Al-Azhar International Medical Journal

Volume 4 | Issue 8 Article 31

2023

Section: Obstetrics and Gynecology

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How to Cite This Article

Ibrahim, Ahmed Ali; Zakria, Abd El Moneam Mohamed; Monaem, Mekky Abd El; and Saeed, Ahmed Mohamed (2023) "Correlation between Asymptomatic Bacteriuria and Preterm Labo," *Al-Azhar International Medical Journal*: Vol. 4: Iss. 8, Article 31.
DOI: https://doi.org/10.58675/2682-339X.1949

ORIGINAL ARTICLE

Correlation Between Asymptomatic Bacteriuria and Preterm Labor

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Abstract

Background: **Women are more likely than men to experience urinary tract infections because of their shorter urethral, close closeness to the vagina, and easier access to germs through sexual intercourse. According to their physiological and anatomical position, elevated sex hormones during pregnancy, and other factors, pregnant women are more likely to develop symptomatic and asymptomatic urinary tract infections.**

Aim: **The goal of the research is to estimate the prevalence of asymptomatic bacteriuria (ASB) and the hazard of premature labor in pregnant women with ASB.**

Patients and methods: **100 pregnant women between the ages of 20 and 40 who were enrolled in the antenatal clinic and who met the inclusion criteria were included in the case-control prospective study. They were chosen through the El Hussein University Hospital's Obstetrics and Gynecology Department, and the study will last for 6 months (July 1, 2020−January 1, 2021).**

Results: **Regarding the analyzed patients' demographic traits. The groups did not differ significantly in terms of maternal age, BMI, or parity. Regarding the examined laboratory parameters, there is no discernible difference between the three groups under investigation. ASB was more common in group A than in group B, although there was no statistically significant difference between the two groups. The most common organisms were *E. coli* and *K. pneumonia*.**

Conclusion: **A common infection in pregnancy called ASB increases the risks of harmful outcomes for both the mother and the fetus. As a result, pregnant women should undergo a bacteriuria screening and receive the proper antibiotic treatment.**

Keywords: Asymptomatic bacteriuria, Preterm labor

1. Introduction

Women are more likely than men to experience urinary tract infections because of their shorter urethral, close closeness to the vagina, and easier access to germs through sexual intercourse. Owing to their anatomical and physiological position, elevated sex hormones during pregnancy, and other factors, pregnant women are more likely to develop symptomatic and asymptomatic urinary tract infections.[1]

Asymptomatic bacteriuria (ASB) in pregnancy is characterized by the presence of more than one million microorganisms per millilitre (ml) of urine collected from a clean catch midstream urinary sample with no signs relevant to the genito-urinary tracts.[2]

Pregnancy-related profound physiologic and anatomical alterations in the urinary system raise the possibility of infection.[3]

Pregnancy complications such as high blood pressure, preeclampsia, intrauterine growth restrictions, low birth weight, postpartum endometritis, septicemia, and perinatal mortality can result from ASB.[4]

A reasonably higher incidence of urinary tract infections, particularly silent bacteriuria, could be

Accepted 30 January 2023.
Available online 8 December 2023

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https://doi.org/10.58675/2682-339X.1949

avoided due to its serious implications with earlier screening during pregnancy. The ideal window of time for detecting ASB in urinary samples is between 12 and 16 weeks of pregnancy.[5]

Before 1962, whenever Kass noticed an elevated risk of lower birth weight amongst untreated bacteriuria women, it was uncertain that ASB and premature delivery (<37 completed weeks) and that ASB and low birth weight (<2500 gm) were related.[6]

In untreated bacteriuric women, the average gestational period was observed to be shorter by a mean of one week. Antibiotic medication has been proven to dramatically lower the risk of ASB in pregnant women having premature birth.[7]

The purpose of the research is to determine the incidence of ASB and the probability of premature labor in pregnant women with ASB.

2. Patients and methods

100 pregnant women between the ages of 20 and 40 who were enrolled in the antenatal care and fulfilled the inclusion criteria participated in the case-control prospective study. They were chosen through the El Hussein University Hospital's Obstetrics and Gynecology Department, and the research lasted for six months (from July 1, 2020 to January 1, 2021). 100 women in total, 50 women in each of the two classes comprised of cases and controls. 50 pregnant women in the first group (control group) were between 37 and 40 weeks along. 50 women in the second group (patients group), who were between 24 and 37 weeks along, had premature labor symptoms or signs.

