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ABORTION WHEN WOMEN PREGNANT AND EXTENT OF RELATED IT WITH *TOXOPLASMA GONDII*

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Abstract

All previous studies that performed were either for only surveying about *Toxoplasma gondii* or only Cytomegalovirus without survey for both together in same pregnant woman that exposure to abortion therefore 167 samples of blood were collected from women who exposure to abortion and visited AL-Nassiriyah Maternity and Children Hospital during the period from the first of July 2012 to the end of February 2013 . The samples were examined by ELISA method for investige about CMV, *T. gondii* and to knowledge effect of that infection on mother's heart . The results were infection by CMV with rate 71.9% and double infection by CMV+ *T. gondii* with rate 26.9% while single infection by *T. gondii* didn't appear absolutely . Percentage of immune response for anti cardiolipin 0.8% at infection with CMV and 2.3% when double infections by CMV+ *T. gondii* therefore the statistical analysis by using T- test in level P< 0.05 didn't find significant difference . High percentage 86.5% was for CMV in winter while the highest percentage 37.2% was for CMV+ *T. gondii* in summer . The highest percentage for abortion was 52.2% in an autumn and the lowest percentage 22.2% in winter therefore the statistical analysis by using T- test in level P< 0.05 did find significant difference .

Conclusion : CMV represented the main reason for abortion . Infection of *T. gondii* represented the strongest proving on infection with CMV in same patient that *T. gondii* was founded in it (*T. gondii* indicator to infection with CMV) . Deserts and lands in Iraq without planting and without any treatment, help on spread the viruses and parasites from place to another .

Introduction

Toxoplasma gondii is an obligate intercellular parasite that infects a wide variety of warm blooded mammals and birds [(1)] . Transmission of parasites essentially occurs without knowledge of the patient and may be unrelated to direct exposure to a cat (e.g., by ingestion of vegetables or water contaminated with oocysts or ingestion of undercooked meat contaminated with cysts). On the other hand, patients with an indoor cat that is fed only cooked food is not at risk of acquiring the infection from that cat. For clinical purposes, toxoplasmosis can be divided for convenience into five infection categories, including those 1- acquired by immune competent patients 2- acquired during pregnancy 3- acquired congenitally 4- acquired by or reactivated in immune deficient patients, and including 5- ocular infections [(2)]. Cytomegalovirus (CMV) disease is one of the most common complications, developing after an immunosuppressive therapy . CMV disease can be seen anywhere in the gastrointestinal tract, from the mouth to the rectum.tic After primary infection , the virus goes into the latent state particularly in white blood cells and in the endothelial cells of the body [(3,4)] .

Materials and Methods

5 ml of blood were taken from all one of patient by intravenous injection of sterile medical , transported to the test tube and left for 15 minute then centrifuging in centrifuge for the purpose of isolating the serum that performed for the following tests: Anti -Toxoplasma (IgM) – (IgG), Anti - CMV (IgM) - (IgG) , Anti- cardiolipin (IgM) – (IgG) according to procedure that come with kits from the German company (AESKULISA) , for example the Procedure for anti-cardiolipin was performed by these steps : Diluted the concentrated sample buffer 1:5 with distilled water , Diluted the concentrated wash buffer 1:50 with distilled water , dilute serum samples 1:101 with sample buffer , Pipette 100 ml of each patient's diluted serum into designated micro wells . Pipette 100 ml calibrators OR cut – off calibrator and negative and positive controls into the designated wells . Incubated for 30 minutes at 20 - 32 C/68- 89.6 F. Wash 3x with 300ml washing buffer (diluted 1:50) . Pipette 100ml conjugate into each well . Incubated for 30 minutes at 20-32 C/ 68- 89.6 F. Wash 3x with 300 ml washing buffer (diluted 1: 50) . Pipette 100ml TMB substrate into each well . Incubated for 30 minutes at 20 - 32 C/68- 89.6 F., protected from intense light . Pipette 100ml stop solution into each well, using the same order as pipetting the substrate . Incubated 5 minutes minimum . Agitated plate carefully for 5 sec. . Read absorbance at 450 nm (optionally 450/ 620nm) within 30 minutes . As for rest of tests were performed with procedures such as the method that mentioned with some different that come with their kits in an information and materials .

The statistical analysis

The statistical analysis was performed in this study by using ANOVA test and T-test according to [(5)] .

Results

167 samples of blood have been collected from abortion women that visited AL-Nassiriyah hospital for maternity and children for surveying reason of abortion , the results were infection of Cytomegalovirus with rate 71.9% , double infections by Cytomegalovirus + *Toxoplasma gondii* with rate 26.9% and happens abortion without any of microorganism that mentioned with 1.2% , *T. gondii* was never found with only itself table (1).

As for double infections by Cytomegalovirus + *Toxoplasma gondii*, there are 38 cases responded with type negative for IgM CMV, IgM *T. gondii* , positive for IgG CMV, IgG *T. gondii* and two cases with negative respond for IgM CMV, positive for IgG CMV, IgM *T. gondii*, IgG *T. gondii* (which mean that Cytomegalovirus had been in IgM and moved on to IgG (very chronic) and *T. gondii* was positive for IgM, IgG which mean that is in IgM and was starting change to IgG) , as well two cases with positive respond to IgM CMV, IgG CMV, IgM *T. gondii* and negative to IgG *T. gondii* (which meaning that infection with CMV became older (chronic) and infection with *T. gondii* still new infection) , addition to two cases with positive to IgM CMV, IgG CMV, IgM *T. gondii* and IgG *T. gondii* and only one case was negative responded to IgM CMV, IgG *T. gondii* and positive for IgG CMV, IgM *T. gondii* table (2) .

