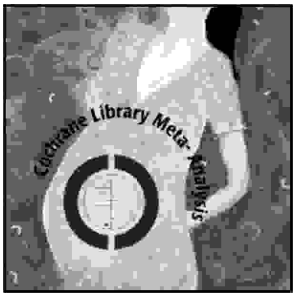
ORIGINAL PROF-1007

PREVALENCE AND COMPLICATIONS OF ASYMPTOMATIC BACTERIURIA DURING PREGNANCY



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ABSTRACT..... doctornaheed13@hotmail.com **Objective:** To study the prevalence and complications of asymptomatic bacteriuria during pregnancy. **Study Design:** Descriptive Study (Cross. Sectional). **Duration of Study:** October 2001 to March 2002. **Patients and Methods:** There were 3000 houses in Satellite town and extension Behari colony Bahawalpur. Taking 40% of total, 1200 houses were selected by systemic random sampling and pregnant residents of these houses were included in the study. **Results:** 580 ladies fulfilling the inclusion criteria were interviewed and tested for bacteriuria by Dip Stick test. 28 women had bacteriuria giving prevalence of 4.8%. Culture and sensitivity tests showed E-Coli to be the causative organism in 78.6% while 21.4% cases were due to other organisms. 35.7% bacteriuric women had positive past history of UTI compared to only 9.7% non-bacteriuric women giving significant result regarding risk of recurrent infection ($p<0.05$). Prevalence of anaemia was not much different in the two groups, 85.7% compared with 82.6%. ($p>0.05$). Development of PIH was not found to be affected by bacteriuria as 10.7% bacteriuric and 8.9% non bacteriuric women developed PIH ($p >0.05$). Similarly number of low birth weight babies was not much different in the two groups, 7.1% compared with 6.2% ($p>0.05$). Bacteriuria was found to be a causative factor for preterm labour as 21.4% bacteriuric women compared with 4.9% non-bacteriuric women went into preterm labour ($p<0.05$). Bacteriuria was found to increase the risk of symptomatic UTI as 14.2% bacteriuric and 2.7% non-bacteriuric women developed cystitis. ($p<0.05$). **CONCLUSION:** Asymptomatic bacteriuria is a common infection during pregnancy and it increases the risk of symptomatic UTI and preterm birth.

Key Words: Asymptomatic bacteriuria, Pregnancy, Complications.

INTRODUCTION

Acteriuria is the second most common bacterical infection seen during pregnancy[1].

lthough the prevalence is the same in pregnant and non-pregnant female[2], changes in maternal physiology may alter the natural course of infection and make pregnant women, more susceptible to grave consequences of UTI.[3] Micro-organisms which cause UTI in pregnancy are the same as that in non-pregnant patients, E.coli, Klebsiella and Enterobactericia accounting for 90% of UTIs.[4,5,6]

Complications associated with asymptomatic bacteriuria are symptomatic UTI[7], maternal anaemia, acute pyelonephritis[8,9], recurrent infection, preterm labour,[9] prematurity and low birth weight babies.[11,12] Screening and treatment for bacteriuria can alleviate adverse maternal & fetal outcome.[13] Screening test most commonly used is a combination of chemical nitrite (Griess test) and leukocyte esterase dip stick test, which has a sensitivity of 86-93% and a specificity of 87 - 98%. Index study aims at detecting bacteriuria with dip stick test and following up different associated complications during pregnancy.

AIMS AND OBJECTIVES

To find out the prevalence and complications of asymptomatic bacteriuria in pregnancy.

PATIENTS AND METHODS

Among 3000 houses in satellite town Bahawalpur. 40% i.e.1200 were selected by random sampling. 598 pregnant women were approached and 580 fulfilled the criteria. They were interviewed through a detailed questionnaire reviewing obstetrical, gynecological and medical history. General physical examination and obstetrical examination was carried out. Dip stick test was performed and bacteriuria was treated after culture in case of positive Dip stick test .These women were then followed for any complications.

RESULTS

Among 580 women included in the study 28 had bacteriuria giving a prevalence of 4.8%.(Table-I) Culture & sensitivity report showed E.Coli to be the causative organism in 22(78.6%) cases while 06(21.4%) were due to other bacteria. (Table-II)

10(35.7%) out of 28 ladies had positive history of UTI in comparison to only 54(9.7%) out of 552 non-Bacteriuric women (Table-III) giving significant results regarding risk of recurrent infection (P<0.05).

Table-I. Prevalence of bacteriuria

Total No. Of pregnant ladies	Pregnant ladies with bacteriuria	% age
580	28	4.8

Table-II. bacteriuria growth on culture and sensitivity

Bacteriuria	No. Of patients	% age
E-Coli	22	78.57
Others	06	21.42

Table-III. Past history of UTI

Groups	Positive past history of UTI	% age	Negative past history of UTI	% age
Bacteriuria (Group A) N=28	10	35.71	18	64.28
Non-bacteriuia (Group B) N=552	54	9.7	498	90.2
P-Value <0.05 (significant)				

Table-IV. Haemoglobin status of pregnant ladies

Haemoglobin Gm/l	No. Of patients with bacteriuria N=28	% age	No. Of patients without bacteriuria N=552	% age
<11gm/l	24	85.7	456	82.6
>11gm/l	04	14.2	96	17.3
P-Value >0.05 (insignificant)				

No statistically significant difference was found in the incidence of anaemia among the two groups as 24(85.7%) suffering from bacteriuria and 456(82.6%) non-bacteriuric women had hemoglobin level below 11gm/dl (P>o.o5). (Table-IV).