2.1. Inclusion criteria

Age between 20 and 40 years old, primigravida or multipara, singleton pregnancy.

2.2. Exclusion criteria

Women who have experienced a recent urinary tracts infections (UTI) or who have any clinical manifestation of a UTI (such as frequent urination, burning urination, loin pain, etc.), women who are currently receiving antimicrobial treatment, and women who have rupture of the membrane.

Criteria for diagnosis of preterm labor: Preterm labor is typically characterized by consistent contracts and cervical abnormalities that start at a gestational age of fewer than 37 weeks. Not just uterine contractions are a sign of an upcoming preterm delivery. Rupture of the membranes, backaches, pelvis discomfort, vaginal discharging, frequent urination, or diarrhoea are common symptoms in women. Unplanned premature labor is diagnosed with an effaced or dilated cervix.

2.3. Methods

The aforementioned procedures were performed on all patient women.

2.4. Full history taking

Age, place of residence, socioeconomic background, occupation, and any unusual behaviors that may be important medically. Symptom (dysuria, recurrence of micturition's, suprapubic, and loins pain). present history, obstetric history (previous deliveries, abortions, and their outcome), menstrual History (Menarche, if it is normal or not -LMP (if dependable (certain time with regular periods not preceded by hormonal contraceptives for 3 months) or not - EDD), previous experiences (systemic disorders, past history of UTI, recently antibiotics intake, Diabetes mellitus (DM), drugs allergies and past surgeries).

2.5. Physical examination

General evaluation: vital signs, including temperatures, blood pressures, and pulse (to rule out instances of acute pyelonephritis). An assessment of the abdomen is performed, and the loins and urinary angles are felt for any discomfort, edema, or rigidity. Examination of the ovaries for the assessment of (fundal levels single or multifetal pregnancy-existence of uterine contractions - amounts of liquor-estimated fetal weight -presentations and positions of fetus). Vaginal examinations for the purpose of assessing cervical dilation and efficiency during premature labor (it would be performed by sterile gloves and under completely aseptic conditions).

2.6. Investigations

Ultrasonography: to determine gestational age, evaluate alcohol and the placenta, rule out any severe fetal abnormalities, and gauge the health of the fetus using the following criteria Fetal biometry: comprising head circumferences, estimated fetal weight, belly circumferences, and femur lengths.

Biophysical profile (BPP): Fetal respiration, tones, movements, heart rate, and amniotic fluids volume abdominal arteries.

Doppler ultrasound: Umbilical and intermediate cerebral blood flows evaluation.

2.7. Bacteriological examination of urine

The participants undergo enough instruction about how to collect clean midstream urine. Approximately 10 ml of the midstream urine was gathered into the sterilized universal containers that had been handed to them after the vulva had initially been cleaned with flowing water and the first portion of the urinary had been discharged.

2.8. Follow-up

After 1 week, all research subjects were asked to return to check the microbiological cultured findings. Participants who had had a positive culture results were called to schedule follow-up appointments. Urine cultures that revealed substantial bacteriuria were treated according to the sensitivity pattern. After finishing a 10-day treatment of the proper antibiotics, they were reassessed with a repeated urine sample to check for the absence of bacteriuria. They were then monitored with monthly urinal cultures and microscopy until delivering.

2.9. Statistical methods

Results were recorded using MedCalc version 15.8 (MedCalc Software bvba, Ostend, Belgium) and IBM SPSS Statistics version 23 (IBM Corp., Armonk, NY, USA). Categorical data were reported as numbers and percentages, while numerical values were provided as mean ± SD. Statistical significance was defined as *P* values less than 0.05.

3. Results

Table 1.

This table shows that there is no significant difference between the groups regarding maternal age, BMI, and parity Table 2.

Table 3. Incidence of ASB between the two studied groups.

	Group A ($n = 50$)	Group B ($n = 50$)	χ^2	*P*
Positive bacteriuria	7 (14%)	4 (8%)	0.919	0.338
Negative bacteriuria	43 (86%)	46 (92%)		

Table 4. Distribution of organisms isolated from cases with ASB between the two studied groups.

