

## **STUDY TO TOXOPLASMA, RUBELLA, CMV, CHLAMYDIA AND HERPES OF WOMEN WITH RECURRENT SPONTANEOUS ABORTION IN BABYLON PROVINCE**

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**ABSTRACT:** *Background: The acute and chronic infections which are caused by Toxoplasma gondii, Rubella virus, Cytomegalovirus (CMV) and the Herpes Simplex Virus (HSV ) during pregnancy are often associated with adverse foetal outcomes and reproductive failures. Objective: This study aims at evaluating IgM, IgG antibodies for acute and chronic infection for more causes of abortion spreading that is Toxoplasma, Rubella, CMV, Chlamydia and Herpes Methods.Methods and Materials: Sera were collected from the women with Bon and they were tested for the presence of specific IgM, IgG antibodies against the Toxoplasma gondii, Rubella virus, Cytomegalovirus (CMV) and the Herpes Simplex Virus (HSV ) infections by ELISA. The specific IgM antibodies were found to be positive :Result toxoplasmosis, in 126 (30.4%) cases for the Rubella virus, in 130 (34.7%) cases for CMV and in 151 samples (33.5%) for the HSV-2 infections.Alsospecific IgG antibodies were found to be positive in 74(19.4%) cases for toxoplasmosis, in 126 (30.4%) cases for the Rubella virus, in 130 (34.7%) cases for CMV and in 151samples (33.5%) for the HSV infections .Conclusion: The present study demonstrates a strong association between the infectious agents (Toxoplasma gondii, Rubella virus, Cytomegalovirus (CMV) and the Herpes Simplex Virus (HSV )) and abortion inwomen. It is thereforrecommended that all antenatal cases with such historyshould be routinely screened for these agents (IgM and IgG).*

**KEYWORDS-** TORCH infection, Specific IgM ELISA , Specific IgG ELISA, Pregnant women.

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## **INTRODUCTION**

The maternal infections that are transmissible in utero at several stages of the pregnancy, plasma gondii, Rubella can be caused by many organisms of which the members of the TORCH complex, namely Tox virus, Cytomegalovirus (CMV), the Herpes Simplex Virus (HSV) occupy prominent positions.(1) The rate of spontaneous abortion from foetal infection by the infectious agents like TORCH (Toxoplasma, Rubella, Cytomegalovirus, Herpes Simplex virus) is believed to range from 10-15% [2]. Congenital intrauterine infections havebeen associated with congenital abnormalities, intrauterine growth retardationand intrauterine death of the fetus, as well as late sequelae such asdevelopmental delay, blindness and deafness of the infected child (3). The detection of the IgM antibody against TORCH is the best approach for the identification of these infections , Due to the lack of a national screening programme, there is no baseline serological data regarding the presence of an antibody in the TORCH infection during pregnancy(4).

## MATERIALS AND METHODS

A total of 306 sera samples were collected for the detection of the Blood collection and serological tests. Each subject had 5 ml of whole blood collected by venipuncture in plain tubes, Sera were separated and stored in small screw capped vials at -20C° until se-riological analysis[5]. Samples were screened for the presence of IgM and IgG antibodies against (T. gondii, Rubella virus, Cytomegalovirus and Simplex virus) by ELISA kit All the samples showing OD450 nm reading above cut off value were considered to have significant antibody titer to (Toxo-plasma gondii, rubella virus ,cytomegalo virus and herpes simplex virus).

