

# PREVALENCE OF PATHOGENIC BACTERIA IN GENITAL TRACT IN PRETERM LABOUR

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## SUMMARY

Maternal genital tract infection particularly subclinical amniotic fluid infection may cause preterm labour and a premature delivery. A total of 75 patients of preterm labour and 50 patients of normal term labour were studied for bacteriological vaginal flora. Pathogenic bacteria could be isolated in 44% cases in preterm group in comparison to 15% cases in term group, a statistically significant difference ( $P < 0.01$ ). *E. coli* was the commonest organism to be isolated with 45.45% and 37.50% incidence in preterm and control group respectively followed by *klebsiella pneumonia* with 36.36% and 25.00% incidence in the two groups respectively. Micro-organisms were sensitive to gentamycin in 72.21% and 37.50% cases in study and control group respectively, while 55.55% and 50.00% microbes were sensitive to streptomycin in the two groups.

Hence bacterial flora in genital tract significantly increases incidence of preterm labour and use of gentamycin is recommended in preterm labour.

## Introduction

Preterm labour is onset of labour pains after 28 weeks and before 37 weeks of pregnancy (WHO 1986). Incidence of preterm labour is 8-10% in India and 12-18% in Hospital deliveries (P.K. Devi 1984). Genital tract infections increase the incidence of preterm labour. Present study was conducted to find out importance of bacterial flora in genital tract in preterm labour.

## Material and Methods

A total of 75 patients of preterm labour were chosen where other aetiological factors like multiple pregnancy, PIH, hydramnios and congenital malformations were ruled out. 50 patients of normal term labour were taken as controls. History and examination was done in all the patients. Investigations undertaken were as below: Hb, TLC, DLC, Complete urine examination, Urine for culture and sensitivity. Blood sugar, fasting and post-prandial and

blood urea. High vaginal swabs were taken immediately in all the patients and sent for bacteriological examination and drug sensitivity tests. Babies born were examined thoroughly and their weight and Apgar scoring was noted. Patients of pre-term labour were followed up for any evidence of infection clinically as well as the laboratory tests like leucocytosis.

### Results

Mean age in study group was 19.1 years and 20.5 years in control group. Mean maturity was 35.2 weeks and 39.2 weeks in the two groups respectively. Mean parity. Mean birth weight, perinatal mortality, Mode of delivery and evidence of infection, were as shown in Table 1.

Vaginal swab was sterile in 56% (42 cases) in study group and 84% (42 cases) in control group, a statistically significant difference. Pathogenic bacteria were present in 44% (33 cases) in study group in comparison to 16% (8 cases) in control group. E.coli was the commonest organism in both the groups but it was present in 45.45% (15 cases) in study group and 37.50% (3 cases) in control group (Table

TABLE I  
SHOWING CHARACTERISTICS OF  
PATIENTS IN TWO GROUPS

Sr. Characteristics	Study Group	Control Group
1. No. of patients	75	50
2. Mean age	19.1 yrs.	20.5 yrs.
3. Mean parity	2	3
4. Mean maturity (weeks)	35.2	39.2
5. Mean birth weight	2.05	2.95 kgm
6. Perinatal mortality	34%	14%
7. Mode of delivery		
i) Vaginal delivery	92%	90%
ii) LSCS	8%	10%
8. Evidence of infection	33.03%	0%

II). *Klebsiella pneumonia* was the second common micro-organism with 36.36% and 25.00% incidence respectively in the two groups. Other pathogenic bacteria were proteus, staphylococcus aureus and streptococcus haemolyticus (Table II).

Micro-organisms were sensitive to gentamycin in 72.71% and 37.50% cases in study and control group respectively, while 55.55% of them were responsive to streptomycin in study group in contrast to

TABLE - II  
SHOWING MICRO-ORGANISMS IN TWO GROUPS

Sr. No.	Micro-organism	Study Group		Control Group		Statistical Significance
		No. of cases	%age	No. of cases	%age	
1.	Sterile	42	56	42	84	p<0.01
2.	Bacteria	33	44	8	16	p<0.01
3.	E.coli	15	45.45	3	37.50	p<0.05
4.	<i>Klebsiella pneumonia</i>	12	36.36	2	25.00	p<0.05
5.	Proteus	3	9.09	-	-	p<0.01
6.	Staphylococcus aureus	2	6.06	1	12.50	N.S.
7.	Streptococcus haemolyticus	1	3.03	2	25.00	N.S.
Total No. of cases		75		50		

N.S. Not significant

50.00% in control group (Table III). Only 9.09% microbes were sensitive to ampicillin in vitro in study group in comparison to 50.00% in control group. Sensitivity to other drugs like chloramphenicol, penicillin and tetracyclines is shown in Table III.

Minkoff et al (1984) studied prospectively vaginal flora in pregnancy to find out risk factors for prematurity and Prom and showed a significant correlation between the presence of staphylococcus, bacterioids, trichomonads and mycoplasma

TABLE - III  
SHOWING DRUG SENSITIVITY

Sr. No.	Antibiotic	Study Group		Control Group	
		No. of cases	%age	No. of cases	%age
1.	Gentamycin	24	72.71	3	37.50
2.	Streptomycin	18	55.55	4	50.00
3.	Chlormphenicol	6	18.18	2	25.00
4.	Penicillin	2	6.06	2	25.00
5.	Ampicillin	3	9.09	4	50.00
6.	Tetracycline	3	9.09	1	12.5

Out of 33 patients having pathogenic bacteria in their vagina only 12 (33%) had evidence of infection in the form of fever, foul smelling vaginal discharge for leucocytosis, while in control group there was no evidence of infection for two days in any patient after which patients were discharged and there was no follow up of these patients.

#### Discussion

Preterm labour has been shown to be associated with sub-clinical amniotic fluid infection and bacterial vaginosis (Gravett et al 1986). Pre-term labour is also associated with PROM. It was observed by Guzick and Winn (1985), that incidence of pre-term labour was 5.4% when neither chorioamnionitis nor PROM was present, 11.9% when chorioamnionitis was present without Prom and 56.5% when both were present. Among patients with Prom, chorioamnionitis.

infection with risk of developing Prom being 1.4 times in trichomonas infection and 2.1 times in Staphylococcus infection. Our results also showed significant correlation in pathogenic bacteria with 44% incidence in preterm group than only 16% in control group. E.coli was responsible for 45.45% and Klebsiella pneumonia infection for 36.36% cases in preterm group.

#### References

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