Insignificant results were obtained considering development of PIH in bacteriuric women as 3(10.7%) bacteriuric and 49(8.9%) non bacteriuric women developed PIH.(Table-V).

Table-V. Pregnancy induced hypertension

Groups	No. Of patients	No. Of patients developing PIH	% age
Bacteriuric (Group A)	28	03	10.714
Non-bacteriuric (Group B)	552	49	8.876
P-Value >0.05 (insignificant)			

Number of low birth weight babies was 02 out of 28(7.1%) among bacteriuric women and 34 out of 552(6.2%) in non-bacteriuric group. (p>0.05).(Table-VI).

Table-VI. Low birth weight babies

Groups	No. Of patients	No. Of patients weight babies	% age
Bacteriuric (Group A)	28	02	7.14
Non-bacteriuric (Group B)	552	34	6.15
P-Value >0.05 (insignificant)			

Association was found between asymptomatic bacteriuria and preterm birth as 6 out of 28 (21.4%) bacteriuric and 27 out of 552 (4.9%) non-bacteriuric women had preterm birth. (P <0.05) (Table-VII).

Highly significant results were drawn regarding the development of symptomatic UTI as 4(14.2%) out of 28 bacteriuric patients and 16(2.69%) out of 552 non bacteriuric patients developed cystitis. None of the patients developed acute pyelonephritis. This might had been due to the provision of adequate therapy in these women. (Table-VIII).

Table-VII. Preterm Labour

Groups	No. Of patients	No. Of patients developing preterm labour	% age
Bacteriuric (Group A)	28	06	21.4
Non-Bacteriuric (Group B)	552	27	4.9
P-Values <0.05 (significant)			

Table-VIII. Symptomatic UTI

Groups	No. Of Patients	No. Of patients developing symptomatic UTI	% age
Bacteriuric (Group A)	28	04	14.28
Non-Bacteriuric (Group B)	552	16	2.89
P-Values <0.05 (significant)			

DISCUSSION

Asymptomatic bacteriuria other than pregnancy is said not to require treatment. However data from pregnant females shows that 66% will have persistent infection and in 13% it will clear spontaneously. Even after adequate antimicrobial therapy the risk of recurrence is 16-26%.14 The patients may experience recurrent infection from rectal reservoir[15].

In index study 10(35.7%) ladies had past history of UTI. Behavioral modifications are likely to be helpful, including

plenty of water intake, increasing the ascorbic acid (Vit. C) Consumption, wiping from front to back after defecation, avoiding vaginal douches, sprays, spermicidal and foams. Regular and complete bladder emptying and utilizing double micturition technique in patient with residual urine is helpful[16,17].

Several studies relate the occurrence of anemia with UTI especially after 32 weeks of gestation when risk is said to the 25%. Risk is mainly with pyelonephritis which may lead to marrow suppression increased erythrocyte destruction and decreased red cell production. Our study showed insignificant results in this regard.

Association of asymptomatic bacteriuria with hypertension and pre-eclampsia is also documented.[18] It is suggested that chronic sub clinical infection causes increased maternal cytokines level sufficient to affect vascular endothelial function and prime individuals for subsequent development of preeclampsia, In index study 3(10%) bacteriuric and 49(8.9%) non-bacteriuric women developed PIH. The result is statistically insignificant. Similarly the incidence of small for gestational age fetuses, 02 in 28 (7.1%) bacteriuric women and 34(6.1%) in 552 non bacteriuric women came out to be statistically insignificant. The relationship between infection, inflammation and placental dysfunction needs to be confirmed by larger trials.

Even covert bacteriuria can place the mother at risk of preterm labour, and prematurity[10,11,12,14] The mechanism of labour initiation although not clear, is said to be the release of proinflammatory cytokines secreted by maternal and fetal monocytes in response to bacterial products. In current study 6 out of 28 bacteriuric and 27 out of 552 non- bacteriuric women went into preterm labour ($p<0.05$), which is statistically significant.

Our study revealed that bacteriuria greatly increases the risk of symptomatic UTI (cystitis) as 4 patients (14.2%) developed symptomatic UTI.[19] The risk is small in early pregnancy but is 30-60% during third trimester when stasis and hydronephrosis is most pronounced[20] None of our patients developed pyelonephritis as they were given adequate antibiotic therapy. If left untreated 20-40% are likely to develop acute pyelonephritis[8,9].

CONCLUSION

Asymptomatic bacteriuria is a common infection during pregnancy and it greatly increases the risk of symptomatic UTI and preterm labour. Association of asymptomatic bacteriuria with anemia, PIH and small for gestational age fetuses was statistically insignificant. Further large scale studies are required to establish this association.

Screening with a single urine test could detect most cases of bacteriuria. There is a strong evidence to recommend that screening of bacteriuria should be a routine at antenatal clinics and appropriate treatment should be provided. Screening and treatment of bacteriuria is likely to be cost effective.

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CORRECTION

Article (Prof-839) titled: EVALUATION OF PARAOXONASE (PON) GLUTAMATE OXALOACETATETRANSAMINASE (SGOT) is withdrawn from publication which was published in "The Professional" Med. J. Dec 2005; 12(4): 426-430.