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Assessment of Vaginal Infection in Pregnant Women

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KEYWORDS Pregnant Women, Vaginal Infections, Risk Factor, Low-Birth-Weight Children, Preterm Delivery, Reproductive Tract Infections, Random Sampling, Bacterial Vaginosis.	ABSTRACT: Background: Inflammation w vulvovaginitis. include early br and infections. Objective: The expectant moth Method: 85 ra participated in categorised rand examinations, a Results: 71.769 incidence were (35.76%). Vagi Conclusion: V standard tests impossible to id	One of the risk factors for the devel ithin the vagina is called vaginitis. The inf Infections may cause discomfort, itching, each of the membranes, and preterm labou aim of this study was to ascertain how c ers. ndomly chosen pregnant women report this cross-sectional research. The part lom sample technique. To collect the nece nd laboratory evaluations were used. 6 of the samples tested diagnostic for infec Streptococcus (13.06%), a strain of Esc nal tract infections were more common in aginal diagnostics may be beneficial thro since pregnant women had a high frec lentify with symptoms that were obvious of	lopment of vaginal infection is Candida. flammation of the vulva and vagina is called and drainage. The difficulties of pregnancy ur, premature births, low birth weight babies, common reproductive tract infections are in ting to department of gynaecology, KIMS ticipants were chosen using a systematic essary data, survey forms, midwives' clinical ction in the lab. The bacteria with the greatest cherichia coli (17.97%), and yeast albicans the second half of childbirth than in the first. pughout pregnancy as an alternative to other quency of vaginal infections, which were or clinical exams alone.

I. INTRODUCTION

The most prevalent infectious illness affecting the female sexual organs in women of reproductive age is vaginitis. Common Vaginal Infections (CVI), Specifically Trichomoniasis (ST), Bacterial Vaginitis (BV), aerobic vaginitis (AV), [1], and Vulvovaginal Candidiasis (VVC,) can cause gynaecological and reproductive issues like inflammation of the pelvis, following surgery sickness, during pregnancy infection, per partum an infection, [2], and cervicitis [1, 2].

The primary symptoms in an acute episode consist of burning and vulval pruritus. The identification of a species of Dipluran as well as the existence of signs and symptoms are prerequisites for the diagnosis [3, 4]. A positive wet mount test or a potassium hydroxide preparation are examples of diagnostic tests. In VVC, vaginal pH often stays normal. Despite the above 25% frequency of vulvovaginal candidiasis during pregnancy, there aren't much publicly available data on it in nations with poor infrastructure [4, 5]. Therefore, severe illness may be caused by the immunological response of the patient's body during the pregnancy as well as the proliferation and pathogenicity of infections in instances of mixed vaginitis. The frequency, [5], illness phenotypes, and vaginal microbiota features of combination vaginal infection during gestation are still poorly understood, and there are currently few research on the subject. It is essential to clarify the symptoms of mixed vaginitis in order to fully understand pathogenic processes and to implement illness treatments.

According to their research, 8% of pregnant women had a vaginal chlamydia infection. The frequency of infections with chlamydia was 6.1%, nevertheless. According to a study conducted in Jamaica, 30.7% of the pregnant women had positive test results for TV and 44.1% had positive test results for BV [7]. According to the findings, women in Turkish who were not yet of sexual maturity had significant rates of CMV and rubella infections. Furthermore, it was shown that 3.1% of

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American women had TV infection. Nonetheless, it was discovered that 12.6% of US pregnant women in the state of Louisiana had TV infection [8].

Indicated that 441 pregnant women had a high frequency of group B streptococcus [9]. The findings mentioned above underscore the dispute around the frequency of Infections of the reproductive in expectant mothers [10]. This study was carried out to ascertain the frequency of infections in the reproductive tract among expecting mothers in an attempt to resolve this subject to discussion.

Pregnant women on opiate maintenance remain at higher risk for unsatisfactory pregnancy outcomes, including intrauterine foetal mortality, [11], Placental Abruption (PA), Pre-Term Delivery (PTD), and restricted baby growth, even with multidisciplinary treatment. The chance for infections of the vagina should be further taken into consideration, [12], as many women who suffer from opiate dependency also experience socioeconomic hardship, frequent exposure to hostile environment, and assault both physically and sexually [13, 14].

Given that early gestational infection of the vagina has been experimentally shown to be contributory to the intricate processes underlying PTD, [15], this problem is especially crucial. Our research team recently proposed systematic screening for nonspecific vaginal infections and treating them as a means of improving obstetrical outcomes for the entire sample of pregnant women at our primary referred establishment [16, 17].

Infection, genital irritation or itching, inflammatory of the largest labia, genitalia minora, or genital region, vaginal discharge, bad vaginal an odour, and discomfort or irritation during a sex session are a few potential symptoms [18]. Known Amsel's clinical criteria, such as the presence of discharge from the bladder, pH measurement, smell examination, and clue cells on microscopy, may be used to identify vaginal diseases. The goal of the current research was to evaluate vaginal infections in expectant mothers [19].

1.1 Objectives of the study

- Assess the effectiveness and safety of various treatments for vaginal infections in expectant mothers.
- Examine how vaginal infections affect the health of mothers and the outcomes of their new-borns, such

as premature delivery, low birth weights, and other issues.

II. LITERATURE REVIEW

(Thomas, T., Choudhri, S., 1996) [20] To investigate traits of expectant moms linked to cervical infection and to test the precision of risk evaluations and symptombased techniques designed to detect cervical infection in women who are not yet pregnant. In Nairobi, Kenya, 291 consecutive beforehand clinic patients had physical tests and interviews. Additionally, specimens of the vagina, cervix, urine, and blood were collected for analysis.

(Ezeigbo, O. R., Anolue, F. C., 2015) [21] It is extremely important to conduct epidemiological surveillance of the vaginal candidiasis infections in relation to preterm delivery and mortality among babies, particularly in pregnant women. The aim of this research was to ascertain the frequency of candidiasis within the vagina and the presence of Candida species in expectant mothers who visit prenatal clinics in Aba, Abia State, Nigeria, without necessarily exhibiting any signs of the condition. Subjects were chosen based on their attendance at the clinics and permission. Throughout May and October of 2014, 400 pregnant women had swabs of their vagina and urine samples taken. Using Sabouraud Dextrose Agar (SDA), species of Candida were discovered. The germ tubes test has been utilised to check all cultures for any indication of the albicans yeast.

(Zemouri, C., Wi, T. E., Kiarie, J., 2016) [22] The objective of this review was to compile and evaluate the accuracy of diagnostics and treatment probability of the syndromic approach Vaginal Discharge Diagram in treating infections of the vagina caused by Trichomonas Vaginalis (TV), Bacterial Vaginosis (BV), and Candida Albicans (CA), as well as cervical infections brought about by Neisseria Gonorrhoeae (NG) and Chlamydia Trachomatis (CT). The WHO's 2003 recommendations on discharge from the vagina correlated case treatment will be updated in light of the findings of this study. A comprehensive analysis of published research from January 1, 2000, to March 30, 2015, across many databases, was carried out. Included were studies assessing the WHO Vaginal Discharge Flowchart's validation and diagnostic reliability?

(Pacha-Herrera, D., 2020) [23] Vaginal microbiome strongly impacts women's health and pregnancy outcomes. Under normal circumstances, this

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microbiota—a dynamic environment of diverse bacteria in varying ratios—protects the vaginal epithelium against infections. However, women of sexual maturity often have vaginal infections identified, which could give rise to more serious problems. Therefore, the primary objective of our study was to ascertain the prevalence of Vulvovaginal Candidiasis (VVC), Aerobic Varicellalitis (AV), and Bacterial Vaginosis (BV), among others, in Ecuadorian women who were not expecting.

(Li, T., Liu, Z. H., 2019) [24] A lower genital tract infection, such as candidiasis of the vulvovaginal cavity (VVC), should be taken into considerations by the doctor when a patient presents with symptoms such as atypical leucorrhea. It is then appropriate to evaluate the disease's normal clinical presentation, diagnosis, and recommended treatment.

(Mitchell, C., Gottsch, M. L., 2013) [25] We assessed the amounts of bacterial species linked to vaginosis and vaginal defecation concentrations in expectant mothers. Quantification polymerase chain reaction was used to evaluate self-collected vaginal tissue samples from two prenatal visits for nine different bacterial species. Using an enzyme-linked immunosorbent test, beta guarding 2-3 and alpha defending 1-4 were compared.

(Dey, B. C., Koley, A. K., 2013) [26] The goal of the current research is to ascertain the prevalence of various vaginal infections throughout pregnancy, as well as how these infections relate to risk variables such as age, gravida, and demographic profile. At the Pregnancies Clinic and labour ward of the capital National medical University and the hospital, Kolkata, India, a sociodemographic and microbiology survey was conducted to find out how common it was for pregnant women to get infections of their vaginas from Trichomonas vaginalis, yeast albicans, and bacterial vaginosis. Additionally, the survey looked for any correlations between the infections and certain sociodemographic risk variables. The research was done from April 2010 to March 2011.

III. METHODS

For this cross-sectional research, we gathered 85 pregnant women reporting to department of

gynaecology, KIMS by systematic categorised random sampling [26]. We conducted the sample in two stages because of the uneven distribution of the pregnant women encompassed all through the county. We planned stratified proportional random sample from the expectant women's names list for the first phase, and systematic sampling was carried out for the second. For every patient, the research period included their whole pregnancy.

A clinical examination, a questionnaire, and laboratory sample were the methods we used to gather data. A pregnant lady was asked to completely fill out an online survey (which includes her medical history and general information) after being examined for bacterial or fungal diseases [27].

It was filled out with the patient's information, and samples were sent right away to the Molecular Research Laboratory. Combining blood agar culture, wet lamella tests, warm colouring techniques, and eosin methylene blue, we succeeded to identify the kind of infection. Lastly, SPSS 11.5 was used to assess the lab findings and the questionnaire data using the t-test, the chi-square test, and Spearman correlation method [28].

IV. RESULTS

The pregnant women's age ranged from 17 to 38 years old, with a mean of 26.27 ± 5.28 years (Table 1). In terms of gestational age, 35.29% of the female participants were within the first 20 weeks of their pregnancy, while 64.71% were during the second portion (20 to 40 week). Of these women, 28.2% had one kid, 18.8% had two, 9.4% had three, and 4.8% had four or more. 38.8% of them had no additional children.

Women who completed elementary school, junior's high school, senior high school, or higher education made up 3.5%, 25.9%, 62.37%, and 8.23% of the population, respectively. 1.2% of their spouses were illiterate, 3.5% had completed elementary school, 20% had completed junior school, 68.3% had earned their high school diplomas, and 7% had pursued further education. Furthermore, urban ambulatory care institutions served 21.2% of the women, whereas rural acute healthcare organisations treated 78.8% of the women.

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Characteristics	
Age (mean ± SD)	26.36 ± 5.36
Pregnancy Stage	25.36 ± 2.36
0 to 20 weeks	27 (26.69%)
20 to 40 weeks	58 (56.88%)
Place of residence	
Urban	26 (25.36%)
Rural	59 (56.36%)
Number of child	
0	33 (26.31%)
1	25 (56.36%)
2	15 (25.36%)
3	8 (7.3%)
>4	4 (4.3%)
Education	
Illiterate	0
Primary	4 (4.6%)
Junior high school	21 (22.6%)
Diploma	52 (53.69%)
University	7 (7.9%)
Health coverage	
Rural centre	66 (76.3%)
Urban centre	19 (23.6%)

Table 1 The essential characteristics of pregnant women.

