



## Asymptomatic Bacteriuria in Antenatal Women. Does It Alter Outcome ?

<b>Dr. Katta Aravinda</b>	Assistant Professor, Department of Obstetrics & Gynaecology, Katuri Medical College, Guntur.
<b>Dr. Alaparthi Priya Nandana</b>	Assistant Professor, Department of Obstetrics & Gynaecology, Katuri Medical College, Guntur.
<b>Dr.Vattikuti Surekha</b>	Assistant Professor, Department of Obstetrics & Gynaecology, Katuri Medical College, Guntur.
<b>Dr. Shaik Meera Esha</b>	Junior Resident, Department of Obstetrics & Gynaecology, Katuri Medical College, Guntur.

**ABSTRACT**

Asymptomatic Bacteriuria (ASB) is a persistent, actively multiplying bacteria within the urinary tract without symptoms<sup>1</sup>. The prevalence in pregnancy varies from 2-7%<sup>2</sup>. If ASB is not treated, approximately 25% of women will develop acute symptoms during pregnancy<sup>3</sup>. **AIMS AND OBJECTIVES:** To find out the number of women positive for ASB, to find out the commonest pathogen, to compare the outcome. **MATERIAL AND METHODS:** Prospective study of 300 pregnant women visiting Katuri Medical College and Hospital, Guntur, between January 2014 and June 2015. The women were divided into group 'A' positive for ASB and group 'B' negative for ASB. **RESULTS :** Prevalence of asymptomatic Bacteriuria in the study population was 9.3 %. Common pathogen was E.coli (64.3%). Maternal morbidity was 28.6% compared to 9.9% in 'B' group. Fetal morbidity was higher (21.4%) compared to 'B' group (10.3%). **CONCLUSION:** Pregnant women with ASB are at increased risk for adverse maternal and fetal outcomes which could be prevented.

**KEYWORDS**

Asymptomatic Bacteriuria, Prevalence, Pathogen, outcome.

**INTRODUCTION :** Urinary tract infection is one of the most frequent bacterial infections. It is the second most common bacterial infection seen during pregnancy<sup>4</sup>. The bacterial infection can be symptomatic or asymptomatic. The symptomatic urinary tract infection can be uncomplicated or complicated. Uncomplicated urinary tract infection in a symptomatic patient characterized by frequency, urgency, dysuria, or supra pubic pain in a woman with a normal genitourinary tract<sup>5</sup>. Complicated urinary tract infection is also symptomatic in a woman with functional or structural abnormalities of the genitourinary tract which involve either the bladder or kidneys<sup>6</sup>. Asymptomatic bacteriuria (ASB) is an entity with possibly serious consequences in the form of fetal and maternal morbidity. It can cause maternal anemia, acute pyelonephritis recurrent infection, preterm labour, septicemia and even death of the mother<sup>7</sup>. It can cause intra uterine growth restriction prematurity and low birth weight of the fetus and fetal mortality<sup>7</sup>. Screening of asymptomatic subjects for bacteriuria is appropriate as bacteriuria has adverse outcomes that can be prevented by antimicrobial therapy.

**AIMS AND OBJECTIVES**

- 1.To find out the number of women positive for asymptomatic bacteriuria (Group A) as well as the number of women negative for asymptomatic bacteriuria (Group B).
- 2.To find out the commonest causative pathogenic organism in these women with asymptomatic bacteriuria.
- 3.To compare the outcome of pregnancies (both maternal and fetal morbidity and mortality) in group A with group B.

**MATERIAL AND METHODS:** Pregnant women visiting the antenatal clinic of the department of Obstetrics and Gynaecology in Katuri Medical College, Guntur for the first time before 28 weeks of gestation. **Type of study:** Prospective study. Number of groups: Group A – Positive for ASB when the clean catch mid stream urine culture showed single uropathogen more than or equal to 10<sup>5</sup> colony forming units/ml

of urine. Group B – Negative for ASB when the urine culture has no growth or less than 10<sup>5</sup> colony forming units/ml. **Sample size:** 300 pregnant women **Period of study:** From Jan 2014 to June 2015. **Inclusion Criteria:** 1.Pregnant women free from symptoms of urinary tract infections, like lower abdominal pain, fever, burning micturition, frequency of micturition, dysuria 2. First antenatal visit before 28 completed weeks. **Exclusion criteria** 1. Patients with symptoms of UTI. 2. Patients with history of UTI in the past one year or during this pregnancy. 3. Patients with diabetes, chronic hypertension and other pre existing medical disorders. 4. Patients who had taken antibiotics in last 6 months.

**2. METHODOLOGY:** 300 randomly selected pregnant women were explained about the study. And their consent for participation in the study was obtained. Then, they were allocated to the study. They were instructed about giving mid stream urine sample by clean catch method for urine culture.

**RESULTS AND ANALYSIS:**

Out of the study population of 300 pregnant women, who were screened for asymptomatic bacteriuria, 28 (9.33%). Women had asymptomatic bacteriuria and belonged to Group A. 272 (90.67%) did not have asymptomatic bacteriuria and belonged to group B.