. Statistical Analysis

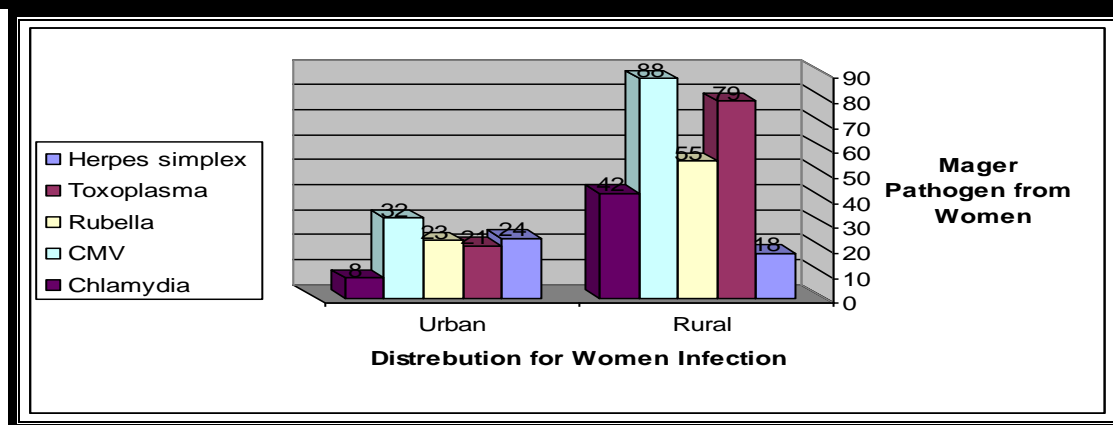
T-test ( $p > 0.05$ ) were carried out according to [6]

## RESULTS

From recurrent abortionOF Pregnant Women Toxoplasma, Rubella, CMV, Chlamydia and Herpes infection in various age groups was (45 %) in 20-29 years group ; (48.8%) in 30 - 39 years group; (20.8%) in 20 - 29 years group ( 35.8%) in the 20-29 years group ;( 56%) in 20-29 and 20-29( 41.6%) as shown in table 1.In this study out of 418 women , 300 (71.7%) belonged to rural area, 118(28.2%) to urban area as shown in Fig.1

**TABLE 1 Association of aging with Major Pathogens From recurrent abortionOF Pregnant Women infection.**

Age of women (yr)	Percenteg Major Pathogens From recurrent abortion to Pregnant Women				
	<i>Herpes simplex</i>	<i>Toxoplasma gondii</i>	<i>Rubella</i>	<i>CMV</i>	<i>Chlamydia trachomatis</i>
12–19	20 : 60 (33.3 % )	32 : 100 ( 32 %	18:88 ( 20.4 % )	50 : 120 (41.6 % )	13 : 50 (26 % )
20–29	25: 60 (41.6 % )	45: 100 ( 45 %)	26:88( 29.5 %)	43: 120 ( 35.8 %)	28: 50 ( 56 %)
30–39	12 : 60 ( 20 %)	16 : 100 (16 %)	43:88 ( 48.8 %)	25 : 120(20.8 %)	7 : 50 ( 14 %)
40–49	3 : 60 ( 5 %)	7 : 100 ( 7 %)	1 : 88 (1.13 %)	2 : 120 (1.66 %)	2 : 50( 4 %)
<b>TOTAL</b>	60	100	88	120	50



**Fig.1 Presentge with Major Pathogens From recurrent abortionOF Pregnant Women infection different geographical area**

We showed in Table (3) the percentage of number of abortion , the higher percent of one abortion see in women seropostivity for *CMV* (41.6%) , whereas higher present of repeated abortion *Toxoplasma*, *Chlamydia* (50%), (45%) (Second and Third ) see in women seropostivity for *Herpes* (52%) respectively ,The seroprevalence of *CMV* was significantly more in women with repeated abortions ( $p < 0.05$ ).

**TABLE 3 Association AND Distribution with Major Pathogens From recurrent abortion OF Pregnant Women infection WITH trimester of pregnancy.**

Trimester of pregnancy	Major Pathogens From recurrent abortion to Pregnant Women				
	No.	%			
	<i>Herpes simplex</i>	<i>Toxoplasma gondii</i>	<i>Rubella</i>	<i>CMV</i>	<i>Chlamydia trachomatis</i>
<b>First</b>	8 : 60 (13.3 %)	32:100 (32 %)	43:88 (48.8 %)	50:120 (41.6 %)	24: 50 (40 %)
<b>Second</b>	30: 60 (50 %)	23: 100 (23 %)	22:88 (29.1%)	35:120 (29.1 %)	0: 50( 0 %)
<b>Third</b>	22: 60 (36.6 %)	45: 100 (45 %)	23: 88 (26.1%)	45 : 120(37.5 %)	26 : 50 (52 %)
<b>TOTAL</b>	60	100	88	120	50

