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ASYMPTOMATIC BACTERIURIA;

ASYMPTOMATIC BACTERIURIA DURING PREGNANCY AT HOLY FAMILY HOSPITAL, RAWALPINDI.

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ABSTRACT… Objectives: To record the rate of asymptomatic bacteriuria in pregnant females. **Period:** November 2015 to February 2016. **Settings:** Holy Family Hospital, Rawalpindi. **Material & Methods:** 200 pregnant females for regular pre-natal visits during 2nd and 3rd trimester of pregnancy between 18-50 years of age were included. Sterile bottles were used to collect the urine sample from the patients and sent to the hospital laboratory for the evaluation of asymptomatic bacteriuria in pregnant females. **Results:** We recorded most of the cases between 18-30 years of age i.e. 56%(n=112) whereas 44%(n=88) were between 31-50 years of age, mean+sd: 28.76+5.42 years. Frequency of asymptomatic bacteriuria was recorded in 22%(n=44). We found 21(23.86%) out of 88 cases had lower class, 15(23.44%) out of 64 cases had middle class, 7(17.95%) out of 39 cases had upper middle class while 1(11.11%) out of 9 cases had higher class. **Conclusion:** Asymptomatic bacteriuria is not an uncommon complication during pregnancy, however, regular screening may help to prevent and reduce this morbidity at early stage.

Key words: Pregnant Females, Asymptomatic Bacteriuria, Staphylococcus Aureus.

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INTRODUCTION

The occurrence of bacteria in urine is known as bacteriuria. Usually, upper urethra is a commonly affected with infection in urinary tract, however, the whole system may be infected due to bacteria, if any part of the tract is infected.[1]

It is widely believed that $>10^5$/mL colony forming units in urine is bacteriuria in either case of symptomatic/asymptomatic.[2] Absence of any symptoms/signs of urinary tract infection (UTI) and positive lab investigations is called as asymptomatic bacteriuria. Pregnant females are commonly present with this morbidity, it may cause significant complications including acute cystitis and pyelonephritis if not treated well-in-time.[3] The prognosis of pyelonephritis may be life threatening for both fetus and the mother due to development of anemia, pre-eclampsia, thrombocytopenia, pregnancy induced hypertension, preterm delivery, transient renal insufficiency, and low birth weight.[4]

Due to decreased immunity in pregnancy, the growth of microorgansisms (commercial/non-commercial) is encouraged.[5] Various changes during pregnancy takes place in human's body. Mechanical and hormonal changes escalate the chance of vesicoureteral reflux and urinary stasis. These changes are responsible for the development of urinary tract infection. Majority of pregnant population is suffering with this harmful infection.[6]

We reviewed a number of reports regarding the rate of asymptomatic bacteriuria in pregnant females and its effect on immunity.[7] These reports are showing a wide range of incidence of this disease. However, we intend to record the frequency of this morbidity in our population so that current magnitude of asymptomatic bacteriuria in pregnant females coming to our department may be recorded for further necessary steps for its prevention and management.

METHODOLOGY

In this study, we enrolled 200 pregnant females coming for regular pre-natal visits during 2nd and

3rd trimester of pregnancy, between 18-50 years of age. We excluded all those cases already diagnosed with UTI and taking under treatment of this morbidity. Additionally, all females having symptoms of dysuria, urgency, or frequency etc, history of renal disease and PIH were also not the part of this research. Sterile bottles were used to collect the urine sample from the patients. The timing of collection of this sample was 'morning' and sent to the hospital laboratory for its evaluation. Final report from the hospital laboratory was collected to record the presence of asymptomatic bacteriuria (presence of $>1x10^5$ colony forming unit (CFU) per milliliter of one organism without fever or symptoms of UTI). in pregnant females. We used statistical analysis tools like SPSS for data analysis.

