

ROLE OF MYCOPLASMA IN DIFFERENT TYPE OF ABORTIONS

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SUMMARY

The *Ureaplasma urealyticum* have been considered as an etiological agent for S.T.D., still-birth and low birth weight babies, endometritis, cervicitis, salpingitis or habitual abortion.

The present study comprises of different types of abortions (Threatened 35 cases, Inevitable 30 cases, Missed 22 cases, and Habitual 13 cases) along with 50 cases in control group. Isolation of *U. Urealyticum* and *Mycoplasma hominis* in different types of abortions have been discussed. Association of anaerobic organisms with that of *U. urealyticum* in 6 out of 7 cases strongly suggest the synergistic action of these organisms specially in cases of habitual abortion.

INTRODUCTION

The *Mycoplasma* a highly pleomorphic prokaryotic cell, has gained significance as human pathogen particularly of female genital tract only after 1960 and has been frequently isolated from S.T.D. cases (Friberg, 1980), infertility cases (Casell et al 1983; Prabhakar et al 1989), female genital tract infections (Agrawal et al., 1991), still risk group pregnancies (Kundsin and Driscoll, 1970) and product of spontaneous abortions

(Sompolinsky et al., 1975). However, its isolation in different type of abortions has not been explored (Harwick et al., 1970; Friberg, 1980 and Agrawal et al. 1991).

The present study was aimed to isolate and identify the *Mycoplasma* species and to pinpoint their etiological role in pathogenesis of various type of abortions.

MATERIAL AND METHOD

The present study was carried out in

M.H. = *Mycoplasma hominis*
U.U. = *Ureaplasma urealyticum*

the Department of Obstetrics & Gynaecology and Department of Microbiology, S.N. Medical College, Agra, between the period of 1990-1993. All the cases were between 18-32 years of age with gestational period less than 20 weeks. In control group, medical and other patients without any bad obstetric history and of same age group and gestational period were considered. All cases had V.D.R.L. test negative and other causes of abortion excluded.

Four high vaginal swabs were collected. Two of them were immersed in Mycoplasma broth, one in M.H. broth (pH 7.0) and other in U.V. broth containing urea (pH 6.0) supplemented with 20% unheated sterile horse serum, 0.1% urea; 0.02% phenol red as an indicator with 100 ug of Ampicillin and 205 ug of Amphotericin-B/ml of broth base. The tubes were

incubated at 37°C with 5% CO₂ for 48 to 72 hrs. Only those cultures which had flocculation without turbidity were subcultured on Mycoplasma agar with antibiotics. The tubes with turbidity were subjected for serial dilution method to remove turbidity and were incubated again. The final identification was done according to criteria laid down by Tully & Razin (1983).

The third swab was inoculated in sodium Thioglycollate broth for anaerobic organisms and fourth one on Blood agar/MacConkey and Sabouradqs for secondary organism and fungus.

OBSERVATIONS

A total of 150 cases were selected between Jan. 1990 - Dec. 1993. Out of these, 100 cases were for study group

Table I
Mycoplasma species Isolation in Different Groups

Groups		M. hominis		U. urealyticum		Total	
		No. of Cases	%	No. of Cases	%	No. of Cases	%
Study Group (A)	100	5	5.0	26	26.0	31	31.0
Threatened	35	1	2.9	8	22.8	9	25.7
Inevitable	30	2	6.6	5	16.7	7	23.3
Missed	22	1	4.5	7	31.8	8	36.3
Habitual	13	1	7.7	6	46.1	7	53.8
Control Group (B)	50	3	6.0	1	2.0	4	8.0

The M. hominis were isolated in 5 cases while U. urealyticum was isolated in 26 cases in study group (Fig. I & II). In control group M. hominis was isolated in 3 cases.

