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ORIGINAL ARTICLE

Seroprevalence Comparison among (CMV , Toxoplasma, Rubella) IgM And IgG Ab In Aborted Women In Karbala Province

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ABSTRACT

Objective: The current study aim to investigate the prevalence of CMV, Rubella, Toxoplasma infections among aborted women.

Methods: A total of 300 serum samples were collected from aborted women that admitted to Gynecology Hospital of Karbala, with age range 14-45 year, for detecting of antibodies types IgM and IgG for *Cytomegalovirus*, *Toxoplasma gondii*, *Rubella virus*, by using Enzyme-linked Immunosorbent assay (ELISA).

Results: The current studies showed that high prevalence of the CMV IgG antibodies among studied samples 287(96%) were positive and 21(7%) positive for IgM, 16(5%) were positive for each antibody. While the result showed that lower in the presence of Rubella IgG antibodies than CMV summed up 200(66.6%) were IgG positive and 18(6%) were IgM positive, in compare to the presence of toxoplasma there were 149(49.6%) of samples were IgG antibodies positive and 35(11.6%) were IgM antibodies positive.

Conclusion: The main cause of apportion in pregnant women was CMV, These tests must be included in a routine work before or through pregnancy in women.

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INTRODUCTION

The Recurrent Spontaneous Abortion (RSA) considers one of the most common obstetrical complications in Iraq and in the world. CMV was the main cause infection and complication during pregnancy, it was the major cause of congenital infections, approximately 30%-50% fetuses of women who contract Rubella infection during the first 3 months of the pregnancy that will be adversely affected with the virus^{1,2}.

Among TORCH agents, *Toxoplasma gondii*, globally, is the most wide spread parasite causing toxoplasmosis. It occurs during pregnancy as an acute infection. It consider very important because found that prevalent in

a third of world populations¹. Infections of infant with toxoplasmosis through his mum placenta, can be infect their central nervous system or their eyes³.

German measles or Rubella was carried with 80% of the multiple congenital abnormalities, rubella virus readily invades the placenta and fetus during gestation² But if fetus invade through first 8-10 weeks of pregnancy lead to fetal growth problem may lead to still birth, the virus was transmitted through respiratory droplet, firstly replicate in the nasopharyngeal mucosa and local lymph nodes, and circulatory system and infect placenta and fetus got infection^{4,5}.

Pregnant women when infected with Rubella virus, fetus congenital infection was carried and no treatment a viability was found, thus, immunization of all women at risk of infection that prevent infants infection⁶.

MATERIALS AND METHODS

A total of 300 serum samples were collected from women that admitted to Gynecology Hospital of Karbala, were recruited from April 2015 to April 2016, represented of spontaneous miscarriage with age range 14-45 year.

Serum samples were collected in small screw capped vials for all collected samples has been tested for presence of IgM, IgG, antibodies for cytomegalovirus, toxoplasma, and rubella using ELISA kits, and also the results are express qualitatively as negative and positive. In case of equivocal result, test were repeated on fresh sample and if the result not change, it was not included in data analysis, SPSS software using in statistical analysis and Chi Square test was use to assess statistical significance.

RESULTS

The prevalence of CMV toxoplasma, and Rubella IgM and IgG antibodies in pregnant women whom has mischarge with recent pregnancy, showed that high prevalence of the CMV IgG antibodies among studied samples 287(96%) were positive and 21(7%) positive for IgM, 16(5%) were positive for each antibodies. While the result showed that lower in the presence of Rubella IgG antibodies than CMV summed up 200(66.6%) were IgG positive and 18(6%) were IgM positive, in compere to the presence of toxoplasma there were 149(49.6%) of samples were IgG antibodies positive and 35(11.6%) were IgM antibodies positive. as show in Tables 1, 2 and 3.

Table 1: Show the positive patient samples with *Toxoplasma gondii* among aborted women

Pathogen	IgM	%	IgG	%	IgM&IgG
<i>Toxoplasma gondii</i>	38	12	149	49	38

Table 2: Show the positive patient samples with *Cytomegalovirus* among aborted women

Pathogen	IgM	%	IgG	%	IgM&IgG
CMV	21	7	287	96	16

Table 3: Show the positive patient samples with *Rubella virus* among aborted women

Pathogen	IgM	%	IgG	%	IgM&IgG
Rubella	18	6	200	66	12

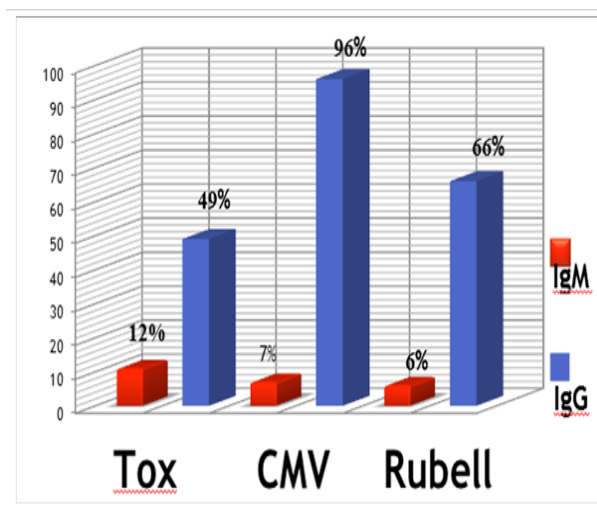


Figure 1: Show the percentage of CMV, Toxo, Rubella, infections among aborted women

Discussion

Cytomegalovirus, *Toxoplasma gondii*, and *Rubella* microorganisms were known to cause infections in utero and that often responsible for a loss of pregnancy. Many authors approve a geographical variation in the prevalence of those agents⁷.

In current study revealed that high prevalence of CMV IgG among aborted women 96% while IgM was 7%. Seroprevalance of CMV IgG observed in current study is agree with some other studies in different other countries in the same region, the prevalence were 96% in Egypt⁸ and in Iran 96%⁹, also 97.2% in Nigeria¹⁰, Saudi Arabia 91.1%¹¹, in Palestine 96.6%¹², other study in Turkey, had also reported that anti-CMV IgM and IgG antibody positivity rates were 86.5% and 100%, respectively¹³.

Seroprevalance of *Toxoplasma* IgG and IgM infection were 49% and 12% respectively in a current study. The sero-prevalance of *Toxoplasma gondii* infections in different countries show variable percentage, in Turkey, had also reported that Anti-*Toxoplasma*, IgM antibody was 1.1%, and IgG antibody was 0.5%¹³. In United Kingdom, 7.7- 9.1%; Norway, while in India, 45%-10.9%; and in Brazil, 50- 76% and Nigeria 75.4%^{14,15}.

Rubella virus antibodies results IgM 6% while IgG 66% were similar to that obtained in Sudan and Nigeria 65.3%, 70% and respectively^{16,17}, and lower to the result found in Mozambique was 100%^{18,19}. Turkey, had also reported that Anti Rubella, and anti *Toxoplasma* IgM and IgG antibodies positive rates were 2.6% - 37.6%, and 1.1% - 0.5%, respectively¹³.

CONCLUSION

The main cause of apportion in pregnant women was CMV.

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