Organism	Group A ($n = 50$) *N* (%)	Group B ($n = 50$) *N* (%)	*P*
Negative bacteriuria	43 (86%)	46 (92%)	0.338
Escherichia coli (E. coli)	3 (6%)	1 (2%)	0.309
Enterococcus	1 (2%)	1 (2%)	1
Klebsiella pneumonia	2 (4%)	1 (2%)	0.558
Proteus	1 (2%)	0	0.317
Staph aureus	0	1 (2%)	0.317

Table 5. Outcome distribution between the two studied groups.

	Group A ($n = 50$)	Group B ($n = 50$)	χ^2	*P*
UTI	2 (4%)	1 (2%)	0.344	0.558
Pyelonephritis	1 (2%)	0	1.01	0.317
Anemia	12 (24%)	9 (18%)	0.543	0.461
Pre-eclamptic toxemia	7 (14%)	1 (2%)	**4.9**	**0.027**
PPROM	9 (18%)	2 (4%)	**5**	**0.025**
Preterm labor	8 (16%)	2 (4%)	**4**	**0.045**
IUGR	7 (14%)	2 (4%)	3.1	0.081
Low birthweight	5 (10%)	3 (6%)	0.544	0.461
Neonatal septicemia	7 (14%)	1 (2%)	**4.9**	**0.027**

Table 1. Demographic characteristics among the studied groups.

	Group A ($n = 50$)	Group B ($n = 50$)	t/χ^2	*P*
Age (years) Mean ± SD	27.33 ± 4.28	25.77 ± 4.54	0.821	0.414
BMI (k^2) Mean ± SD	28.4 ± 4.1	27.53 ± 3.31	1.17	0.246
Parity				
Primi	33 (66%)	36 (72%)	0.421	0.517
Multi	17 (34%)	14 (28%)		

Table 2. Laboratory parameters between the two studied groups.

	Group A ($n = 50$) Mean ± SD/Median (Range)	Group B ($n = 50$) Mean ± SD/Median (Range)	*t*	*P*
Hb (g/dL)	11.49 ± 1.21	11.68 ± 1.17	0.798	0.427
TLC (x 10^3/L)	8.15 ± 2.32	8.41 ± 2.53	0.536	0.594
PLT (x 10^3/L)	287.54 ± 50.76	292.31 ± 45.14	0.496	0.621
ALT (U/L)	27.22 ± 9.34	26.31 ± 7.76	0.565	0.574
AST (U/L)	24.37 ± 7.85	23.47 ± 8.33	0.556	0.560
RBS (mg/dl)	137.75 ± 25.41	139.63 ± 26.88	0.359	0.720
Creatinine (mg/dl)	0.77 (0.7–1.2)	0.78 (0.7–1.1)	346	0.452
Urea (mg/dL)	13.25 ± 3.83	12.47 ± 3.6	1.05	0.297
INR	1.03 ± 0.076	1.05 ± 0.085	1.24	0.218

There is no significant difference between the three studied groups regarding studied laboratory parameters Table 3.

This table shows that incidence of ASB was higher in group A compared with group B but without statistically significant difference Table 4.

This table shows that *E. coli* followed by K. pneumonia were the most prevalent organisms. Moreover, prevalence of difference organism was comparable in both groups Table 5.

There is a significant difference between the groups in term of preeclamptic toxemia, PPROM, preterm labor, and neonatal septicemia.

4. Discussion

ASB in pregnant women is characterized as having less than greater than or equal to 100 000 organisms/ml of urine collected from a clear catcher mid-stream urinary specimens with no symptoms related to the genito-urinary tracts. Furthermore, problems such pyelonephritis, premature labor, lower birth weight fetuses, maternal sepsis, anemia, and fetal death frequently have ASB as their principal reasons. Because treating ASB has been demonstrated to lower the incidence of pyelonephritis in late stages of pregnancy, routine ABU diagnosis and treatments have become a standard of obstetrical therapy. The bacterial infiltration and consequent multiplications on all or part of the renal system are known as UTI Wingert and colleagues.[8]

