



The Role of Antibodies Lipids in Antiphospholipid Abortion Occurred in Women with Toxoplasmosis in Kirkuk City

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Abstract

In the study the level of antiphospholipin (APL) antibodies with *T. gondii* in 160 abortion women who clinically diagnosed with recurrent miscarriage their aged between 15– 45 years, attending to Kirkuk hospital and 20 pregnant women with good health had not been subjected to previous abortion were included as control in the study which extended from April 2017 to October 2017. Blood samples and the required information regarded with maternal age and number of previous miscarriage were collected from both patients and healthy. Shown from the results that 21 (13.13 %) cases of abortion women with previous miscarriage were positive in APL- IgG and 10 (6.25 %) cases of abortion women with recurrent previous miscarriage give for APL+ and *T.gondii* IgG +IgM, all test results give negative in healthy women. An obvious significant ant differences at probability level ($P < 0.05$) found when make comparison between (APL IgG, IgM) with *T.gondii*+ APL IgM, IgG in both patient and healthy. The highest percentage of abortions was in the age (15-25) group. The lowest number of abortions was within the age group (25-35) years. The overall rate was 31%. It was the proportion of antiphospholipin IgG+ 21% and%10 of (IgG+ IgM) for antiphospholipin with antibodies *T.gondii*. There was no case of acute infection IgM+ antibody.

Keywords: *Recurrent Abortion, Toxoplasma gondii, Antiphospholipid.*

Introduction

Toxoplasma occurs in humans and animals due to *Toxoplasma gondii* parasites [1]. The parasite infects most genera of warm-blooded animals, including humans, but the main host is the cat [2, 3]. Animals that feed on infected meat are infected, by ingestion of feces of a cat that has itself recently been infected, or by transmission from mother to fetus [4]. Contact with eat meat is a more significant source of human infections in many countries, and fecal contamination of hands is a greater risk factor [5, 6]. *Toxoplasma gondii* infection in pregnant women transmitted to the fetus cause mental retardation, blindness, epilepsy and death [7]. *Toxoplasma gondii* can also cause severe [8].

Antiphospholipid Syndrome (APS) this syndrome is known as a recurrent disorder in the formation of vascular thrombosis, spontaneous abortion and thrombocytopenia condition that is marked by Which is characterized by its presence in the blood of

antibodies that recognize and attack phospholipid-binding proteins, rather than phospholipid itself [9, 10]. And disease symptoms include vascular thrombosis and pregnancy complications especially recurrent spontaneous miscarriages and, less frequently, maternal thrombosis and many other clinical manifestations may occur [11]. Antiphospholipid is characterized by venous or arterial thromboses, fetal losses and thrombocytopenia, in the presence of antiphospholipid antibodies, namely lupus anticoagulant [12]. Although the prevalence of APS in the whole area is unknown, the disease affects 5% to 15% of people who have recurrent arterial and venous thrombosis [13].

Material and Method

The present study was conducted in Kirkuk General Hospital for mothers from during April 2017 to October 2017 on 160 aborted women, and 20 healthy women with successful pregnancy as control group

.Required information were collected by personal interview in the data questionnaire. Five venous blood samples was collected from both group, whole blood samples were centrifuged for 5 minute at 3000 rpm, all sera kept frozen at -20°C until performed the test. All serum sample were screened for the presence (IgM+ IgG+), (IgM +IgG) antibodies against *T.gondii* , antiphospholipid by using a device ELISA (Enzyme –Linked Immunosorbent Assay).According to instruction for CTK- Biotch kit manufactured by American company Aeskulisa. The data were analyzed using frequency distribution and the percentage calculation and chi- squire test to find out the signigance of APL, *T. gondii* antibodies.

Results and Discussion

Our study collected 180 patients the study patient were female and the age of presentation in majority of the case was 15-

45 years In comparison with the literature it seems that our community habits of earlier age of girl marriage makes the female and to be in the scope of the problem and 20 healthy women with successful pregnancy as control group, out of 160 aborted women in Kirkuk a total of (21%) were for IgG+ for APL IgG+ and(10%) were positive for *Toxoplasma gondii* and antiphospholipid IgM +IgG And with statistically significant differences according to the test of square x2 and with a confidence level of P <0.01. The IgM antibody was negative in all samples while the control women were all negative by using Elisa as mentioned in Table (1).