RESULTS

We recorded most of the cases between 18-30 years of age i.e. 56% (n=112) whereas 44%(n=88) were between 31-50 years of age, mean+sd: 28.76+5.42 years. (Figure-1)

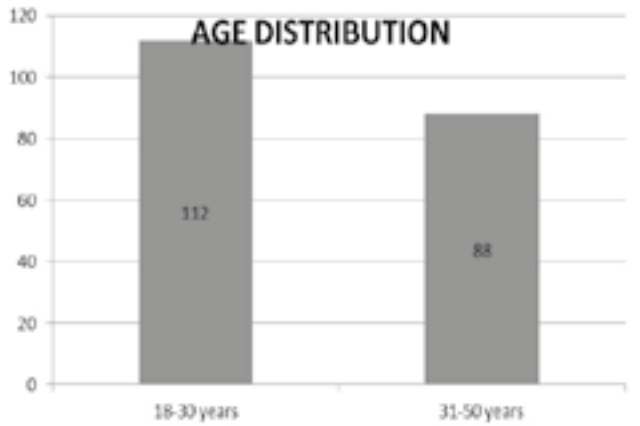

Figure-1

Frequency of asymptomatic bacteriuria was recorded in 22% (n=44) whereas 78%(n=156) had no findings of the morbidity. (Figure-2)

We classified the occurrence of asymptomatic bacteriuria in pregnant females according to their socioeconomic class, it reveals that 21(23.86%) out of 88 cases had lower class, 15(23.44%) out of 64 cases had middle class, 7(17.95%) out of 39 cases had upper middle class while 1(11.11%) out of 9 cases had higher class. (Table-I)

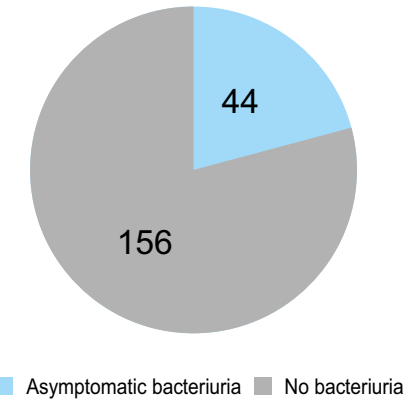

Figure-2. Frequency of asymptomatic bacteriuria

Socioeconomic class	No. of patients	Asymptomatic bacteriuria(%)
Lower class (<15,000/-) per month	88	21(23.86%)
Middle class (15-30,000/-) per month	64	15(23.44%)
Upper middle class (30-70,000/-) per month	39	7(17.95)
Higher class (>70,000/-) per month	9	1(11.11%)
Total	200	44

Table-I. Stratification of asymptomatic bacteriuria according to socioeconomic class of the patients

The spectrum of urinary pathogens isolated from urine samples of pregnant women is detailed in Table-II, where Escherichia coli was the most common organism i.e. 37.

Socioeconomic class	No. of patients	%
Escherichia coli	74	37
Enterobacter spp.	43	21. 5
Staph. Saprophyticus	40	20
Streptococcus agalactiae	21	10. 5
Staph. Aureus	14	7
Candida albicans	8	4
Total	200	100

Table-II. Spectrum of urinary pathogens isolated from urine samples of pregnant women

DISCUSISON

This study estimated 22%(n=44) out of 200 cases with asymptomatic bacteriuria, which is in agreement with Onuorah Samuel et al[8] in 2016 who recorded 25% positive cases of

asymptomatic bacteriuria unlike Sudha Biradar Kerure and co-workers[9] who recorded only 9% of the cases with this morbidity, the reason of this significant difference is unknown, however, it justifies the need of this study.

Some-other studies estimated this issue between 2% to 10% of pregnancies.[10] It has been recorded as 1.7%, 30%, 9.9%,3.3-6.1% and 4.8% in Saudi Arbia, Yamen, Qatar and Iran respectively while another study recorded it as higher as 78.7% in Nigerian[11] population.

We found most of the cases between 18-30 years of age similar to Onuorah Samuel,[8] it was further confirmed by Ahmad et al in Kashmiri population.[12] Contrary to the above, a study by Bloomberg et al[13] estimated higher prevalence between 31-35 years of age.

Though, we did not estimate the prevalence according to trimester, however, we did not find any significant difference between trimester, which is supported by earlier studies.[14-15]

In accordance with other studies Escherichia Coli was the commonest type of microorganism found in 37% of the cases, it was in agreement with previous trials.[16-17]

Most importantly, our study found lower and middle class affected with asymptomatic bacteriuria which is comparable with Atlas and others who reveal that sex habit, lower socio-economic class and personal hygiene may affect the rate of asymptomatic bacteriuria.

This review is evident that the frequency of asymptomatic bacteriuria is not uncommon in our population while lower socioeconomic status is more prone to develop this complication. However, we emphasize the screening of each pregnant women for prevention of asymptomatic baceriuria.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Anam Zulfiqar	Data collection	
2	Sadaf Zulfiqar	Data analysis and article writing	
3	Shahana Rahat	Review and writing of paper	