Effect of Cytomegalovirus on mother's heart with rate 0.8% while double infections by Cytomegalovirus + *Toxoplasma gondii* were 2.3% and the cases of abortion without of any microorganism that mentioned were record 0.0% therefore the statistical analysis by using T- test in level $P< 0.05$ didn't find any significant differences table (3) .

As for Distribution of CMV, CMV+ *T. gondii* on Summer, Autumn and Winter, CMV appeared with the highest percentage 86.5% in Winter while the lowest percentage 60.5% in Summer and 71.3% in Autumn , double infections by Cytomegalovirus + *Toxoplasma gondii* were appeared with the highest percentage 37.2% in Summer while the lowest percentage 15.6% in Winter and 27.6% in Autumn , abortion without any microorganism that mentioned was 2.3% in summer and 1.1% in autumn so the statistical analysis by using ANOVA- test in level $P< 0.05$ did find significant differences, but the distribution all one of them on three seasons ANOVA – test didn't find significant differences . As for the highest total percentage for abortion was 52.1% in autumn and the lowest 22.2% in winter and 25.7% in summer therefore the statistical analysis by using T- test in level $P< 0.05$ did find significant differences table (4) .

Table (1): Percentage of infection with CMV and double infection with *T. gondii* + CMV and percentage infection without any from those mention .

Causes of abortion	Number of patients	Percentage
Cytomegalovirus	120	71.9 %
CMV+ *T. gondii*	45	26.9 %
Without of any causes mention	2	1.2 %
Total number of abortion women	167	

Table(2): Proving of infection with CMV before *T. gondii* an in state double infection with CMV+ *T. gondii*

Number of double infection CMV+ *T. gondii*	CMV IgM	CMV IgG	*T. gondii* IgM	*T. gondii* IgG
38	Negative	Positive	Negative	Positive
2	Negative	Positive	Positive	Positive
2	Positive	Positive	Positive	Negative
2	Positive	Positive	Positive	Positive
1	Negative	Positive	Positive	Negative
Total	45			

Table (3): Effect of CMV , CMV+ *T. gondii* and abortion without any from those mention on mother's heart .

Causes of abortion	Number of negative reactions Anti cardiolipin	Number of positive reactions Anti cardiolipin	Percentage of positive
Cytomegalovirus	119	1	0.8 %
CMV+ *T. gondii*	44	1	2.3 %
Without of any causes mention	2	0	0.0 %
Total	165	2	1.2 %
$T_{Calculated} = 2.920$	d.f = 2	$T_{Tabulated} = 1.533$	

Table (4): Distribution of CMV, CMV+ *T. gondii* on three seasons .

Causes / Season	CMV	CMV + *T. gondii*	Without causes	Total
Summer	26 (60.5%)	16 (37.2%)	1 (2.3%)	43 (25.7%)
Autumn	62 (71.3%)	24 (27.6%)	1 (1.1%)	87 (52.1%)
Winter	32 (86.5%)	5 (15.6%)	0 (0.0%)	37 (22.2%)
LSD (0.05) = 26.35 , Sig = .000 , $F_{Calculated}$ = 41.011				$T_{Calculated}$ = 3.532 , d.f = 2, $T_{Tabulated}$ = 2.920

Dissection

Cytomegalovirus was appeared with rate 71.9 % which is disagreement with [6] . *T. gondii* didn't appear with only itself which is disagreement with all studies , because those studies were performed for only *T. gondii* without CMV. Double infections by CMV + *T. gondii* were appeared with rate 26.9 % and rate of *T. gondii* here (in double infections) agreement with [7] .

Inability of *T. gondii* to presence with itself (single) unless Cytomegalovirus appeared with her and ability of Cytomegalovirus to presence with only itself and presence of Cytomegalovirus before *T. gondii* might be proving that Cytomegalovirus represent the main reason because it was such as attraction power for *T. gondii* or prepare suitable conditions to infection with *T. gondii* which wasn't been main reason or be as a secondary reason or CMV is encourage an infection with *T. gondii* because some ways of infection with *T. gondii* happens by immune competent patients and immune deficient patients [2] , which might be happens by infection with CMV where is being as weaken factor for immunity of mother's body . No effect for *T. gondii* on mother 's heart or was too rare and that is disagreement with [7]

The highest percentage in autumn might be belong to non stability for environmental conditions in this season converted from summer to winter where high humidity and the winds which are moving from place to other carrier the dusts with different pathogenic causes . on other hand damply environmental conditions very suitable for developing parasites , by all means the environmental conditions between seasons in Iraq specially in Nassiriyah city mostly similarity from where disadvantage, addition to interference between virus that prefer colder and parasite which prefer hotter .

This study recommend on an extermination from all environmental problems by cultivation land , medication deserts , good discharge for sewage water and treatment faeces of human and animals before discharge it . Mothers must be have the food that contain on Vitamins before happens the pregnant for the sake of strong immunity of their bodies , treating for CMV must be at the first or in the same time that was happened the curing from *T. gondii* .Another study must be perform about effect of *T. gondii* on the heart of child that infection with *T. gondii* .

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