

OBSTETRICAL MORBIDITIES IN GENITAL TRACT INFECTIONS.

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ABSTRACT: INTRODUCTION- Sub clinical ascending infections through the lower female genital tract are predominant worldwide. Important morbidities related to poor perinatal outcome both for the mother and for the fetus and new born comprise preterm birth, prelabor rupture of membranes, post partum sepsis and maternal anaemia. In the fetus, sepsis and intrauterine growth retardation are suspected to be the consequences of ascending maternal infection. Both the direct effect of the infection and the maternal immune response contribute to these eventualities. This study was done to identify antenatal women with various genital infections and to know the outcome of pregnancy in presence of these infections. **OBJECTIVES-** Diagnosis treatment and preventive measures in genital infections in Antenatal period to improve the pregnancy out come .

MATERIAL AND METHODS- One thousand women were studied for lower genital tract infection by ELISA KITS for chlamydia trachomatis, hanging drop preparation of vaginal discharge for trichomoniasis and mycelia of candida albicans can be seen by wet mount of vaginal discharge in 10% KOH. Gardnerella vaginal infection was diagnosed by Amsel's criteria . **RESULT-**out of thousand women 53% were positive for single or multiple infections (gp-1), 47% women had no infection (gp-11) . Labour outcome was studied in 415 antenatal women of gp -1 &395 antenatal women of gp -11 . In gp-1 51.80% had no effect ,7.71% had abortions and 40.48% had pre term labour and/or PROM .Which was significantly higher than in non infected group . **IN INFECTED GROUP-**41.92% neonates had no effect others had some effect in terms of LBW, birth asphyxia, neonatal death & IUD. Which was significantly higher than in non infected group. P=0.00

CONCLUSION- The study showed significantly higher incidence of obstetrical morbidities in women with lower genital tract infection,since genital infections are the root cause of these obstetrical morbidities so early detection and treatment of these infections is very important to improve obstetrical out come .

KEY WORDS : lower-genital tract infection, obstetrical morbidities., Amsel's criteria .

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INTRODUCTION: Host defence mechanism operate against infections affecting maternal and fetal mortality. Sub clinical ascending infections through the lower female genital tract are predominant world wide. Important morbidities related to poor perinatal outcome both for the mother and for the fetus and new born comprise preterm birth, prelabor rupture of membranes, post partum sepsis and maternal anaemia. In the fetus, sepsis and intrauterine growth retardation are suspected to be the consequences of ascending maternal infection.

In the newborn septicemia and respiratory disorders as well as neurological disorders seem to be consequences of such ascending genital infections in the pregnant women. It is to elucidate the host defence mechanism and antimicrobial barriers from the vagina through the cervix, fetal membrane and amniotic fluid including the early fetal immunocompetence in the second and third trimester of pregnancy.

Preterm labor may occur in 10-20 % of pregnancies in developing countries, whereas prelabor rupture of membranes and post partum septicemia may occur in 5-10% in such settings. All these in turn are associated with neonatal infections and morbidity. Both the direct effect of the infection and the maternal immune response contribute to these eventualities.^{1,2} systemic infections and genital infections due to many different microorganisms including Chlamydia trachomatis, trichomonas vaginalis and gardnerella vaginalis are reportedly involved in initiating preterm labor.^{2,3,4,5}

This study was done to identify antenatal women with various genital infections and to know the outcome of pregnancy in presence of these infections. The antenatal women attending the outpatient department and admitted in indoor and emergency wards of department of obstetrics and gynaecology, Rama Medical College Hospital and Research Center, Kanpur during two years period (Feb.2010 to Feb.2012) were enrolled in this study. Suspected or confirmed fetal congenital malformation by USG, liver diseases, immunocompromised patient, diabetic patient, concurrent intake of hepatotoxic medicines were excluded from the study

MATERIALS AND METHODS: A detailed history regarding personal, social environmental, menstrual and obstetric history was taken, general, obstetrical and gynaecological examination was done. vagina and cervix was examined for presence of inflammation, erosion, ulceration, bleeding and vaginal discharge which was examination for colour, consistency, odour and amount. Apart from routine investigations certain specific investigations were performed when indicated. Patients serum was analysed by commercially available ELISA KITS (as per manufactures instructions) for Chlamydia trachomatis. (II) hanging drop preparations of vaginal secretions were examined for trichomonas vaginalis. (III) mycelia of candida albicans can be seen by wet mount of vaginal discharge in 10% KOH. (IV) gardnerella vaginalis infection was diagnosed by **Amsel's** criteria

