ORIGINAL RESEARCH

Assessment Of Risk Factors, Clinical Presentation And Management Of Ectopic Pregnancy

Chandersheikhar[1], Devinder Kumar[2*]

[1]Associate Professor, Department of Obstetrics & Gynaecology, Government Medical College, Rajouri, Jammu & Kashmir, India.
[*2]Assistant Professor, Department of Obstetrics & Gynaecology, Government Medical College, Rajouri, Jammu & Kashmir, India.

ABSTRACT
Background: To assess asymptomatic bacteriuria in pregnant women and treatment effect on outcome of pregnancy.
Materials and Methods: One hundred five pregnant women of age group 18 – 45 years were involved. Collection of clean catch, mid- stream urine sample was done. Urine routine and microscopy was done. Maternal and fetal outcomes was recorded.
Results: Significant bacteriuria was seen in 25, insignificant growth in 10 and negative in 70 cases. There were 10%, 6% and 0 pre- term, 81%, 90% and 100% term and 9%, 90% and 100% post- term birth in patients with significant bacteriuria, insignificant growth and negative bacteriuria. In significant bacteriuria patients, 86% patients had >2.5 kg weight and 14% had <2.5 kg weight. In insignificant growth patients, 91% had >2.5 kg weight and 9% had <2.5 kgs weight. 100% in negative growth patients had >2.5 kgs weight of babies. 91%, 93% and 100% patients had APGAR score between 9-10 at 1 minute and 95%, 99% and 100% had between 9-10 respectively. 10%, 5% and 0 required NICU admission respectively.
Conclusion: Significant bacteriuria was seen in 25 patients. Maximum were term and normal vaginal delivery. Maximum babies were with birth weight of >2.5 Kg and APGAR score of 9 and 10 was seen in patients with significant bacteriuria with minimum NICU admission.
Keywords: Significant bacteriuria, APGAR, NICU.

Corresponding Author: Dr Devinder Kumar, Assistant Professor, Department of Obstetrics & Gynaecology, Government Medical College, Rajouri, Jammu & Kashmir, India.
Email ID: dkkhajuria1981@gmail.com

INTRODUCTION

Asymptomatic bacteriuria refers to the presence of bacteria in urine. It is a condition in which urine culture reveals a significant growth of pathogens that is greater than 10^5 bacteria/ml, but without the patient showing symptoms of urinary tract infection (UTI).[1] This is common during pregnancy. The apparent reduction in immunity of pregnant women appears to encourage the growth of both commensal and non-commensal microorganisms.[2] The physiological increase in plasma volume during pregnancy decrease urine concentration and up to 70% pregnant women develop glucosurea, which encourages bacterial growth in the urine.[3]

Progesterone in pregnancy causes changes such as increased bladder volume, decrease in tone of ureter and bladder. Decrease in peristalsis of ureter causes mild hyderonephrosis and urinary stasis which is favourable for the growth of microorganisms causing Asymptomatic bacteriuria.[4] In the later trimesters as the gravid uterus enlarges it exerts pressure over the

urinary bladder leading to rise in intra vesicular pressure, vesico ureteral reflex and retention of urine which provides suitable medium for the growth of bacteria.[5]

Maternal and foetal complications attributed to it are symptomatic urinary tract infection (UTI), pyelonephritis, preeclamptic toxaemia (PET), anaemia, low birth weight (LBW), intrauterine growth retardation (IUGR), preterm labour (PTL), preterm premature rupture of membrane (PPROM) and post-partum endometritis.[6,7] We performed this study to assess asymptomatic bacteriuria in pregnant women and treatment effect on outcome of pregnancy.

MATERIALS & METHODS

We selected one hundred five pregnant women of age group 18 – 45 years. Ethical approval from ethical review committee was obtained. Patients' consent was obtained before starting the study.

Data such as name, age, gender etc. was recorded. Parameters such as SES class, obstetric score, gestational age was recorded. A complete general, systemic and obstetric examination was done. Collection of clean catch, mid- stream urine sample in the sterile wide mouthed leak proof container with lid was done and the sample was transported to the microbiology department immediately and processed. Urine routine and Urine C/S was done. Urine routine and microscopy was done to look for urine albumin, sugar, pus cells, epithelial cells and casts. Urine culture is proceeded by a standard loop method where a loop of sample is streaked over the culture media (MacConkey and Blood agar) and incubated at 37^0C for 24 hours. Maternal and fetal outcomes was recorded. The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

RESULTS

Table I Distribution of urine culture sensitivity

Parameters	Number	P value
Significant bacteriuria	25	0.01
Insignificant growth	10	
Negative	70	

Significant bacteriuria was seen in 25, insignificant growth in 10 and negative in 70 cases. The difference was significant (P< 0.05) (Table I).