**Table4: Type obstetric losses of Toxoplasma, rubella, CMV, Chlamydia and Herpes From Pregnant Women**

Obstetric losses of Pregnant women	Major Pathogens From recurrent abortion to Pregnant Women				
	No.	%			
	<i>Herpes simplex</i>	<i>Toxoplasma gondii</i>	<i>Rubella</i>	<i>CMV</i>	<i>Chlamydia trachomatis</i>
<b>Abortions</b>	0 : 60 ( 0 %)	31:100 (31%)	33:88 (37.5 %)	55:120 (45.8 %)	5 : 50 (10 %)
<b>Premature delivery</b>	17:60 (28.3 %)	15: 100 (15 %)	11:88 (12.5 %)	8:120 (6.66 %)	25:50 (50 %)
<b>Neonatal death</b>	12 : 60 (20 %)	4 : 100 (4 %)	43: 88 (48.8 %)	35:120(29.16%)	0 : 50( 0 %)
<b>Congenital Anomalies</b>	31:60 (51.6 %)	5 : 100 (5 %)	1 : 88 (1.13 %)	2 : 120 (1.66 %)	20 : 50 (40 %)
<b>TOTAL</b>	60	100	88	120	50

In the study group in abortion women, a total of 144 (90%) were positive for *Toxoplasma* IgM . *Rubella* IgM positive were 133(90%) , *Chlamydia* IgM positive were 19(11.8%), *Herpes* IgM

positive were 112(70%) and 98(61.25%) were positive for CMV IgM a statistically significant correlation with the incidence of abortion

While a total of 141 (87.5%) were positive for Toxoplasma IgG . Rubella IgG positive were 142(88.7%) , *Chlamydia* IgG positive were 19(11.8%), *Herpes* IgG positive were 112(70%) and 122(70%) were positive for CMV IgG (  $p < 0.05$ ) Table . The IgG, IgM levels observed against these pathogens are represented in Table 4.

**Table5:.Relation of Toxoplasma, rubella, CMV, Chlamydia and Herpes From in abortion Women infection with percentage of IgM and IgG antibody in serum sample.**

Pathogens TORCH Parameter	Total Abortion Women (N=160)		
		No.	%
<i>Herpes simplex</i> IgM	Positive	112	70
	Negative	38	23.7
<i>Herpes simplex</i> IgG	Positive	78	48.7
	Negative	82	53.7
<i>Toxoplasma gondii</i> IgM	Positive	144	90
	Negative	16	10
<i>Toxoplasma gondii</i> IgG	Positive	141	87.5
	Negative	19	11.87
<i>Rubella</i> IgM	Positive	133	83.1
	Negative	27	16.87
<i>Rubella</i> IgG	Positive	142	88.7
	Negative	18	21.3
CMV IgM	Positive	98	61.25
	Negative	62	38.75
CMV IgG	Positive	122	76.25
	Negative	38	23.7
<i>Chlamydia</i> IgM	Positive	19	11.87
	Negative	141	88.12
<i>Chlamydia</i> IgG	Positive	24	15
	Negative	136	85

## DISCUSSION

*Toxoplasma gondii*, Rubella virus, Cytomegalovirus and Herpes simplex virus considerable variation in the prevalence of these agents among the women of child bearing age in different geographical areas, this might be due to different immunization rates from one geographical area to another and from age group to another [7]. Reported recorded results were (27.27%) to *Toxoplasma* (4.33%) to *Rubella* and (5.66%) to CMV while other workers report seropositivity ranging from (4%) to (17.77%). (8,9)

Detection of *T. gondii* specific IgM has been used as an aid in determining the time of infection: a negative IgM test result with a positive IgG result usually indicates infection at least six months previously [10, ].

This variation has been attributed to climate, culture differences regarded hygienic and feeding habits by washing the vegetable very well and avoid eating the raw meat the results differ from one to another person may be according to the workers experience to detection the best results and avoid the cross reaction that may be give a false positive or negative results so this difference bring about vacillation the workers results in different studies.

## CONCLUSION

The present study demonstrates a strong association between the infectious agents (*Toxoplasma gondii*, Rubella virus, Cytomegalovirus and Herpes simplex virus) and abortion in women. It is therefore recommended that all antenatal cases with such history should be routinely screened for these agents (IgM and IgG). Early diagnosis will help in proper management of the cases. This study also emphasizes the need for immunization in prospective mothers and adolescent girls who have not received vaccine in their childhood that give them acquired immunity to prevent infection that will reduce the chance of abortion.

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