It cannot be confirmed that this factor is the first responsible for the occurrence of abortion, but it may be considered one of the factors helping in the occurrence of abortion in conjunction with other factors that play an important in the occurrence of abortion.

Table 1: Relationship between levels of Antiphospholipid APL with *T.gondii* in aborted women in Krikuk city

| APL | Test | Total Number | APL | | | | APL and <i>T.gondii</i> (IgG +,IgM+) % |
|----------------------|------|--------------|-------------|----------|-------------------------|----------|--|
| | | | (IgG+) % | (IgG-) % | (IgM+) % | (IgM-) % | |
| Aborted women | | 160 | 21 | 139 | 0 | 160 | 10 |
| | | | 13.13 | 86.88 | 0 | 100 | 6.25 |
| Control | | 20 | 0 | 20 | 0 | 20 | 0 |
| | | | 0 | 100 | 0 | 100 | 0 |
| Statistical analysis | | | X= 21.417** | | X ² = 0.0000 | | X ² = 10.413** |
| | | | P = 0.00064 | | P =1.000 | | P= 0.002 |
| | | | P < 0.01 | | NS | | 0.01 <P |

As it is shown in the Table (2), (21%) of the total abortion cases was with positive in APL-IgG-Ab and (10%) were positive for *Toxoplasma gondii* and antiphospholipid IgM +IgG. The number of samples in the 15-25 age groups was 60 samples, 10 of which were positive for IgG antibodies. In the 26-35 year age group, 76 samples were given, 7 positive samples were tested for the IgG antibodies.

While the age group 36-45 years was the number of samples 24 samples, gave 4 positive sample for the examination of antibodies to phosphorus IgG and recorded the emergence of significant statistical difference under the test of the square of X2 and the level of confidence of P <0.05. IgG+

IgM to examine the presence of antibodies APL with the *T.gondii* curve using the Elisa test was the number of samples in the age group 15-25 years 60 samples, gave 9 positive sample, while the number of samples in the age group 26-35 years 76, gave 1 positive sample and did not register Any case within the age group 36-45 years and the emergence of significant differences under the test of square x2 and the level of confidence P <0.05.

The current study agreed with the study of researcher [16] in Baghdad where chronic infection showed 20% of abortions and [17] study in Mosul city with 13.7% infection and did not agree with Hussan2013 study in Baghdad where Infection rate 3.3%.

The reason may be due to differences in age groups or to the small size of samples or disparities between the ages of pregnancy in the governorates of Iraq as well as changes in the level of hormones that are directly related to pregnancy such as progesterone and estrogen because of the immune factors in the mother's body The pregnant woman [14]. The age of more than 35 years Plays a large role in the incidence of spontaneous

abortion in women and did not agree with the study [16] the highest infection rate among the age group (31-35) years may be due to globe immune type IgM unable to cross from mother to fetus. The placenta because partial IgM is large and it is the largest clopolinated species [15].IgM-type immunoglobulin cannot induce abortion in women with anti-phospholipin (IgM-APL) [7].

Table 2: Distribution of Antiphospholipid and *T.gondii* according to age range

| Age groups | Total Number | APL | | | | APL and <i>T.gondii</i> IgG+ , IgM+)(% |
|----------------------|--------------|--------------------------|--------------|-------------------------|-------------|---|
| | | (IgG +) % | (IgG -) % | (IgM +) % | (IgM-) % | |
| 15 – 25 | 60 | 10 | 50 | 0 | 60 | 9 |
| | | 16.66 | 83.33 | 0 | 100 | 15 |
| 26 – 35 | 76 | 7 | 69 | 0 | 76 | 1 |
| | | 9.21 | 90.79 | 0 | 100 | 1.32 |
| 36 – 45 | 24 | 4 | 15 | 0 | 24 | 0 |
| | | 16.66 | 62.5 | 0 | 100 | 0 |
| Statistical analysis | | X ² =9.38462* | | X ² = 0.0000 | | X ² = 8.6* |
| | | P = 0.025 | | P = 1.000 | | P = 0.035 |
| | | P < 0.05 | | NS | | 0.05<P |

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