Several physiologic abnormalities in a woman's body occur during pregnancy. ASB is caused by a number of anatomical and physiological alterations, including superior and anterior displacements of the bladders and enlargement of the ureters and renal pelvis as earlier as the ninth week of pregnancy. Progesterone's ability to relaxed smoothly muscles could also be important. Smooth muscles relaxations causes the ureters' peristalsis to slow down, which increases bladder capacity and causes urine stasis Nteziyaremye and colleagues.[9]

For an integrative manner to safely motherhood and neonatal healthcare, screenings and treatments for ASB are now required as part of standard antenatal care. Pregnancy frequently results in bacteriuria, usually in the earlier stages. ASB during pregnancy can increase the risk of developing a symptomatic UTI by up to 30–40%. Pregnancy increases the risk of pyelonephritis because of the relaxing of the smooth muscles and consequent ureteral dilatations, which is hypothesized to aid the ascent of germs from the bladders to the kidneys Azami and colleagues.[10]

Preterm labor, preeclampsia, hypertensions, pyelonephritis, anemia, amnionitis, lower birth weight, newborn fatalities (stillbirths), bacteremia, and toxic septicemia can all occur as a consequence of bacteremia in pregnant without antibiotic therapy. The probability of problems is decreased by therapy for bacteriuria throughout gestation. Hence, initial detection and therapy of bacteriuria in pregnant women are required to avoid its consequences Banda and colleagues.[11]

The primary objective of this research was to determine the incidence and risks of premature labor in pregnant women having ASB. 100 pregnant women between the ages of 20 and 40 who were enrolled in the antenatal care and fulfilled the inclusion criteria were recruited for the case-control prospective trial. Participants were chosen through the El Hussein University Hospital's Obstetrics and Gynecology Department, and the research lasted for six months (from July 1, 2020 to January 1, 2021).

4.1. The main results of this study were as following

Regarding the analyzed patients' demographical traits. The groups did not differ significantly in terms of maternal age, BMI, or parity.

Our results were in agreement with study of Lallar and colleagues[12] as they reported that In the patients, 50% of the pregnant women were between the ages of 25 and 29. The bulk (67.5%) of participants in the control group were also aged 25–29 years. In the instances, 46% of participants were between the ages of 30 and 34; 3% were between the ages of 20 and 24; and 1% were between the ages of 35 and 39. Participants in the control group made up 25.5% of the population in the 30–34 years age range, 0.5% in the 20–24 years age range, and 6.5% in the 35–39 years age range. Therefore, the average age in the patients group was 29.2 ± 2.6 years, whereas it was 28.9 ± 2.7 years in the control group. The age distribution of the two groups did not differ significantly from one another ($P = 0.250$).

Similarly, Gehani and colleagues[13] demonstrated that the members in both groups shared the same general trends.

Due to the small urethra in women, which is readily infected by germs from the digestive tracts, UTI are a common bacterial illness in women. Due to anatomical and physiological changes during pregnancy that create an environment that is favorable for bacterial growth, pregnant women are more likely to develop urinary tracts infections. Progesterone causes smooth muscles relaxations, ureter and renal pelvic dilating, particularly in the

right due to pressure from the growing, dextro-rotated uterus. In additional to the urine's relatively stasis from the ureters' slowed peristalsis, pregnancy-related glycosuria and a general loss in immunology are also present Glaser and Schaeffer.[14]

Women who have a UTI can display signs or may not. Pregnancy-related asymptomatic bacteriuria (ASBP) is characterized as the bacteria present in urination with quantitative values of 105 colony-forming units/mL but no indications of a urinary tracts infection. The incidence of ASBP is thought to range from 2 to 11% worldwide, however greater levels have been noted in Uganda. Diabetic women, gestational DM, lower socioeconomic level, and a history of UTI are more likely to develop ASBP. Patients with ASBP are more likely to experience negative maternal effects, including such pyelonephritis, which has a 30–40% frequency and can result in negative fetal consequences like preterm birth and lower birth weight Ayoyi and colleagues.[15]

The present study showed that incidence of ASB was higher in group A compared with group B but without statistically significant difference.

Our results were supported by study of Zaman and colleagues[16] as they reported that 3 (2.3%) patients and 2 (1.5%) controls had ASB (OR = 1.512, 95% CI: 0.248, 9.199).