**TABLE NO.1- CAUSATIVE ORGANISM FOUND IN CASES OF ASYMTOMATIC BACTERIURIA.**

ORGANISM	NO	%
E.COLI	18	64.28%
STAPHYLOCOCCI STAPHYLOCOCCUS STAPHYLOCOCCUS	8	28.57%
KLEBSHIELLA PNEUMONIA	2	7.14%
TOTAL	14	100.00%

The commonest organism detected in the Group A was Escherichia coli giving an incidence of 64.28%.

**MATERNAL MORBIDITY** : Maternal morbidity was observed in 8 women of 28(28.57%) in Group ' A ' compared to 27women of 272 in Group ' B'(9.92%).

**TABLE NO.2-CLASSIFICATION OF MATERNAL MORBIDITY**

FACTORS	GROUP A N (%)	GROUP B N (%)	TOTAL N (%)
PRETERM	4 (14.28%)	16(5.88%)	20 ( 6.66%)
PROM	2(7.15%)	6(2.20%)	8 (2.7%)
PRETERM +PREECLAMPSIA	1 (3.57 %)	0	1(0.33%)
PPROM + PRE-TERM	1(3.57%)	5(1.5%)	6( 2%)
WITHOUT MORBIDITY	20 (71.43%)	245(89.2%)	265 (88.33%)
TOTAL	28 (100% )	272(100%)	300(100.0%)

**FETAL MORBIDITY** : Fetal morbidity was high in Group 'A' accounting to 6 out of 28 cases(21.4%) compared to 28 out of 272 cases in Group 'B' (10.3%).

**TABLE NO.3 CLASSIFICATION OF FETAL MORBIDITY**

FACTORS	GROUP A	GROUP B
LOW BIRTH WEIGHT	4 (14.3%)	20 (4.4%)
PRETERM	2(7.1%)	8 (1.8%)

Low birth weight (14.3%) was the commonest fetal morbidity in group A, followed by prematurity (7.1%). 78.6% in group A and 89.7% in group B did not have any fetal morbidity.

**TABLE-4 BIRTH WEIGHT IN GROUP A AND GROUP B**

BIRTH WEIGHT	GROUP A	GROUP B
LESS THAN 2.5 KG	4 (14.3 %)	12 (4.4 %)
2.5-3.5KG	13 (46.4%)	248 (91.2%)
MORE THAN 3.5KG	11 (39.3%)	12 (4.4%)
TOTAL	28(100.00%)	272 (100.00%)

**DISCUSSION**

In the present study the prevalence of asymptomatic bacteriuria is 9.3%. Different studies have shown varying incidences from 2-15% depending on the group under study like diabetes mellitus complicating pregnancy and methodology, though diabetes mellitus was excluded from the current study. **Norden C W**<sup>10</sup> had 2-10% incidence in his study and **Masinde A et al**<sup>8</sup> had 14.6%.

STUDY	INCIDENCE
<b>Masinde A et al</b> <sup>8</sup>	14.6%
Whitworth <sup>9</sup>	5%
Norden C W <sup>10</sup>	2-10%
Orenstein <sup>11</sup>	8%
Present study	4.3%

The dominant isolates in the study was Escherichia coli which was 64.3%. Others were klebsiella pneumoniae, coagulase negative staphylococcus, which were found in less numbers. This is similar to the findings of previous studies by **Keah SH et Al**<sup>12</sup> **Gayathree et al**<sup>13</sup> **A. Masinde et al**<sup>8</sup> .

STUDY	COMMON ORGANISM	%
<b>Keah SH et al</b> <sup>12</sup>	E.coli	61.34%
<b>Gayathree et al</b> <sup>13</sup>	E.coli	58.82%
<b>A. Masinde et al</b> <sup>8</sup>	E.coli	63.27%
Present Study	E.coli	64.3%

Preterm births in the current study was 25% in ASB patients. Our preterm births compared with a meta analysis of exposure to antenatal UTI that reported relative risk of 1.5

and 2 for association with low birth and prematurity respectively. This was confirmed by **Robert Mittendorf et al**<sup>14</sup> by a meta analysis. Low birth weight was seen in 14.3% of the present study. **Romero et al**<sup>15</sup> said that there was strong association between untreated urinary tract infection and low birth weight.

**SUMMARY**

The study conducted on 300 pregnant women below 28 weeks of gestation. Urine culture and sensitivity was done as screening for ASB. Asymptomatic bacteriuria in pregnancy leads to adverse maternal and fetal effects. Prevalence of asymptomatic bacteriuria in the study population was 9.3 %. Common pathogen was E.coli occurring in 64.3%.Maternal morbidity was higher in those with asymptomatic bacteriuria – 28.6% Those without asymptomatic bacteriuria had lesser morbidity -9.9%.

Fetal morbidity was higher in those whose mothers had asymptomatic bacteriuria 21.4% than in those whose mothers who did not have asymptomatic bacteriuria is 10.3%.The commonest maternal morbidity was preterm labour (14.3%) and the commonest fetal morbidity was low birth weight(14.3%). No maternal or fetal mortality was observed

**CONCLUSION**

Asymptomatic bacteriuria is a common infection. Pregnant women with asymptomatic bacteriuria are at an increased risk for adverse maternal and fetal outcomes which could be prevented by anti microbial treatment of Asymptomatic bacteriuria. Screening with urine culture in early pregnancy at 12 to 16 weeks of gestation is recommended .periodic antenatal checkups and counseling of the antenatal women regarding prevention measures is mandatory for a fruitful outcome.

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