CHLAMYDIA TRACHOMATIS INFECTION : A CAUSE FOR PRETERM BIRTH AND HIGH PERINATAL LOSS

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SUMMARY

Chlamydia trachomatis antibody titre was determined by ELISA technique in two groups of patients. Group I comprised 64 women who had an unexplained preterm birth and Group II had 20 healthy women who had normal term birth. In group I 40.6% women were positive for chlamydia as compared to 15% in group II.

The perinatal mortality rate in chlamydia positive mothers of group I was 461.5 and that in negative mothers was 105.2, the difference was statistically significant.

INTRODUCTION

Premature labour occurs in 5-8% of all births, and accounts for 85% of all perinatal deaths. About 60% of all preterm births occur without any known cause (Hoffman et al 1984). There is still a debate on whether infection actually precedes and initiates preterm labour or is merely an accompanying event. A large number of organisms including chlamydia trachomatis have been isolated from women delivering before term (Martin et al 1982, Harrison et al 1983). In recent years many workers have found an association between ch. trachomatis infection, prematurity and high perinatal morbidity and mortality.

MATERIAL AND METHODS

The present study was planned to detect antibodies against Ch. trachomatis in women having unexplained preterm birth and to find out relation between chlamydia infection and perinatal outcome. The two groups of patients were selected from labour ward of Pt. B.D.S.M.C. Rohtak.

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Accepted for Publication on 19.10.95

Group I consisted 64 women who had unexplained preterm birth. Group II had 20 women who had normal term delivery.

Women who had any apparent infection or antibiotic therapy in preceding four weeks were excluded from the study.

Besides complete history, physical examination, routine investigations and high vaginal swab culture, the blood samples were tested by enzyme linked immunosorbent assay (ELISA) technique to detect antibody titers of chlamydia trachomatis using chlamydiazyme test kit (Serrano diagnostic Switzerland).

OBSERVATIONS

The patients in the two groups were matched for their age, parity, height, weight, socio-economic and nutritional status. All women were Rh positive. The total and differential leucocyte count, fasting blood sugar and Hb gm% in all women were within normal range.

Antibody titres against Ch. trachomatis

Out of 64 women in group I, 26 (40.6%) had titres in the range to be positive for chlamydia infection, where as in group II only 3 (15%) were positive for chlamydia as shown in Table I.

Table I

Antibody titres of Chlamydia positive and negative cases in two groups.

	Total No. cases	Positive Antibody titres (0.658+0.035)	Negative Antibody titres. (0.160+0.011)
Group I	64	26 (40.62%)*	38 (59.38%)
Group II	20	3 (15%)*	17 (85%)

* p value < 0.001

Table II

Relationship of Chlamydia infection with other lower genital infections

	Group I			Group II		
	HVS+ve	HVS-ve	Total	HVS+ve	HVS-ve	Total
Chlaymdia +ve	6 (23)	20 (77)	26	1 (33.3)	2 (66.6)	3
Chlaymdia -ve	8 (21)	30 (79)	38	2 (11.8)	15 (88.2)	17
Total	14 (21.8)	50 (78.2)	64	3 (15)	17 (85)	20

p value > 0.01

Figures in parenthesis indicate percentage.

Relationship of Chlamydia infection to other lower genital infections

Of 26 Chlamydia positive women in group I, 6 (23%) had positive vaginal swab culture where as of 38 negative women, 8 (21.8%) had positive culture as shown in Table II

Table III
Chlamydia infection in relation to gestational age in Group - I

	Total No. cases	Gestation in weeks <33	33-37	Mean
Chlamydia +ve	26	22 (84.6)	4 (15.4)	31.6±
Chlamydia -ve	38	25 (65.8)	13 (34.2)	33.08±

p value < 0.001

Table IV
Chlamydia infection in relation to birth weight in Group I

	Total No. cases	Gestation in weeks <1.5	1.5-2	Mean
Chlamydia +ve	26	21 (80.8)	5 (19.2)	1.58±
Chlamydia -ve	38	16 (42.1)	22 (57.9)	1.88±

p value < 0.001

Table V
Chlamydia infection and Perinatal Mortality in Group - I

	No.of cases.	No. of deaths	PNMR
Chlamydia +ve	26	12	461.5
Chlamydia -ve	38	4	105.2
Total	64	16	250.0

p value < 0.001

Chlamydia infection in relation to gestational age and birth weight in preterm birth

Out of 26 positive mothers 22 (84.6%) delivered prior to 33 weeks of gestation and 21 (80.8%) had birth weight less than 1.5 kg. whereas in Chlamydia negative mothers the respective figures were 65.8% and 42.1%. The difference was statistically significant as shown in Tables III & IV.

Chlamydia infection and perinatal mortality in preterm births

There were 12 perinatal deaths amongst 26 positive mothers as compared to 4 deaths amongst 38 negative mothers, giving rise to a PNMR of 461.5 Vs. 105.2. Overall PNMR in preterm births was 250 as shown in Table V.

DISCUSSION

High incidence of chlamydia infection in mothers having preterm birth has been reported by Martin et al (1982), Ross et al (1988) and Lamont & Taylor (1986). In the present study the incidence of chlamydia infection was 40.62% in women having unexplained preterm births as compared to 15% in healthy gravidas; the difference was statistically significant with p value < 0.001. However, contrary to the observation of Toth et al (1988), in the present study the high vaginal swab culture was positive in 23% of chlamydia positive and 21% of the chlamydia negative cases. Further it was observed that more of chlamydia positive mothers delivered at less gestational period (84.6% Vs. 65.8%) and more babies were less than 1.5 Kg. weight in chlamydia positive mothers (80.8% Vs. 42.1%). The mean birth weight was 20% less (1583 gms Vs. 1884 gms) and mean gestational age 12 days less (31.6 week Vs. 33.08 weeks) in chlamydia positive mothers. The mean antibody titre was significantly higher in mothers who delivered prior to 33 weeks (0.612 Vs. 0.476).

The perinatal mortality rate was 461.5 in chlamydia positive mothers as compared to 105.2 in chlamydia negative mothers. Martin et al (1982) observed PNMR of 330 in chlamydia positive and 38 in negative preterm births.

To conclude the observations of present study, it may be said that chlamydia infection may be a causative factor in hitherto unexplained preterm births and severity of infection may be related to gestational age, birth weight and perinatal loss.

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