In the study of Aleem and colleagues[17] ASB was common in 27.83% of premature labor patients.

According to Farzaneh and colleagues[4] ASB was present in 33 (84.6%) of premature births and 6 (15.4%) of premature births. There was a considerable increase in the incidence of ASB in preterm laboring women. It exceeded the group of pregnant women, and a statistically significant distinction between the groups was seen (P value = 0.0001; odds ratio = 7.38).

Omani-Samani and colleagues[18] stated that between 2% and 7% of expectant mothers experience ASB, based on race and socioeconomical status differences. Sickle cell anemia was most common in African American women, and it was least common in white, affluent women. Risk factors for the majority of pathogenic bacteria include a background of prior urinary infections, DM, paternity, and lower socioeconomic position. It happens in the early stages of pregnancy and roughly one-quarter of instances are discovered in the second and third months.

Furthermore, El-Sokkary[19] demonstrated that ASB was more common in people with preterm uterine contractions than in people who had no history of them, with incidence rates of 23.5% and 16.9%, correspondingly. There was found to be a significantly substantial link between moms' ASB and premature labor.

In addition, Kamel and colleagues[20] revealed that there was no discernible distinction between the two groups when it came to the incidence of ASB among future pregnancies at the obstetric emergency unit of El-Galaa Teaching Hospital: 5% in patients with premature labor and 2.5% in patients with term births.

The prevalence of ASB 6.1%, 7.5%, 9.8%, among antenatal women was reported by Ahmad and colleagues[21] in Kashmir, India, Saraswathi and Aljabri[22] in Hyderabad, India, Marahatta and colleagues[23] in Kathmandu, Nepal, respectively.

However higher prevalence of ASB 11.2, 13.7, and 16, 16.1, 21, 29.1, 38.3, and 45.3%, was revealed by Chitralekha and colleagues[24] in Chennai, India, Saeed and Tariq[25] in Karachi, Pakistan, Ansari and Rajkumari[26] in Hyderabad, India, Abdul Kairun and colleagues[27] in Adama, Ethiopia, Akinloye and colleagues[28] in Nigeria Rahimkhani and colleagues[29] in Tehran Iran, Rizvi and colleagues[30] in Aligarh, India and Imade and colleagues[31] in Benin City Edo state, Nigeria, respectively.

Pregnant patients in Yemen, the United Arab Emirates (UAE), Qatar, and Iran were indicated to have an ASB incidence of 30, 4.8, 9.9, and 3.3–6.1%, correspondingly Moghadas and Irajian.[32]

This difference in investigations could be ascribed to a number of variables, including regional variations, socioeconomic position, the ethnically of the respondents, the study's environment (primary care, community-based, or hospitals), and the variability in the diagnostic tests (urine dipsticks, microscopy, and cultures). Substantial variations in frequencies can be seen between races, in addition to between members of the same race who live in various regions or have various socioeconomic statuses. Consequently, it is crucial to assess the incidence of ASB in a particular community Kamel and colleagues.[20]

In the study of Gehani and colleagues[13] there were 213 people examined (patients: 103, controls: 110). When 21 patients tested positive for ASB, pathogen-specific antibiotics were advised. Premature birth/LBW prevalence was 14.7% (95% CI: 2–27%) reduced in the interventional arms (n = 27) than in the control arms (n = 45); RR: 0.64, (95% CI: 0–43-0–95); $P = 0.023$, $\chi^2 = 513$.

The current study showed that *E. coli* followed by K. pneumonia were the most prevalent organisms. Moreover, prevalence of difference organism was comparable in both groups.

In accordance with our results study of Kamel and colleagues[20] as they reported that The most

prevalent pathogens were *E. coli* (55.14%), trailed by proteus (28.57) and klebsiella (14.28%).

In this investigation, the most typical pathogens identified from pregnant women was *E. coli*, which was consistent with Adeghate and colleagues[33] they found that *E. coli* is responsible for 70–95% of lower and upper UTIs.

Also, this study consistent with study done by Abdul Kairun and colleagues[27] they found that *E. coli* constituted the most frequently isolated species, trailed by Klebsiellaspp and Proteus mirabilis, while *P. aeruginosa* was the least frequently discovered bacterium.

