ORIGINAL ARTICLE

Asymptomatic Bacterurea in Pregnancy, its Prevalence among Asymtomatic Patient with more Thans 5 Pus Cell on Microscopy and its Obsterical Outcome in Early Vs Late Detected Group

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ABSTRACT

Background: Routine urine cultur in pregnancy is costly and may not practically possible on all pregnant patient in poor resource countries so if appropriate selection of patients after routine microscopy done it may reduce burden of diseases as well as cost effective.

Aim: To determin the prevalence, the most common causative organism and obstertircal outcome in term of pre-eclamptic toxaemia (PET), preterm labour and preterm premature rupture membrane (PPROM) and symptomatic urinary tract infection (UTI) in asymptomatic bacterurea in early verses late deteced group.

Place and Duration. This study was conducted in Divisional Headquarter Tertiary Care Teaching Hospital, Mirpur Azad Jamu Kashmir from Ist January 2017 to Ist January 2018.

Methodology: This is a prospective cohohrt study. Total 100 pregnant women were selected for urine culture having WBC >5 per high field on microscopic examination. 50 patients in early detected group (Group A) before 23 weeks of gestation verses late detected group (Group B) between 30 to 34 weeks gestation after exclusion criteria. Treatment given according to sensitivity report. They were followed till delievery and incidence of preterm, PPROM symptomatic UTI and PET were recorded in these two group.

Results: In early detected group asymptomatic bacterurea (ASB) was found in 7 out of 50 patients (14%) and no significant difference in incidence of preterm labour PPROM and PET in ASB positives verses ASB negative women. In second group it was found in 9 out of 50 (18%) cases with significant increase in preterm and PET PPROM inspite of giving treatment.

Conclusion: Prevalence of ASB is high. Early detection and treatment will reduce incidence of preterm labour, PPROM and PET with ASB positive women so it should be included in routine aninatal care for best fetomaternal outcome.

Keywords: Urinary tract infection, Asymptomatic bacterurea, Midstream urine for culture sensitivity, Preterm labour, Pyelonephrites, PET.

INTRODUCTION

Untreated bacteriuria during pregnancy is associated with adverse maternal and perinatal outcomes. It is financially effective to screen for bacteriuria if the prevalence rate is 2% or more. The prevalence rate in this study was 14% to 18%. There are number of anatomical and physiological changes in pregnancy responsible for ASB in pregnancy. ASB defind as presense of more than 10 power 5 micoorganism per ml of urine.[1] It is the most common bacterial infection in pregnancy. Its incidence is 2 to 3%[2,3].

Maternal and fetal complication like PTL, PET PPROM, symptomatic UTI, pyelonrphrites are the most common complication.[4] In addition postpartum endometrites is on other worst complication of it[5].

Although in developed countries screening for ASB in Ist trimester is standered of care and role of specific antimicrobial therapy is well established[6] but there is no such established result on role of antimicobial therapy in ASB in developing countries. There are reasonable evidence that ASB is wide spread in pakistan and our neghbouring country india[7,8,9,10,11].

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The antenatal urine culture routine for all pregnant women is expensive and not feasible in numerous parts of the developing world. Determination of mothers for screening with risk factors may diminish the necessity of urine culture for every pregnant women and may be utilized as an appropriate alternative strategy of management. Gestational diabetes, past urinary tract infection, multiparity, advanced maternal age, lower education level, advanced gestational age and lower financial status have been reported as a risk factors in some studies and conflicting results have been obtained from different studies[5,6].

METHODS

This cohort study was carried out in out-patient antinatal clinic in collabration with Urogynaecology OPD in DHQ Mirpur AJK. Asymptomatic patient till 23 week group A (n=50) and between 30 to 34 week in group B (n=50) were enrolled in this study after informed written consent. They were labelled as group A (Early detected group). ASB positve and ASB negative women. Group B (Late detected group), ASB positive and ASB negative women.

Pregnant ladies with history of symptomatic UTI, previous history of preterm labour, medical disorder and congential anomolies and twin, pregnancy, IUGR, PIH, PET recurrent UTI and diabetes were excluded from study. MSU were sent for culture sensitivity in patients having more than 5 pus cell on microscopy and tratment given in patient with

culture positve patient according to sensitivity report.After treatment culture was repeated if not clear give another 1 week therapy. They were followed till delievery and incidence of symptomatic bacterurea pyelonephrites, preeclamptic toxemia, preterm, PPROM and PET were recorded in both groups. Number of casese lost from folow up with AFB positve in both group dropped from study.