Table II Association between Maternal outcome and Bacteriuria

Parameters	Variables	Significant bacteriuria	Insignificant growth	Negative	P value
Gestational age	Pre- term	10%	6%	0	0.81
	Term	81%	90%	100%	
	Post- term	9%	4%	0	
Type of delivery	NVD	50%	57%	52%	0.45
	Elective LCS	23%	32%	0	
	Emergency LCS	27%	11%	48%	

There were 10%, 6% and 0 pre- term, 81%, 90% and 100% term and 9%, 90% and 100% post-term birth in patients with significant bacteriuria, insignificant growth and negative bacteriuria. The difference was non- significant (P>0.05) (Table II).

Table III Association between Perinatal outcome and Bacteriuria

Parameters	Variables	Significant bacteriuria	Insignificant growth	Negative	P value
Birth weight	<2.5 kg	14%	9%	0	0.87
	>2.5 kg	86%	91%	100%	
APGAR Score 1 Minute	7-8	9%	7%	0	0.52
	9-10	91%	93%	100%	
APGAR Score 5 Minutes	7-8	5%	1%	0	0.76
	9-10	95%	99%	100%	
NICU admission	Yes	10%	5%	0	0.92
	No	90%	95%	100%	

In significant bacteriuria patients, 86% patients had >2.5 kg weight and 14% had <2.5 kg weight. In insignificant growth patients, 91% had >2.5 kg weight and 9% had <2.5 kgs weight. 100% in negative growth patients had >2.5 kgs weight of babies. 91%, 93% and 100% patients had APGAR score between 9-10 at 1 minute and 95%, 99% and 100% had between 9-10 respectively. 10%, 5% and 0 required NICU admission respectively. The difference was non-significant (P>0.05) (Table III).

DISCUSSION

Urinary tract is next to respiratory tract in females for acquiring infections. Pregnant women are affected twice as compared to non- pregnant women in acquiring urinary tract infections because of the anatomical and physiological changes occurring in pregnancy.[8,9] Urinary tract infections may be associated with symptoms or without symptoms.[10,11] In females, urethra is short and located close to the anal canal due to which it can be easily contaminated with fecal microorganisms and thereby increase the chance of urinary tract infections.[12,13] We performed this study to assess asymptomatic bacteriuria in pregnant women and treatment effect on outcome of pregnancy.

Our results showed that Significant bacteriuria was seen in 25, insignificant growth in 10 and negative in 70 cases. Jain et al[14] determined presence of asymptomatic bacteriuria (ASB) and obstetric outcome following treatment in early versus late pregnancy. Pregnant women till 20 weeks (n=371) and between 32 to 34 weeks gestation (n=274) having no urinary complaints were included. Their mid- stream urine sample was sent for culture and sensitivity. Women having $> 10^5$ colony forming units/ml of single organism were diagnosed positive for ASB and treated. ASB was found in 17 per cent pregnant women till 20 week and in 16 per cent between 32 to 34 weeks gestation. Increased incidence of preeclamptic toxaemia (PET), preterm premature rupture of membrane (PPROM), preterm labour (PTL), intrauterine growth restriction (IUGR), low birth weight (LBW) was seen in late detected women (32-34 weeks) as compared to ASB negative women, whereas no significant difference was seen in early detected women (till 20 weeks) as compared to ASB negative women.

We observed that there were 10%, 6% and 0 pre- term, 81%, 90% and 100% term and 9%, 90% and 100% post- term birth in patients with significant bacteriuria, insignificant growth and negative bacteriuria. Imade et al[15] determined the prevalence of asymptomatic bacteriuria in pregnant women. A total of 1,228 pregnant women were recruited for this study. A total of 556 (45.3%) were positive for significant bacteriuria. There was a significant difference in the prevalence of asymptomatic bacteriuria with respect to age. Trimester did not show any significant difference in the prevalence of asymptomatic bacteriuria. Escherichia coli was the most predominant organism followed closely by Staphylococcus aureus. Ciprofloxacin, Ceftriaxone and Augmentin were found to be the most effective antibiotics against the urinary isolates.

In significant bacteriuria patients, 86% patients had >2.5 kg weight and 14% had <2.5 kg weight. In insignificant growth patients, 91% had >2.5 kg weight and 9% had <2.5 kgs weight. 100% in negative growth patients had >2.5 kgs weight of babies. 91%, 93% and 100% patients had APGAR score between 9-10 at 1 minute and 95%, 99% and 100% had between 9-10 respectively. 10%, 5% and 0 required NICU admission respectively. Neelima et al[16] studied the effect of asymptomatic bacteriuria on pregnancy outcome and to find the most common organism responsible for asymptomatic bacteriuria in pregnant women. A total of 85 pregnant women were included. The prevalence of ASB in pregnancy was 24.7%. 61.9% were in age group of 18-25 years and 42.9% were 2nd gravida. 85.7% were in 3rd trimester. Of the ASB cases 90.5% had term babies and 85.7% had babies with birth weight of >2.5 Kg.