Data gathered from several locations revealed that *E. coli* is still the most commonly infection in ASB like our study Marahatta and colleagues,[23] Chitralekha and colleagues,[24] Ahmad and colleagues[21] and Rizvi and colleagues.[30]

Lactoses and amino acid levels increased during pregnancy, which favorably promotes the development of *E. coli*. Additionally, it may be brought on by faucal contaminations from inadequate hygienic during pregnancy. The most frequent cause of both asymptomatic and symptomatic bacteriuria of pregnancy is *E. coli* Oladeinde and colleagues.[34]

Moreover, in the study of Nteziyaremye and colleagues[9] The most often identified pathogen was *E. coli*. This is consistent with earlier research done in Uganda. Andabati and Byamugisha[35] and elsewhere Ali and colleagues[36] in which The most often identified pathogen was *E. coli*. *E. coli* is a prevalent bacteria in the perineum, therefore failing to practise good hygiene can make you more likely to contract the infections Oli and colleagues.[37] Gram negative bacteria also have a unique structure that allows them to connect to, grow inside of, and infiltrate the uro-epithelium. Pyelonephritis and invasive infection could result from this Farkash and colleagues.[38]

While in the study of Ayoyi and colleagues,[15] *E. coli* made up 38.8% of the germs extracted, and *S. aureus* made up 29.7%. Following that were coagulase-negative staphylococcus (13.2%), Klebsiella (7.8%), Pseudomonas species (2.7%), and Proteus species.

Pyelonephritis is prevented and the incidence of premature births is decreased by treating ASBP. As part of antenatal care recommendations, numerous governments have embraced standard assessment and treatment for ASBP. There is disagreement over whether treating ASBP enhances newborn survival and whether using antibiotics throughout pregnant has negative effects. These connections, though, are not sufficiently supported by the available data. Consequently, it is crucial to screen expectant mothers and treat mothers who have been identified with ASBP. This will stop obstetric issues from later developing Angelescu and colleagues.[6]

All *E. coli* in the research we had in our hands shown resistance to Amoxicillin and Ampicillins and sensitivity to Trimethoprims + Sulfamethoxazoles. All Klebsiella pneumonia strains tested positive for Amikacin sensitivity and resistance to Amoxicillin, Ampicillin, and Cefepime. All of the *E. coli* strains exhibited resistance to almost all of the chosen antibiotics, however only 50% of them were susceptible to Nitrofurantoin, Trimethoprim, and Sulfamethoxazole. When it comes to Staph. aureus, all of the strains were resistant to Cefoxitin, Ciprofloxacin, Clindamycin, Gentamycin, Rifampicin, and Sulfamethoxazole but susceptible to Amoxicillin-Clavulanate, Ampicillin, Linezolid, Nitrofurantoin, and Vancomycin. When it comes to Proteus, all of them displayed resistancy to Amoxicillin's and Ampicillins, Cefoxitin's, Ceftazidime's, Meropenems, Nitrofurantoin's, and Sulfamethoxazole's and sensitivity to Amikacins, Cefepimes, Ceftriaxone's, Ciprofloxacin's, and Gentamycin's.

While in the study of Kamel and colleagues,[20] the antibiotic sensitivity patterns in this study show that The majority of the isolated bacteria were 100% delicate to nitrofurantoins, nalidixic acids, cefoperazones, gentamycins, ciprofloxacins, norfloxacins, and trimethoprim-sulfamethoxazole, but only 57.14 were delicate to ampicillin/sulbactam, cefepimes, and ofloxacins, and were resilient to amoxicillin and clavulanic Unfortunately, the usage of these antibiotics during pregnancy is limited. In this research, Nitrofurantoin was determined to be the most efficient and safest medicine.

