Study of the prevalence of genital infections in pregnant women attending antenatal clinic using cervicovaginal cytology.

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Summary: Present study was undertaken to asses the prevalence of genital tract infections during pregnancy using cervicovaginal cytology. 25 (48.45%) women had one or other forms of infections as diagnosed by papanicolaou (PAP) stained smear examination. Most common was trichomoniasis 31 (12.02%) and coccobacillary infection 29 (11.24%). Cervicovaginal cytological examination was also found to detect asymptomatic infections, 23 (8.91%). Results showed early and late age pregnancy had more predilaction for genital tract infections.

Introduction:

The task of obstetrician is not only to bring a healthy child in to the world but also to give it to a healthy mother. Infections like bacterial vaginosis during pregnancy are found to be associated with preterm labour, premature rupture of membranes, chorioretinitis, foetal loss etc (Spiegel CA: 1991). Assessment of magnitude of problem is important to tackle the problem. Cytological changes in trichomoniasis, bacterial vaginosis, human papilloma virus, herpes simplex and other infections are excellently demonstrated in cervicovaginal smear. It may be the alternative to more time consuming and expensive microbial culture. Also many patients with genital infections may remain asymptomatic which could be detected by cytology. Thus routine cervicovaginal cytological smear help in better management of patient by giving indication to asymptomatic infections, and may help in better assessment of prevalence of genital infections in pregnancy. Against this background present study was undertaken to assess the prevalence of vaginal infections during pregnancy using PAP smear.

Material and Methods:

Present crosssectional study was undertaken in Department of Pathology, Government Medical College, Nagpur. Consecutive 258 pregnant women attending antenatal clinic for first time, with or without any complaints irrespective of age, parity and period of gestation in the month of July 1997 were included in the study. Cervicovaginal scrap cytological smear was taken from every study subjects and stained with papanicolaou stain. Smears were read by staining with papanicolaou stain by single observer and then correlated with symptoms. Diagnostic criteria used were as given by Gupta (1991) and Wendal Jr. (1990).

Table I

Age and Period of Gestation and Prevalence of Genital Tract Infections

Age Group (Years)	N	Prevalence of infections	Period of Gestation	N	Prevalence of infections
≤19	50 (19.38)	33 (66.00)	Ist Trimester	99 (38.37)	31 (31.31)
20-29	182 (70.55)	72 (39.56)	2nd Trimester	83 (32.17)	52 (59.77)
30-39	26 (10.07)	20 (76.92)	3rd Trimester	76 (29.46)	42 (55.26)
	258 (100)	125 (48.45)		258 (100)	125 (48.45)

Age ≤ 19 Vs Age 20 to 29 years
(z = 4.05, p < 0.00002, HS)

Age ≥ 30 Vs Age 20 to 29 years
(z = 4.65; p < 0.00002, HS)

N= Number of study subjects

Ist trimester Vs IInd trimester
(z=4.28, p<0.00002, HS)

Ist trimester Vs IIIrd trimester
(z = 3.42, p <0.0006, HS)

Results:

All patients were between 19 to 39 years of age. Maximum 156 (60.46%) belonged to age group 20 to 29 years and majority 99 (38.31%) were presented in Ist trimester of pregnancy (Table I). 135 (52.33%) had symptoms related to genital tract, common were white discharge per vaginum 54 (20.93%) and pruritus vulvae 26 (10.08%) (Table II). On cervicovaginal cytology prevalence of infection was observed to be 125 (48.45%). 23 (8.91%) asymptomatic women also showed cytological changes of infections. Higher prevalence was observed in younger (<19 years) and older (≥ 30 years) pregnancies. While infection rate was significantly higher during 2nd and 3rd trimester pregnancy (Table I). Commonest cause of genital infection was observed to be trichomoniasis 31 (12.51%), followed by coccobacilli 29 (11.69%), while in 35 (14.11%) smear changes were nonspecific. (Table III).

Table II

Presenting Symptoms in Study Subjects

Symptoms	Study Subjects
Asymptomatic	123 (47.67)
Symptomatic	135 (52.33)
• White discharge per vaginum	64 (47.40)
• Pruritus Vulvae	28 (20.74)
• Burning micturation	19 (14.07)
• Backache	32 (23.70)
• Pain in abdomen	09 (6.67)
• Bleeding per vaginum	08 (5.93)
• Postcoital bleeding	04 (2.96)
Total	258*

Figure in parenthesis indicates percentages

* Multiple symptoms

Table III

Result of Cervicovaginal Cytology (Pap Stain)

Conditions	Study subjects
• Trichomoniasis	31 (12.02)
• Fungal organism consistent with candida albicans	09 (3.49)
• Predominence of cocobacilli consistent with shift of microflora	29 (11.24)
• Herpes Simplex	01 (0.39)
• Mixed	05 (1.94)
• Non specific infections	35 (13.56)
• Inflammatory reactive changes	15 (5.81)
Total	125 (48.45)

Discussion and Conclusion:

Almost half (48.45%) of the pregnant women had cytological evidence of infections. Commonest were trichomoniasis and coccobacillary infections. This has also been endorsed by earlier investigator, (Oliveira, 1982). Moreover asymptomatic women also had cytological changes of genital tract infections. This is consistent with the findings of Petersdorf et al (1957). Thus emphasising the need for routine screening of pregnant women, for genital tract infections, as genital tract infections during pregnancy was repeatedly found to be associated with bad pregnancy outcome, (James et al 1992, Cohen et al 1990). Younger and old age pregnancy was reported to be associated with bad pregnancy outcome, (Olsen et al 1995, Zhang et al 1991), increased incidence of genital infections may be one of the contributing factor.

In conclusion, genital infections during pregnancy is a significant problem. More so during young age and old age pregnancies and as asymptomatic infections are common, routine screening for genital infections is necessary. Cervicovaginal scrap cytology with papnicolaou stain provides viable alternative to microbial culture to arrive at diagnosis.

Reference:

1. Cohen L, Veille JC, Calkins BM: JAMA: 263; 3160, 1990.
2. Gupta PK: Microbiology, inflammation and viral infection, Comprehensive Cytopathology by Biboo, Ist edn 1991, Philadelphia, W.B. Saunders Company, 115, 1991.
3. James JA, Thompson JL, Gelbort SM, O Kaiser P, Hanson L: Am. J. Obstet. Gynec.: 166(3); 859, 1992.
4. Oliveira AMB, Keppler MM, Luisia A, Tarico S, Lopes VLD, Debscio D, Luiz G: Acta Cytol: 26 (5): 636, 1982.
5. Olsen P, Loara E: Am. J. of Epi: 142 (11); 1184, 1995.
6. Petersdorf RG, Curtin JA, Hoepric PI, Peeler RN, Bernett IG Jr: N. Eng J Med: 257; 1001, 1957.
7. Spiegel CA: Bacterial Vaginosis, Clin Microbiol Rev: 4 (4); 485, 1991.
8. Wendel GD Jr: Sexually transmitted disease in pregnancy, Semin. Perinatal. (US); 14 (2); 171, 1990.
9. Zhang B, Chan A: Aut. N.Z. J. Obstet. Gynec.: 81; 291, 1991.