Most Common Causes of Repeated Abortion in Women in Naseriya

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Abstract

This study was designed as a seroprevelance of human Cytomegalovirus antibodies in a group of pregnant women in Naseriya at first trimester of pregnancy. A total number of (100) serum samples were included belong to a healthy pregnant women with gestational age ranging from 4-12 weeks some of them, with a history of abortion, and non-pregnant women with no history of abortion. All the samples were examined by Enzyme Linked ImmunoSorbent Assay (ELISA) in Laboratory of Central Naseriya Hospital. The results of (100) serum samples are described as follows: The age of both pregnant and non-pregnant women ranged from (15-40) years.
The percentage of HCMV-IgG-Ab among pregnant women was 73 from 75 (97.3%) and in non-pregnant women all sample 25 (1005) recorded positive results. The percentage of HCMV-IgM-Ab were detected in 8 from 75(10.7%) of pregnant women. The HCMV-Abs (IgG and IgM) found to be positive in 6 pregnant women, (3)(50%) of them were with a history of abortion and the other (3) (50%) women with no such history. and there are only 2 pregnant women who have only CMV-IgM, one of them is with previous abortion(50%) and the second one has never been aborted. In other wise, when only IgG-Ab are positive, there are 22(32.8%) pregnant women with history of abortion, and 45(67.2%) have no history of abortion.

اهم الاسباب التي تؤدي للإسقاط المتكرر عند النساء في الناصرية

الخلاصة:

صممت هذه الدراسة كدراسة سيرولوجية لانتشار الفيروس المضخم للخلايا (Cytomegalovirus) لمجموعة من النساء الحوامل في الناصرية خلال الاشهر الاولى من الحمل. تم جمع (١٠٠) عينة مصل تعود الى النساء الحوامل (تراوحت مدة حملهن ما بين ٤ الى ١٢ اسبوع) بعضهن لديهن تأريخ سابق للأجهاض، ونساء غير حوامل بدون تأريخ سابق للأجهاض، وقد تم فحص تلك العينات بطريقة الأنزيم المرتبط الممتز المناعية (ELISA) في مختبر مستشفى الناصريه العام. ونتائج تلك العينات موصوفة كالتالي: عمر كلتا المجموعتين (النساء الحوامل وغير الحوامل) تراوح مابين (١٥-٤٠) سنة. كانت النسبه المئوية للأجسام المضادة (IgG) للفيروس المضخم للخلايا بين النساء الحوامل ٧٣ من ٧٥(٣,٩٧٪) وفي النساء غير الحوامل كل العينات سجلت نتائج ايجابيه ٢٥(١٠٠٪). درست النسبه المئويه للأجسام المضادة (IgM) للفيروس المضخم للخلايا في كلتا الجموعتين وكانت النسبة في النساء الحوامل ٨ من ٧٥ (٧,١٠٪) ممن سجلن نتائج ايجابية، ولكن لاتوجد نتائج ايجابية في النساء غير الحوامل.
من مجموع (٧٥) امرأة حامل، كان عدد النساء الحاملات للفيروس المضخم للخلايا(IgG,IgM) هو ٦ نساء، ٣(٥٠٪) كان لديهن تاريخ سابق للأجهاض و٣(٥٠٪) ليس لديهن تأريخ اجهاض سابق, كان عدد النساء الحاملات للفيروس المضخم للخلايا نوع (IgM) ٢ فقط, ١(٥٠٪) لديها تاريخ سابق للأجهاض و ١(٥٠٪) ليس لديها تابيخ سابق للأجهاض, من جانب أخر تبين ان عدد النساء الحاملات للفيروس المضخم للخلايا نوع (IgG) ولديهن تاريخ سابق للأجهاض ٢٢(٣٢,٨٪) و ٤٥(٦٧,٢٪) من النساء ليس لديهن تاريخ مسبق للأجهاض.

Introduction

Miscarriage, the commonest complication of pregnancy, is the spontaneous loss of a pregnancy before the fetus has reached viability. The term there for includes all pregnancy losses from the time of conception until 24 weeks of gestation [1]. There are two types of miscarriage: sporadic and recurrent. Recurrent miscarriage affects about 1% of couples [2]. By contrast, at least 25% and probably as many as 50% of all women experience one or more sporadic miscarriages.usually due to random fetal chromosomal abnormalities [2-3].

Age and success of previous pregnancies are two independent risk factors that affect the loss rate, many authors have observed an increasing risk of fetal death, in particular spontaneous abortion with increasing maternal age [4-5]. Outcome of previous pregnancies young women who have never experienced a loss, the rate of a clinical miscarriage is as low as 5% [6]. The risk increase to approximately 30% for women with three or more losses but with a previous live. Born infant and up to 50% for women are at particular risk for losing their pregnancy and that there must be an underlying cause for it [7].