Nteziyaremye and colleagues[9] found that the gram-positive isolations exhibited widespread antibiotic resistance (amoxicillin with clavulanic acids, sulphamethoxazole with trimethoprims, erythromycin, and penicillin). Ipenem and gentamycin were effective against *S. aureus*. This is consistent with other research findings Izuchukwu and colleagues[39] but is different from what a Turkish research discovered Eksi and colleagues.[40] The overusing or improper use of these antibiotics may be the cause of the resistancy to the widely used antibiotics Petersen and colleagues[41]

In the study of Ayoyi and colleagues,[15] Ampicillin resistancy was strong in all isolated bacteria, varying from 83.3% to 100%. The majority of isolates were sensitive to imipenems, which had a range of 89.7%–100%, and had the least resistancy to all isolates, varying from 0% to 10.2%. The study's *E. coli* isolates were resistant to all but Imipenem of the available antibiotics. For gentamycin, the resistance

rate was 11.6%, and for ampicillin, it was 90.6%. Their research revealed a higher level of resistance to cotrimoxazole and other first-line antibiotics. The present study's findings of substantial cotrimoxazole resistance highlight the necessity for increased surveillances to spot alterations in the sensitivity patterns of urinary tracts isolations. Additionally, their investigation revealed a higher proportion of cefotaximes resistance generally, at 90.8%. *E. coli* isolates (74.1%) and *Staphylococcus aureus* isolates (93.8%) have the maximum levels of resistance. The second-lined cephalosporin antibiotic in the third generation is cefotaxime. Additionally, their investigation revealed a higher proportion of cefotaximes resistance generally, at 90.8%. *E. coli* isolations (74.1%) and *Staphylococcus aureus* isolations (93.8%) have the maximum levels of resistance. The secondly-lined cephalosporin antibiotic in the third generation is cefotaximes.

Our results showed that there was a significant difference between the groups in term of pre-eclamptic toxemia, PPROM, preterm labor, and neonatal septicemia.

Our results were supported by study of Lallar and colleagues[12] as they reported that Preterm labor was 14.5 times more likely in ASB patients than in controls, and the distinction was statistically significant ($P < 0.05$).

Also, in the study of Gebremedhin and colleagues,[42] A total of 2 (4.3%) perinatal deaths and one miscarriages were noted amongst pregnant women with ASBU who were all monitored for complications during pregnancy and perinatal mortality. Nearly half of newborns—21—were delivered before 37 weeks of gestation, accounting for 4.9% of those who were underweight. 2 (4.7%) of the 14 (32.6%) neonates that were asphyxiated had experienced acute asphyxia in the first minute; the overall asphyxia percentage detected in the first minute fell to 7% in the fifth minutes. In terms of maternal complications, the percentages of the women who had early labor, preeclampsia, eclampsia, and pregnancy-induced hypertensions were 7 (16.3%), 6 (14%), 8 (18.6%), and 5 (11.3%), correspondingly. 5 (11.6%) of the pregnant women who received ASBU afterwards experienced symptomatic bacteriuria. Initiation helped 31 (72.1%) pregnant women go into labor. 26 (60.5%) of the ladies gave birth via caesarean section.

Also, Farzaneh and colleagues[4] demonstrated that In the premature labor group there were 33 cases and 6 in the term of delivering of ASB. ASB and premature labor had a significant statistical link (P value < 0.05).

4.2. Conclusion

ASB in pregnant women is characterized as having less than 100 000 microorganisms/ml of urine collected from a cleaned capture mid-stream urine sample with no clinical signs to the genito-urinary tracts. Nevertheless, problems such pyelonephritis, premature labor, lower birth weight fetuses, maternal sepsis, anemia, and fetal death frequently have ASB as their biggest reason. Because treating ASB has been demonstrated to lower the incidence of pyelonephritis in later stages of pregnancy, routine ABU testing and treatment has emerged as a standard of obstetrical therapy.

The bacterial infiltration and consequent growth on all or part of the urinary system are known as UTI. Pregnancy alters a woman's body's physiology in several ways. ASB is caused by a number of anatomical and physiological alterations, including superior and anterior migration of the bladders as well as dilatations of the ureters and renal pelvis as earlier as the ninth week of gestation. A common pathogen in pregnancy called ASB increases the risk of harmful outcomes for both the mother and the fetus.

As a result, pregnant women must undergo a bacteriuria screening and receive the proper antibiotic treatment. Pregnant women should be examined at the outset of their pregnancies since therapy for positive bacteremia may lessen difficulties for both the mother and the fetus.

Disclosure

The authors have no financial interest to declare in relation to the content of this article.

Authorship

All authors have a substantial contribution to the article.

Sources of funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflicts of interest

Conflict of interest statement: The authors declared that there were No conflicts of Interest.

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