RESULTS & DISCUSSION: Total 1000 patients were taken for study out of which 530 patients were found to be positive for single or combination of infection (group I), 130 patients found to be positive for single infection (24.53%) 400 patients found to be positive for multiple infection (75.47%) 470 patients having no infection (47%) (group-II) (table1). Out of 530 patients, Chlamydia trachomatis found to be positive for 342 (64.53%) patients.^{3,6,7,8,9,10} trichomonas vaginalis found to be positive for 228 (43.01%) patients ' candida albicans found to be positive for

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206 (38.87%) patients, Gardnerella vaginalis found to be positive for 154 (29.05%) patients (table II).^{11,12,13,14,15}

Out of 400 antenatal women of group I, C. trachomatis along with T. vaginalis was found to be positive in 110 (27.50%) women, C. trachomatis along with G. vaginalis was found to be positive in 62 (15.50%) women, T. vaginalis along with G. vaginalis was found to be positive in 42 (10.50%) women, Candida albicans along with G. vaginalis was found to be positive in 24 (6.0%) women, C. trachomatis along with Candida albicans was found to be positive in 98 (24.50%) women and T. vaginalis along with Candida albicans was found to be positive in 64 (16%) women (table-III). Out of 530 patients of group I, 115 did not come for follow-up out of 470 patients of group II, 75 did not come for follow-up.

In the current study, labour outcome was studied in 415 antenatal women of group I and 395 antenatal women of group II. In group I, 215 (51.80%) had no effect, 32 (7.71%) had abortions and 168 (40.48%) had preterm labour and/or premature rupture of membranes. In group II 296 (74.94%) had no effect, 20 (5.06%) had abortions and 79 (20%) had preterm labour and/or premature rupture of membranes. The difference between two groups was found to be statistically significant for unaffected cases in absence of infections and preterm labour and/or PROM in presence of infections ($p < 0.05$) $p = 0.0000$ (table IV). but not found to be statistically significant for abortions in presence of infections ($p = 0.1635$; $p > 0.05$). Study of previous authors also showed the association of various genital infection on adverse pregnancy outcome.^{16,17,18,19,20,21,22}

In the present study, neonatal outcome was seen in 415 antenatal women of group I and 395 antenatal women of group II. In group I, 174 (41.92%) antenatal women had no effect on neonatal outcome 150 (36.14%) had low birth weight babies, 61 (14.70%) had birth asphyxia 10 (2.41%) had neonatal death and 20 (4.82%) had IUD. In group II, 304 (76.96%) antenatal women had no effect 44 (11.14%) had low birth weight, 31 (7.84%) had birth asphyxia 6 (1.52%) had neonatal death and 10 (2.53%) had IUD. The difference between two groups was found to be statistically significant ($p < 0.05$) = .0000 (table V).²³

CONCLUSION : The present study showed the significant association of genital infections with adverse pregnancy outcome, as it is also evident in previous similar studies. The observation that histologically apparent amniotic fluid infection are 2-3 folds more common when fetal membrane rupture just after the onset of labour suggests the concept that infection predates PROM.

The evidence that amniotic fluid samples from patients with PROM are more frequently colonized with pathogens than are samples from patients without PROM. Fetal infections may develop early in pregnancy to produce obvious stigmas at birth. The incidence of still births and IUDs caused by fetal infection appears to be remarkably consistent.

The study showed significantly higher incidence of obstetrical morbidities in women with lower genital tract infection, since genital infections are the root cause of these obstetrical morbidities, early detection and treatment of these infections is very important to improve obstetrical outcome.

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Table I: Distribution of total antenatal women in according to presence and absence of genital infections:

Women having infections	Number	Percentage
Group 1 (Positive for infections)	530 (With single infection-130) (With multiple infection-400)	53.00%
Group 11 (Negative for infections)	470	47.00%
Total	1000	100.00%

Table II: Distribution of antenatal women in group I according to presence and absence of various organisms:

Micro Organism	Number	Percentage
Chlamydia trachomatis	342	64.53%
Trichomonas vaginalis	228	43.01%
Candida albicans	206	38.87%
Gardnerella vaginalis	154	29.05%

Table III: Distribution of antenatal women in group I according to presence of combination of infection.