RESULTS

Asymptomatic bacterurea was found in 7 out of 50 patients (14%) in group A, no significant difference found regarding its complication in ASB positive and ASB negative women after treatment in group A. Fifteen out of 50 patients (30%) in group B were detected as ASB positive which is statistically not significant (p 0.40). Two patients from group A (4%) and one from group B (2%) were lost from follow up as ASB positive and excluded from study. Four out of 5 patients in Group A with positive AFB developed fetomaternal complication as compare to group B) (Table 1). In both groups 19 (19%) patients were developed complications. Seven (7%) patients out of 19 developed preterm labour with ruputure membrane, 4 developed PET in both groups, 3 (3%) developed symptomatic UTI, and 2 (2%) ptients were developed pyelonephrites (Table 2).

The most common causatve organism in both group were ecolli 60%, proties 10% klebsiella 10%, coliform 5%, citrobacter 5% and 10% staphlococcus aures and 60% sensitve to Augmentin 20% to imepenum, piperacellin tazobacteum cefotaxime and 20% to nitrofurantion.

Table 1: Association of asymptomatic bacterurea in both groups (n=100)

Group A		Group B	
%ve	-ve	+ve	-ve
7(14%)	43(86%)	15(30%)	35(70%)

P value 0.40

Table 2: Frequency of early detected complications vs late detected complications in both groups

Complications	Group A(n=48)		Group B (n=49)	
	n	%	n	%
Symptomatic UTI	1	2.0	2	2.0
Pyelonephritis	0	0	2	4.0
PET	1	2.0	3	6.0
PPROM	1	2.0	2	4.0
PTL	2	6.0	5	10.0

ED: Early detected; LD: Late detected; Neg: Negative; UTI: Urinary tract infection; PET: Pre-eclamptic toxaemia; PPROM: Preterm premature rupture membrane; PTL: Pre-term labour

DISCUSSION

A cost evaluation study reported that screening for pyelonephritis is appropriate when the prevalence of asymptomatic bacteriuria is more conspicuous than 2%. We saw 14% prevalence in this study in first two trimester and 30% in last trimester. So screening of each antenatal woman for asymptomatic bacteriuria by a quantitative urine culture is recommended.[12] E. colli were the most widely recognized pathogens (60%) related with asymptomatic bacteriuria in our study. Escherichia coli is reported to be the commonest by other researcher.[13,14] The risk of UTI from ecolli is moct common because of anatomical and functional changes that occur during pregnancy and these are the most common bacteria in vaginal and rectal area[13].

The treatment of asymptomatic bacteriuria has been seemed to decrease the rate of pyelonephritis preterm PET and PPROM in pregnancy and along these lines the screening for treatment of asymptomatic bacteriuria has transformed into a standard of obstetrical consideration.[15] When we compare our study to this study early detection has less complication with detection as compare to delayed detection inspite of giving treatment in second group.

Oral nitrofurantoin is a decent anti-microbial decision for treatment of pregnant ladies with asymptomatic bacteriuria and all strains confined in this fundamental examination demonstrated affectability to co amoxiclave piperacillin tazobactem, amikacin and nitrofurantoin. Despite the fact that ampicillin and oral cephalosporins are valuable and safe options with a lower occurrence of unfavorable impacts, a noteworthy number of secludes indicated protection from these anti-infection agents. Accordingly the anti-microbial affectability examples ought to be utilized in deciding treatment as improper treatment has been in charge of repeats of asymptomatic bacteriuria with advancement of intricacy later on[16]. The pregnant women with intense pyelonephritis may continue significant complications, augmentin is lso considered safe during pregnancy and my 7 out of 12 patients were sensitive to augmentin and only single course for 7 days able to erradicate bacteria. Villar et al, study highlighten obsteritical complications like preterm labor, ARDS, sepsis, stun and haematologic abnormalities in asymptomatic bacterurea[17]. It is important to screen every single pregnant woman for the presence of bacteriuria at first pre-birth visit, ideally in the first trimester and the individuals who are positive should be followed up solidly after treatment because as many as one third will encounter a recurrence.[18] After completion of about fourteen days treatment the urine culture is required to ensure response to treatment. If the urine culture and sensitivity report is positive so a recurrent course of antibiotics is recommended.[19] It is also advised that patients with atleast two episodes of bacteriuria are followed up every month to repeat cultures until delivery to ensure urine sterility in the pregnancy time period.

As far as obstetrical outcome concerned there was no significant diffence between AFB positive after getting treatment and AFB negative women in group A while in Group B. Five out of 14 patients develop preterm labour with ruputure membrane in 2 patients, 3 developed PET and 1 patient turned out into symptomatic UTI and 2 patients develop pyelonephrites inspite of giving treatment in AFB positive women in group B. Another study conducted in north India also showed three time more complication even after getting treatment in late detected group[20].

CONCLUSION

Prevalence of ASB is common in AJK. Although routine urine culture is gold standere in antinatal clinic for best fetomaternal outcome in developed counties but poor resource countries like Pakistan at least all women who showed pus cell more than 5 on microscopic in all three trimester should underwent for culture sensitivity to avoid

fetomaternal complication associated with UTI as delayed detection significantly effect fetomaternal outcome.

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