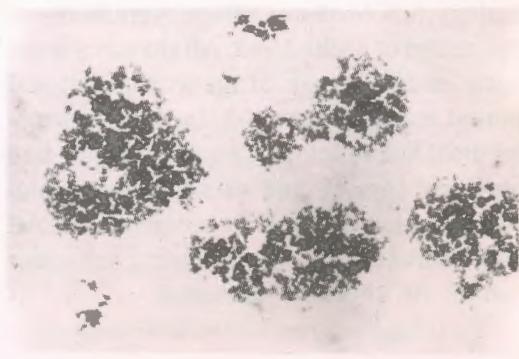
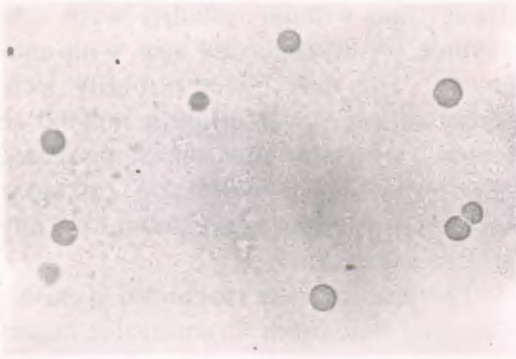


Fig. 1 : Mycoplasma hominis colony on PPLO Agar.

Fig. 2 : Colony Impression of Mycoplasma hominis Giemsa Stain X10

Table II

Association of Secondary organisms in different type of abortions

Types of Organisms	Association	Threatened	Inevitable	Missed	Habitual	Total	Control Group
		(35)	(30)	(22)	(13)	(100)	(50)
Candida		5	6	3	7	21	3
Aerobic	A	22	18	10	9	49	4
	B	-	1	7	-	8	7
	C	8	10	1	1	12	8
	D	5	1	4	3	13	-
Anaerobic	A	8	10	7	6	31	10
	B	10	6	2	1	19	12
	C	13	9	10	4	36	8
	D	4	5	3	2	14	-

A = No organism, B = One organism, C = Two organisms, D = More than two organisms

The anaerobic organisms were more frequently isolated in study group (69 cases; 69%) than in control group (15 cases; 30%) and still more consistently in threatened abortion (27 cases out of 35 cases) and inevitable abortion (20 cases out of 30 cases) than in habitual abortion (7 cases out of 13 cases). In control group also, anaerobic organism were more frequently isolated (20 cases out of 50 cases) than aerobic organisms (15 cases out of 50 cases).

Table III
Association of Secondary organisms with Mycoplasma

Organisms	Study Group								Control Group	
	Threatened		Inevitable		Missed		Habitual		No. of cases	%
	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
Mycoplasma alone	7	20.0	5	16.7	5	22.7	-	-	3	6.0
Mycoplasma associated with Candida	1	2.9	1	3.3	1	4.5	1	7.7	1	2.0
Mycoplasma associated with aerobic organisms	1	2.9	-	-	1	4.5	1	7.7	-	-
Mycoplasma associated with anaerobic organisms	-	-	1	3.3	1	4.5	5	38.4	-	-
Total	9	25.8	7	23.3	8	36.2	7	53.9	4	8.0

From Table III it is evident that in cases of habitual abortion the Mycoplasma were associated with anaerobic organisms (38.4%) while it was not seen alone in any of the habitual abortion cases.

(Group A) which included threatened abortion 35 cases, inevitable abortion 30 cases, missed abortion 22 cases and habitual abortion 13 cases. Control group (Group B) had 50 cases.

The Mycoplasma species isolation in different groups as studied in the present work have been depicted in Table I.

DISCUSSION

The Mycoplasma hominis and Ureaplasma urealyticum have been isolated in 5% and 26% in study group and 6% and 2% in control group. Stray-Pederson et al (1978) have reported 6% and 28% respectively in control group while Sharma et al (1989) 22.7% cases in normal healthy pregnant women. In our previous report (Agrawal et al., 1991) it was 4% in each group.

The Mycoplasma species isolated in different type of abortions had seldom been reported. In India, Mycoplasma hominis (7.7%) and Ureaplasma urealyticum (46.1%) have been reported in habitual abortions (Gupta & Buckshee 1982). The other types have not been considered. Further its association with anaerobic organisms had hardly been considered. In the present study, 6 out of 7 positive cases had anaerobic organisms, suggesting a strong indication of association of Ureaplasma urealyticum with anaerobic organisms. This difference is statistically

significant at 5% level (by Z test) in study group. Comparing the study and control groups, the difference of Mycoplasma species is statistically significant at 1% level (by Z test). However, a bigger series is required for further support of this view.

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