

## TOXOPLASMOSIS AND ABORTION

by

M. N. PAL,\* D.G.O., M.D., M.A.M.S.

and

Prof. D. S. AGGARWAL,\*\* M.D., Ph.D. (Lond)

### Introduction

Toxoplasmosis is a protozoal disease which occurs in acquired and congenital forms. The recent experimental studies (Frenkel, 1970; Hutchison *et al* 1970) suggested that *T. gondii* belongs to coccidian species related to the genus *Isospora*.

Many authors have reported increased incidence of abortion in women infected with *T. gondii* (Chech and Jirovec, 1960; Remington *et al* 1964), whereas others consider it to be of no difference from that of general population (Holmdahl, 1953; Vorherr, 1965).

In the present study an attempt was made to find out correlation, if any, between toxoplasma infection and abortion and its role in habitual abortion. The study was conducted at Irwin Hospital, New Delhi during 1971 to 1972.

### Material and Methods

Sera from 67 cases of abortion which included 44 cases of sporadic abortion and 23 cases of habitual abortion collected

\*Department of Obstet. & Gynaecology, Irwin Hospital, New Delhi.

\*\*Department of Obstet. & Gynaecology and Department of Microbiology, Maulana Azad Medical College and Associated Irwin and G. B. Pant Hospital, New Delhi.

\*Lecturer, Department of Obstet. & Gynaecology, Postgraduate Institute of Medical Education and Research, Chandigarh.

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from patients admitted to obstetrics ward or attending the antenatal clinic of Irwin Hospital, New Delhi and also 75 control cases with good obstetric history were tested against *Toxoplasma* infection by indirect Haemagglutination test (Prakash, 1966).

The sera were stored at  $-20^{\circ}\text{C}$  at all times except when in use. The antigen was prepared for indirect haemagglutination test by repeated freezing and thawing from Rh-strain of *T. gondii* which was supplied by Prof. Mahapatra of All India Institute of Medical Sciences, New Delhi. The antigen was titrated and found to be comparable with the one originally obtained from AIIMS, New Delhi.

A titre of 1:200 and above were taken as significant for indirect haemagglutination test.

### Result with Observation

Table I shows the titre of toxoplasma antibodies in abortion and control cases. The significant titre were observed in 1.4% cases by indirect haemagglutination test while none of the control sera showed antibodies to this level.

Table II shows the comparison of antibody titres in habitual and sporadic abortion cases by haemagglutination test. A rise in antibody titre of 1:64 and above was noted in 8 (18.1%) of cases with sporadic abortion compared to 11 (47.8%) cases with habitual abortion

TABLE I  
Comparison of Antibody Titres in Study and Control Groups

Type of cases	No. of cases	Haemagglutination test			
		H.A. titre		% +ve	
		1:64 1:128	1:256 & above	1:64 1:128	1:256 & above
Abortion	67	19	1	28.3	1.4
Control	75	1	Nil	1.3	Nil

TABLE II  
Comparison of Antibody Titres Habitual and Sporadic Abortions

Group No.	Type of abortion	Total No. of cases	Haemagglutination test			
			H.A. titre		% +ve	
			1:64 1:128	1:256 & above	1:64 1:128	1:256 & above
I	Habitual	23	11	1	11 (47.8%)	1 (4.3%)
II	Sporadic	44	8	Nil	8 (18.1%)	Nil

while at significant titres (1:200 and above) none of the cases from sporadic abortion became positive compared to only 1 (4.3%) out of 23 cases with habitual abortion.

#### Discussion

Jones *et al* (1966) on their study of 3796 women concluded a significant correlation between Toxoplasmosis and abortion.

In the present study of 44 cases of sporadic abortion, antibodies against Toxoplasma infection was found only in 18.1% by haemagglutination test. The findings in the present study are in accordance with those of Thomascheck *et al* 1961 and Remington *et al* 1964.

There are conflicting data considering its importance to habitual abortion. Holmdahl, 1953 had observed that a previous toxoplasmic infection in the mother does not incur any risk for the foetus in future pregnancy rather antibodies in the

maternal serum probably protects the foetus against toxoplasmosis.

Kimball *et al* 1971 in their study on 73 cases of habitual abortion and Southam, 1972 on 25 cases of habitual abortion did not find any association between habitual abortion and Toxoplasmosis.

Contrary to above Langer, 1963 reported isolation of *T. gondii* from some of the women who had habitual or repeated miscarriages.

Robertson, 1960 isolated Toxoplasma *gondii* from a Chronically infected patient with history of repeated abortion. Arguelles and Contreas, 1967 found a 68% correlation between Toxoplasma infection and habitual abortion.

In the present study out of 23 cases of habitual abortion 47.8% were positive by haemagglutination test with a titre of 1:64 and above. The higher titre (1:200 and above) were found only in 1 (4.3%) case. Furthermore, 1 patient with habitual abortion showed a rising titre from

an initial titre of 1 : 128 to a final titre of 1:1024 by haemagglutination test.

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