiv