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Gynaecology

UROGENITAL INFECTIONS- MAJOR CONTRIBUTING FACTOR IN PRETERM LABOR.

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ABSTRACT

Introduction- Preterm delivery, defined as delivery occurring before 37 completed weeks of gestation, causes the majority of neonatal deaths unrelated to congenital anomalies and also accounts for more than one half of nursery costs. Furthermore, premature infants who survive often have significant morbidities including necrotizing enterocolitis, retinopathy of prematurity, intraventricular hemorrhage. Identifying and treating the underlying cause of preterm labor would potentially decrease perinatal morbidity and mortality.

Objective – 1. Genital infections and urinary tract infections are causative factors of preterm labor.

2. To study incidence of genital infections and urinary tract infection in patients with preterm labor pains.

Methodology- A prospective observational study done with women admitted in labor room with preterm labor pains at Atal Bihari Vajpayee government medical college Vidisha from 1 January 2019 to 31 December 2019.Diagnosis is made after examining Clean catch samples of urine under microscope and urine culture of all pregnant women with preterm labor, and vaginal swabs for microscopic examination, and culture along with per speculum examination done for detection of genital infections, and results were compared.

RESULTS- Out of 468 pregnant women with preterm labor, collectively urogenital infection in 46%, isolated Urinary tract infection in14%, genital infection in 21%,11% women had both urinary tract infection and genital infection. About 10 % had asymptomatic bacteriuria with no history of urinary tract or genital infection. Among 21% of genital infections in the preterm labor patients, vaginal candidiasis in 28%, bacterial vaginosis in 40%, and group B streptococcus infection 10 % women, rest with gonococcal cervicitis and viral infection (HSV, HIV), and other infections.

Conclusion-Both urinary tract infection and genital infection individually and collectively play major role in initiation of preterm labor, hence as urine routine examination is included in universal screening in pregnant women, evaluation for genital infection like candidiasis, bacterial vaginosis, Chlamydia trachomatis, trichomonas vaginalis should also be included in universal screening in pregnant women to decrease incidence of preterm labor.

KEYWORDS :

INTRODUCTION-

Preterm labor was documented according to ACOG criteria (1997) as four uterine contractions in 20 min or eight in 60 min plus progressive change in the cervix; cervical dilatation greater than 1 cm; and cervical effacement 80 % or greater at gestation <37 completed weeks. Threatened preterm labor was described as four uterine contractions in 20 min or eight in 60 min plus cervical dilatation less than 1 cm; and cervical effacement less than 80 %. Leaking, i.e., rupture of membranes was diagnosed by per speculum examination and confirmed by litmus paper (change of color from red to blue).

Preterm birth is significant problem across the world because of associated neonatal mortality and short and long morbidities and disability in later life. Preterm birth is defined by WHO as babies born alive before 37 complete weeks of gestation since LMP. According to WHO, every year about 15 million babies are born prematurely around the world and that is about more than one in10 of all babies born globally. In India out of 27 million born every year about 3.7 million are preterm.

Genitourinary tract infections are one of the major causes of preterm delivery. Uterine contractions may be induced by cytokines and prostaglandins, which are released by microorganisms. Asymptomatic bacteriuria, gonococcal cervicitis and bacterial vaginosis are strongly associated with preterm delivery. By adopting a rational approach to the diagnosis and treatment of genitourinary infections, family physicians can substantially decrease a patient's risk of preterm delivery.

OBJECTIVES-

1. To establish that genital infections and urinary tract infections are causative factors of pre term labor.
2. To study incidence of genital infections and urinary tract infection in patients with preterm labor pains.

METHODS-

Type Of study-Prospective observational study

Sample Size – 468 pregnant women with preterm labor pains

Duration- 12 months, 1 January 2019 to 31 December2019.

Place of study-Atal Bihari Vajpayee Medical college, Vidisha.

468 women with preterm labor pains, admitted in labor room were explained about study and consent was taken before enrolling them in study. Per speculum examination were performed, vaginal swabs were sent for diagnosis of genital infections. For detection of urinary tract infection clean catch samples of urine were sent, urine routine microscopy and culture were sent.

Inclusion criteria-

women with preterm labor and gave consent to take part in study were included.

Exclusion criteria-

history of cervical cerclage, with diabetes and cardiac problem and other comorbidities were excluded, hypertensive disorder, placental abruption, polyhydramnios, congenital disorders, and anatomical factors were also excluded.

Data Analysis-

Data was entered in excel sheet and percentage was calculated.

RESULTS-

Out of 468 pregnant women with preterm labor, collectively urogenital infection in 46%, isolated Urinary tract infections in 14%, genital infection in 21%, 11% women had both urinary tract infection and genital infection. About 10 % had asymptomatic bacteriuria with no history of urinary tract or genital infection. Among 21% of genital infections in the preterm labor patients, vaginal candidiasis in 28%, bacterial vaginosis in 40%, and group B streptococcus infection 10 % women, rest with gonococcal cervicitis and viral infection (HSV, HIV), and other infections.

DISCUSSION-

Unfortunately, the etiology in most cases of preterm labor is unknown. Some identified factors include anatomic abnormalities of the uterus and cervix, premature rupture of the membranes (PROM), placenta previa or abruption, trauma, excessive uterine enlargement, as in multiple gestation and hydramnios, urinary tract infection including asymptomatic bacteriuria, genital infection, infectious

lung disease and developmental delay.

Decidual invasion by the lower genital tract bacteria is associated with recruitment of leukocytes followed by cytokine production which trigger prostaglandin synthesis in the amnion, chorion, decidua, and myometrium. This leads to contractions of the uterus, dilatation of cervix, membrane exposure, and entry of microorganisms into the uterine cavity. Local action of the lower genital tract bacteria produces enzymes sialidase or mucinase, which weakens the protective cervical mucosa and thus supports bacterial invasion of the upper genital tract.

Asymptomatic bacteriuria, defined as more than 100,000 colonies of a single bacterial species per mL of urine, cultured from midstream sample. The most commonly isolated bacteria is Escherichia coli. Pregnancy does not increase the incidence of asymptomatic bacteriuria; however, pyelonephritis develops in 20 to 40 percent of pregnant women with untreated asymptomatic bacteriuria. Usually women who do not have asymptomatic bacteriuria at the initial prenatal visit will not develop bacteriuria later in the pregnancy. Accordingly, routine screening for asymptomatic bacteriuria should be performed at the initial prenatal visit.

If bacteriuria without symptoms is not treated in pregnant women, then it may lead to acute cystitis and pyelonephritis in 20–40 % of cases. The presence of urinary tract infection may be an indicator for abnormal vaginal flora because of the colonization of the vagina with the same pathogens as found in the urine

The U.S. Preventive Services Task Force recommends screening of every pregnant patient for asymptomatic bacteriuria using a urine culture. The American Academy of Family Physicians (AAFP) recommends periodic screening with urine semiquantitative dipstick evaluation, and the American College of Obstetricians and Gynecologists (ACOG) recommends screening at the initial prenatal visit using a urinalysis and additional investigations as clinically indicated screening at the initial prenatal visit should be undertaken using a urine culture because urine dipstick testing may have up to a 50 percent false-negative rate.

Women with gonococcal cervicitis are commonly asymptomatic but may have vaginal discharge, vaginal spotting or dysuria. Physical examination frequently reveals a mucopurulent cervical discharge and a hyperemic cervix. Other infected sites may include the pharynx, anal canal and urethra. Culture of the affected site remains the gold standard for diagnosis. Results from recent studies have shown that gonococcal DNA tests have excellent sensitivity and specificity, and they are easier to perform than cultures. Epidemiologic studies have demonstrated that the treatment of gonococcal cervicitis is associated with a decreased rate of preterm delivery.

Recent studies have shown that bacterial vaginosis, a noninflammatory overgrowth of anaerobic species (including Bacteroides species, Pepto streptococcus species and Gardnerella vaginalis), is associated with preterm delivery in high-risk patients. Up to 40 percent of pregnant women may have bacterial vaginosis. Patients are usually asymptomatic but may report a nonpruritic malodorous vaginal discharge. On examination, a malodorous, thin, homogeneous discharge is typically seen. The diagnosis of bacterial vaginosis rests on the presence of three of the following four findings: (1) a thin, dark or dull gray homogenous malodorous discharge that adheres to the vaginal walls; (2) an elevated vaginal pH level (4.5); (3) a positive Whiff test (fishy odor is noted on adding KOH to the discharge); or (4) the presence of clue cells (epithelial cells with adherent organisms) on wet mount microscopic evaluation. These diagnostic criteria combined are approximately 90 percent sensitive and almost 90 percent specific.

BV has been found to be associated with the acquisition of STIs such as chlamydia, gonorrhea, trichomoniasis, and viral infections (HIV, HSV, and HPV), plus a range of morbidities including postabortal sepsis, infertility, pelvic inflammatory disease, and post hysterectomy vaginal cuff infections. In pregnancy, BV has been associated with PTB, preterm prelabor rupture of the membranes (PPROM), early, late, and recurrent miscarriage, and postpartum endometritis. If BV is detected early in pregnancy, it is associated with a five to sevenfold increased risk of SPTL and PTB. A longitudinal study in pregnancy has demonstrated that only 2% of women who did not have BV in the second trimester will develop BV by 34 weeks. In contrast, 50% of women who had BV in the second trimester will still have BV at 34 weeks.

CONCLUSION-

incidence of genital infection is as significant as urinary tract infection in initiation of preterm labour. Hence screening of genital infection should also be included in universal screening in pregnancy specially preconceptionally and in early trimester.

Limitations-

Booked and unbooked cases, history of treatment for urogenital infections not included in study, hence effect of treatment and its duration cannot be studied.

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1.Distribution on the basis of socioeconomic status (on basis of B.G. Prasad's classification) and living area-

Socio-conomic class	No of women from a) Rural area b) urban area	Percentage a) Rural area b) urban area
I	a)2 b)8	a)0.4% b)1.7%
II	a)34 b)18	a)7.2% b)3.8%
III	a)63 b)54	a)13.5% b)11.53%
IV	a)124 b)64	a)26.5% b)13.7%
V	a)46 b)55	a)9.8% b)11.75

2. Distriution On The Basis Of Parity

PARITY	NO OF WOMEN(n=468)	PERCENTAGE
Nullipara/Primigravida	156	33.33%
2nd gravida	108	23%
Multigravida	204	43.6%

3.incidence Of Urogenital Infections In Women With Preterm Labour-

S. No.	Causative Factor	Number Of Women	Percentage
1	Urogenital infections (Collectively)	215	46%
2	Urinary tract infection	65	14%
3	Asymptomatic bacteriuria	47	10%
4	Genital infections	98	21%

	Type of genital infection	No of women	percentage
a	Bacterial Vaginosis	39	40%
b	Vaginal candidiasis	28	28%
c	Group B streptococci	10	10%
d	Viral infections	4	4%
e	Gonococcal cervicitis	5	5%
F	Other (syphilis, chlamydia etc)	12	12%

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