Combination of Micro Organism	Number	Percentage
C. Trachomatis + T. Vaginalis	110	27.50%
C. Trachomatis + G. Vaginalis	62	15.50%
T. Vaginalis + G. Vaginalis	42	10.50%
Candida + G. Vaginalis	24	6.00%
C. Trachomatis + Candida	98	24.50%
T. Vaginalis + Candida	64	16.00%
Total	400	100.00%

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Table IV: Distribution of antenatal women in group I and group II according to pregnancy outcome due to presence of genital of infection.

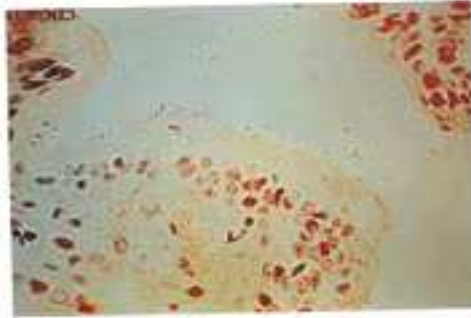
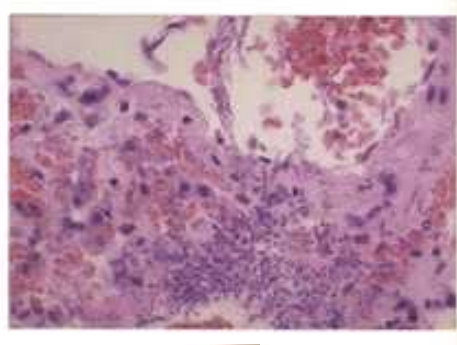
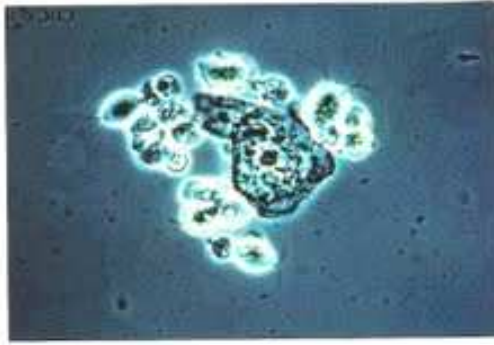
Outcome of Labour	Group I		Group II		P value
	No.	%	No.	%	
Unaffected	215	51.80%	296	74.94%	0
Abortions	32	7.71%	20	5.06%	0.16
Preterm Labour and / or premature reapture of membranes	168	40.48%	79	20.00%	0
Total	415	100.00%	395	100.00%	

P value $\chi^2 = 47.21$, $df=2$, $P= 0.0000$; $p < 0.05$

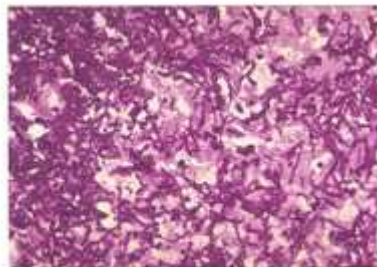
Table V: Distribution of antenatal women in group I and group II according to neonatal outcome due to presence of genital infection;

Outcome of Labour	Group I		Group II		P value
	No.	%	No.	%	
No. effect	174	41.92%	304	76.96%	
Birth asphyxia	61	14.70%	31	7.84%	
Neonatal death	10	2.41%	6	1.52%	
LBW	150	36.14%	44	11.14%	
IUD	20	4.82%	10	2.53%	
Total	415	100.00%	395	100.00%	

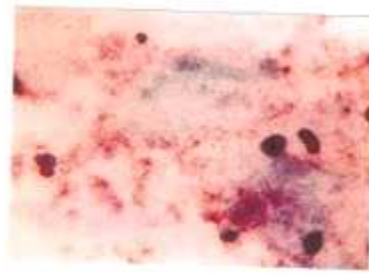
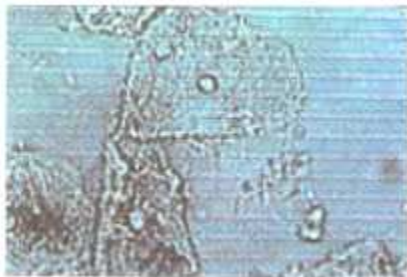
P value $\chi^2 = 106.96$, $df=4$, $P < 0.0000$: $P < 0.05$



TRICHOMONAS VAGINALIS



FUNGAL MYCELIA



CLUE CELLS: This study was conducted with an objective to know the prevalence of genital infection in pregnant women and the outcome of pregnancy affected by these infections.^{4,5}