ASYMPTOMATIC BACTERIURIA AND ANTIBIOTIC SUSCEPTIBILITY PATTERN IN PREGNANT WOMEN ATTENDING SHREE BIRENDRA HOSPITAL, CHHAUNI

A

DISSERTATION

SUBMITTED TO THE CENTRAL DEPARTMENT OF MICROBIOLOGY

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE IN MICROBIOLOGY (MEDICAL)

BY

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2010

Recommendation

This is to certify that **Miss SUMANGALA DARSANDHARI** has completed this dissertation work entitled **"Asymptomatic bacteriuria and antibiotic susceptibility pattern in pregnant women attending Shree Birendra Hospital, Chhauni"** as a partial fulfillment of Master of Science Degree in Microbiology under our supervision. To our knowledge, this work has not been submitted for any other degree.

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ABSTRACT

Urinary tract infection (UTI) is a common problem in pregnant woman. This study examined the frequency of UTI in 500 asymptomatic pregnant women visiting Shree Birendra hospital, Chhauni from November 2009 to February 2010. To determine the prevalence of asymptomatic bacteriuria in pregnancy clean catch midstream were collected. Urine samples were examined for UTI microscopically and by culture and sensitivity tests were done for the organisms isolated using a range of antibiotics.

Of the 500 pregnant women, 33 had significant bacteriuria giving a prevalence rate of 6.6%. There was significant association between patient with previous UTI and asymptomatic bacteriuria. There was no significant difference in prevalence with age, education status, geographical distribution (rural/urban), increasing parity and age at marriage. The dominant bacteria isolates were *E. coli* (42.4%) and *Staph aureus* (24.2%). The isolated bacteria were most sensitive to nitrofurantoin followed by gentamycin, cotrimoxaxole, cephalexin, norfloxacin and ofloxaxin. The organisms isolated were least sensitive to amoxicillin and nalidixic acid. There was no significant association between age, education status, geographical distribution (rural/urban), gravida, parity and age at marriage with asymptomatic bacteriuria. There was significant association between patient with previous UTI and asymptomatic bacteriuria.

The prevalence of asymptomatic bacteriuria in pregnant women at Shree Birendra Hospital, Chhauni is 6.6%. The predominant organisms are *E.coli* and *Staph aureus*, and most isolates are sensitive to nitrofurantoin, cephalexin and gentamicin.

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LIST OF ABBREVIATIONS

APN	Acute pyelonephritis
ASB	Asymptomatic Bacteriuria
ATCC	American Type Culture Collection
BA	Blood Agar
CC-MSU	Clean Catch Mid Stream Urine
CFA	Colonization Factor Antigens
CFU	Colony Forming Units
CLED	Cysteine Lactose Electolyte Deficient Agar
CONS	Coagulase Negative Staphylococci
COPS	Coagulase Positive Staphylococci
CRF	Coagulase Reacting Factor
DNA	Deoxyribonucleic Acid
FN	False Negative
FP	False Positive
G6 PD:	Glucose 6 Phosphate dehydrogenase
HPF	High Power Field
IDSA	Infectious Diseases Society of America
LPF	Low Power Field
MA	MacConkey Agar
MDR	Multi-drug Resistant
MHA	Mueller Hinton Agar
MRVP	Methyl Red Voges Proskauer
MSU	Mid-Stream Urine
NA	Nutrient Agar
NB	Nutrient Broth
NCCLS	National Committee for Clinical Laboratory Standards
NPV	Negative Predictive Value
ONPG	*o*-nitrophenyl-β-D-galactopyranoside

OPD	Out Patient Department
PABA	Para-amino benzoic acid
PDA	Phenylalanine Deaminase
PPV	Positive Predictive Value
QREC	Quinolone Resistant *Escherichia coli*
RBC	Red Blood Cell
SIM	Sulfide Indole Motility
SPSS	Stastical Package for Social Science
TMP-SMX	Trimethoprim-Sulfomethaxole
TN	True Negative
TP	True Positive
TPD	Tetramethyl *p*-phenylene diamine dihydrochloride
TSIA	Triple Sugar Iron Agar
TUTH	Tribhuvan University Teaching Hospital
UTI	Urinary Tract Infection
WBC	White Blood Cell
WHO	World Health Organization