

Chlamydia Infection and its Consequences in Early Pregnancy

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Summary

C. Trachomatis a recently recognized microbe, plays an important role in STD, but during early pregnancy its serological pattern had not been explored well, especially from northern part of India. In the present study, 200 women with early pregnancy, without history of spontaneous abortion were included. C.I. IgM antibodies were raised in 90 cases (45%) and C.T. IgG antibodies were raised in 35 cases (17.5%). Among the cases seventy of the 90 cases with raised C.T. antibody received chemotherapy (Sub Group A₁) and 20 did not receive any chemotherapy (sub group A₂). Twenty cases (28.6%) in subgroup A₁ and 14 cases (70%) in sub group A₂ ended into spontaneous abortion. The titre of IgM was persistently high in 1:16 or more dilution in 85.7% in subgroup A₁ and 95.0% in subgroup A₂. The IgG was not significantly raised in both the subgroups.

In spontaneous abortion cases Group B IgM was raised in 72% and IgG was raised in 8%.

Therefore evaluation of IgM antibody during Ist trimester pregnancy is significant and appropriate treatment will improve pregnancy outcome.

Introduction

Chlamydia trachomatis plays an important role in cases of nongonococcal urethritis, premature rupture of membranes, low birth weight babies, PID, STD and infertility (Jain et al., 1991, Gencay et al., 1995, Numazaki et al., 1989, Tadmor et al., 1993, Agarwal et al., 1996).

However, antibody titre in normal population and during pregnancy has not been well documented in Indian literature and in particular from Northern India. Though adverse foetal outcome have been pointed out during pregnancy with raised C.Trachomatis IgM antibody, its definite role has yet to be established.

The present study have been aimed at significance of C.Trachomatis IgM/IgG antibodies in pregnant women, so that its detection and management in early pregnancy can prevent spontaneous abortion and thus reducing pelvic inflammatory diseases and infertility and providing safe motherhood.

Material and Methods

For this investigation of C.Trachomatis IgM, IgG 200 pregnant women without previous history of spontaneous abortions were included (Group A) which were further divided into subgroup A₁ patients who have received the antibiotic therapy and subgroup A₂ who did not receive any antibiotic therapy. Fifty cases with spontaneous abortion constituted Group B.

The study was carried out in the Department of Obstetrics & Gynaecology and Department of Microbiology, S.N. Medical College, Agra, from October 1996 to November 1998 between the age group 20-36 years (mean age 24 years).

Sera were collected and tested for chlamydia specific IgM/IgG antibodies using Ipazyme assay (Savyon Diagnostic Ltd., Israel).

Table I
CT IgM and CT IgG Antibody Titre in Group A and B

Study Group	C.T Antibodies	1:8	Antibodies Titre			Total
			1:16	1:32	1:64 Or more	
A. N=200	IgM	18	40	22	10	90 (45%)
Early Pregnancy	IgG	12	16	07	-	35 (17.5%)
B. N=50	IgM	02	06	20	08	36 (72.0%)
After Abortion	IgG	01	-	-	03	04 (8.0%)

Observation

Table I shows that in Group A, C.T. IgM antibodies were raised in 45% cases and IgG in 17.5% cases while in group B they were raised in 72% and 8% respectively.

The serological pattern in both groups have been depicted in Table II. In subgroup A₁ IgM was significantly raised upto dilution between 1:16 & 1:32 (44 cases, 62.8%) while IgG was not significantly raised. Similarly in subgroup A₂ also, IgM was significantly raised between dilution 1:16 & 1:32, (17 cases, 85%) and IgG was not significantly raised.

As shown in Table III, in subgroup A₁ all the 70 cases had received 100mg Doxycycline B.D. for 7 days, 50 cases had progressed to term while 20 cases had terminated into spontaneous abortion. Further 18 cases

out of 70 cases had also raised C.T. IgG antibody. In group A₂ only 6 cases had normal pregnancy but C.T. IgG antibody titre was upto 1:16 or less.

Discussion

C.Trachomatis an intracellular microbe had been reported in female reproductive tract infections like PID, low birth weight, nongonococcal urethritis, endometritis, abortion and sterility, (Tadmor et al., 1993, Rao et al., 1994, Agarwal et al., 1996).

In our present study IgM/IgG antibodies were found in 72.0% and 8.0% in spontaneous abortions. These findings are in accordance with Yashodhara et al., 1998 viz 50% & 3.8% respectively.

In normal pregnancy in asymptomatic cases it had been reported in 15% of cases. (Joshi et al., 1994).

Table II
Serological pattern in subgroup A₁ & A₂ and subgroup B.

Group A	C.T Antibodies	1:8	Antibody Titre			Total	%
			1:16	1:32	1:64 or more		
Sub Group A ₁ N=70 cases	IgM	10	30	14	11	70	100.0
	IgG	03	10	02	-	15	21.4
Sub Group A ₂ N=20 cases	IgM	01	07	10	02	20	100.0
	IgG	01	02	04	-	07	35.0

Table III
Outcome of Pregnancy with C.T. Infection

Group A divided.	Normal Delivery		Spontaneous Abortion	
	No.	%	No.	%
Sub Group A ₁ (N=70) With treatment	50	71.4	20	28.6
Sub Group A ₂ (N=20) Without treatment	06	30.0	14	70.0

In normal pregnancy in our study, IgM was raised in 45% while IgG was raised in 17.5% only. However, in sub group A₁ the cases with titre 1:16 or less reached full term pregnancy and cases with titre 1:32 or more (20 out of 25) ended into spontaneous abortion.

In subgroup A₂, 12 cases who were having titre 1:32 or more and 2 cases having titre 1:16 had spontaneous abortions and remaining 6 cases reached full term pregnancy.

Thus the present study concludes that

- (a) In early pregnancy detection of CT IgM antibodies should be done.
- (b) In case it is raised it should be treated.
- (c) IgM is more significant than IgG.

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