CONCLUSION
Significant bacteriuria was seen in 25 patients. Maximum were term and normal vaginal delivery. Maximum babies were with birth weight of >2.5 Kg and APGAR score of 9 and 10 was seen in patients with significant bacteriuria with minimum NICU admission.

REFERENCES
1. Bandyopadhyay S, Thakur JS, Ray P, Kumar R. High prevalence of bacteriuria in pregnancy and its screening methods in north India. J Indian Med Assoc 2005; 103: 259- 62.
2. Lavanya SV, Jogalakshmi D. Asymptomatic bacteriuria in antenatal women. Indian J Med Microbiol 2002; 20: 105-6.
3. Khattak MA, Khattak S, Khan H, Ashiq B, Mohammed D, Rafiq M. Prevalence of asymptomatic bacteriuria in pregnant women. Pak J Med Sci 2006; 22: 162-6.
4. Ullah AM, Barman A, Siddique MA, Haque AKME. Prevalence of asymptomatic bacteriuria and its consequences in pregnancy in a rural community of Bangladesh. Bangladesh Med Res Counc Bull 2007; 33: 60-4.
5. Kutlay S, Kutlay B, Karaahmetoglu O, Ak C, Erkaya S. Prevalence, detection and treatment of asymptomatic bacteriuria in a Turkish obstetric population. J Reprod Med 2003; 48: 627-30.
6. Radha S, Nambisan B, Prabhakaran NK, Jamal S. Prevalence and outcome of asymptomatic bacteriuria in early pregnancy. Int J Reprod Contracept Obstet Gynecol. 2017;6(1):223–7.
7. Oladeinde BH, Omoregie R, Oladeinde OB. Asymptomatic Urinary tract infection among Pregnant Women Receiving Ante-natal Care in a Traditional Birth Home in Benin City, Nigeria. Ethiop J Health Sci. 2015;25(1):3–8.
8. Tahir S, Tayyab M, Rasul S, Jabeen S, Gul A. Prevalence of Asymptomatic Bacteriuria, Associated Risk Factors and Adverse Fetomaternal Outcome among Antenatal women attending a tertiary care hospital. Pak J Med Health Sci. 2015;9(4):1399–402.

9. Babu BGH, Moinuddin SK, Vinosha, Deb A. Asymptomatic bacteriuria among pregnant women attending tertiary care teaching hospital. Indian J Obstet Gynaecol Res. 2018;5(1):68–71.

10. Tadesse S, Kahsay T, Adhanom G, Kahsu G, Legese H, Wahid A, et al. Prevalence, antimicrobial susceptibility profile and predictors of asymptomatic bacteriuria among pregnant women in Adigrat General Hospital, Northern Ethiopia. BMC Res Notes. 2018;11(1):740.

11. Rao VM, Venkatesh BM, Rao SR. Asymptomatic Bacteriuria in Pregnant Women- Study at a Tertiary Maternity care Hospital in Hyderabad, India. Int J Curr Microbiol App Sci. 2018;7(5):1133–42.

12. Kulkarni SR, Peerapur BV, Sailesh KS. Isolation and Antibiotic Susceptibility Pattern of Escherichia coli from Urinary Tract Infections in a Tertiary Care Hospital of North Eastern Karnataka. J Nat Sci Biol Med. 2017;8(2):176–80.

13. Jennifer P, Cyril R, Piyumi P, Nimesha G, Renuka J. Aymptomatic Bacteriuria in Pregnancy: Prevalence, Risk factors and Causative Organisms. Sri Lankan J Inf Dis. 2012;1(2):42–6.

14. Jain V, Das V, Agarwal A, Pandey A. Asymptomatic bacteriuria & obstetric outcome following treatment in early versus late pregnancy in north Indian women. The Indian journal of medical research. 2013 Apr;137(4):753.

15. Imade PE, Izekor PE, Eghafona NO, Enabulele OI, Ophori E. Asymptomatic bacteriuria among pregnant women. North American journal of medical sciences. 2010 Jun;2(6):263.

16. Neelima N, Gopalan U, Jayakumar K. Asymptomatic bacteriuria in South Indian pregnant women and treatment effect on outcome of pregnancy. Indian J Obstet Gynecol Res 2021;8(3):314-322.