According to the data collected from the questionnaires, 21.18% of women failed to show any signs of infections; nevertheless, that percentage was found to be 41.2% based on the judgement of midwives and 28.24% basing

on test results (Table 2). The most frequent cause of infections in the reproductive system was albicans Candida. 81.2% of the midwives' diagnostic and vaginal exams revealed no clinical findings.

Characteristics	
Symptoms	
None	17 (17.3%)
1	31 (32.12%)
2	12 (11.12%)
3	12 (13.21%)
>4	13 (12.3%)
Clinical finding	
None	68 (66.23%)
Erythema	4 (4.3%)
Edema	9 (8.36%)
Erythema and Edema	4 (3.1%)
Secretions	
None	23 (23.1%)
1 character	41 (41.23%)

Table 2 Symptoms that pregnant women experienced.

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2 character	15 (14.3%)
3 character	6 (5.3%)
Infection	
No	34 (34.2%)
Yes	51 (52.3%)
CA	29 (28.3%)
TV	15 (14.2%)
BV	5 (5.3%)
Cervicitis	2 (3.1%)
Infection (laboratory results)	
No	25 (24.3%)
Yes	62 (63.1%)
CA	2 (2.3%)
TV	4 (4.3%)
CA+TV	1 (2.3%)
S	9 (8.3%)
SA	3 (2.3%)
СТ	5 (4.2%)
E. coli	11 (10.2%)
E.coli. CA	2 (2.3%)

Table 3 shows that there existed no discernible correlation (P = 0.279) between infection and location of residence. Nonetheless, a noteworthy correlation was seen between the stage of pregnant and infections (P = 0.035).

Table 5 Relationship between several attributes of pregnant women.					
Characteristics		P-value			
Urban					
No Infection	8 (36.94%)				
With Infection	10 (61.3%)	0.364			
Rural					
No Infection	18 (36.39%)				
With Infection	49 (71.36%)				
Infection and Pregnancy Stage					
No Infection	22.3 ± 5.69				
With Infection	25.6 ± 8.36	0.234			

V. DISCUSSION

Regarding the frequency of infection of the reproductive tract in expecting mothers, there is disagreement. Our results demonstrated a significant correlation between the reproductive system infection incidence and the stage of pregnancy. Stated differently, the incidence of infections rose with the development of pregnant [29]. The majority of the women and their spouses in our survey just had a graduation or had less education. 78% of the participants reported having infection-related symptoms, based on data collected from the surveys. More education for expectant mothers will enhance prevention and detection at an early stage by raising their knowledge of urinary tract infections and the implications they pose for the unborn child.

While the test data indicated a 71.76% incidence of infections across the women, midwives had detected fifty-nine percent of them. By using correlation coefficient calculations and the Spearman test, we were able to determine that the midwives' diagnosis was often

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wrong. This may be one of the causes of expectant mothers complaining of vaginal infection symptoms and returning repeatedly and again to ambulatory care facilities [30].

VI. CONCLUSION

This conclusion aligns with the study's findings. Given that 60% of the husbands of the pregnant women had only a diploma or less education, and that the majority of them were likely farmers and temporary employees, it is reasonable to assume that if they were properly trained about the signs of diseases and how to treat them, it would have had a significant impact on their views and behaviours regarding hygiene.

Pregnant women in Iran still have a high rate of reproductive tract infections, despite the fact that the majority of pregnancy-related problems have been addressed in the updated unified national care system. Consequently, analysing vaginal secretions seems to be an important preventative measure and useful for early infection proof of identity, along with other standard checks, particularly in the latter portion of pregnancy. Furthermore, healthcare systems may organise practical lessons in addition to current theoretical seminars to improve the performance and knowledge of the medical personnel and the pregnant women.

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