Age and success of previous pregnancies are two independent risk factors that affect the loss rate. Many authors have observed an increasing risk of fetal death, in particular spontaneous abortion, with increasing maternal age [8-9]. The association of age of the mother and the increased likelihoodof chromosomal abnormalities is manifested by the agerelated increase of trisomy 21 and cytogenetic studies on preimplantation embryos [10]. Outcome of previous pregnancies is another decisive factor in the risk of pregnancy loss. For young women who have never experienced a loss, the rate of a clinical miscarriage is as low as 5% [11]. The risk increases to approximately 30% for women with three or more losses but with a previous live-born infant and up to 50% for women without a live-born infant [12-13]. From these data, it is evident that some women are at particular risk for losing their pregnancy and that there must be an underlying cause for it. Before dealing with possible mechanisms of recurrent miscarriage, it should be remembered that investigations are necessarily confounded by the fact that the same mechanisms as those in sporadic miscarriage can be involved. The same uncertainty applies for the evaluation of any treatment. It is estimated that approximately 33% of women with so called recurrent miscarriage will have had three consecutive sporadic miscarriages by chance [14].The purported causes of recurrent miscarriage are multiple ranging from genetic, environmental, infectious, metabolic, and endocrine to purely anatomic ones, the best defined causes are parental chromosomal abnormalities.

Material and Methods

Subjects

A prospective study was done on the main following groups:

Pregnant group included of 75 healthy pregnant women at the first trimester of gestation; Non-pregnant group included 25 non pregnant women. The ages ranged between 15-20 years.

Study protocol

Serology method by Enzyme Linked Immune Sorbent Assay (ELISA) for the estimation of HCMV Abs (IgM, IgG) in both pregnant and non pregnant women.

Statistical Analysis

The statistical manipulations included two main analyses, which were evaluation of most common causes and repeated abortion association and assessment of significant between them. These analyses were carried out by using the computer programmed SPSS version -10 and Excel application.

Results

Table (1) showed that, the studied groups was divided according to age groups and the result showed that the age stratum (21-30) years was found to be highly frequent in both studied groups[pregnant women 41 from 75 (54%)] and[non pregnant women 14 from 25 (56%)] with non significant different ($p > 0.05$).

Table 1: Distribution of pregnant and non-pregnant women according to age groups

Age group	Pregnant		Non pregnant		P-value
	N	%	N	%	
15 – 20	12	16 %	7	28%	0.05 NS
21-30	41	54.7%	14	56%	
31-40	22	29.3%	4	16%	
Total	75	100%	25	100%	

Table (2) shows that there is 8 from 75 of pregnant women had a positive HCMV IgM-Ab (10.7%) while 67 from 75 of pregnant women are negative, on other hand we did not detect such type of Abs in non-pregnant women and non significant different was found when we compare between both groups.

Table 2: Distribution of pregnant women and non pregnant women according to Human cytomegalovirus (HCMV) IgG,IgM-antibodies

	Studied group		Total	P-Value
	Pregnant women	Non-pregnant		
Anti-CMV-IgM Positive No. %	8 10.7%	0	8 8.0%	0.0089NS
Negative No. %	67 89.3%	25 100%	92 92.0%	
Total No. %	75 100%	25 100%	100 100%	

The occurrence of IgG-Ab to CMV was found to be more frequent in both studied groups as we can see in table (3-1) all the non-pregnant women have IgG-Ab 25 from 25 (100%) and 73 from 75 (97%) of pregnant women associated with such Ab, while there is only 2 from 75 (2.0%) were negative. Non statistical significant differences were found when both groups were compared.

Table (3): Distribution of pregnant women and non-pregnant women according to human cytomegalovirus (HCMV) IgG-antibody

	Studied groups		Total	p-value
	Pregnant	Non-pregnant		
Anti-CMV-IgG Positive No. %	73 97.0%	25 100%	98 98.0%	0.409 NS
Negative No. %	2 2.7%		2 2.0%	
Total No. %	75 100%	25 100%	100 100%	

The correlation between HCMV-IgG,IgM with abortion in pregnant women:

The first trimester of pregnancy is an important period often fraught with complications like bleeding and pain, leading to sever oppression in the mother [15]. Pregnancy loss has been attributed to several factors involved in human reproduction. Genetic and uterine abnormalities, endocrine, and immunological dysfunctions, infectious agents, environmental pollutants, psychogenetic factors and endometriosis are most important causes of pregnancy loss, spontaneous abortion is a new issue in terms of its social and economic impact [16]. Today the majority of women decide to conceive in their thirties or forties, since they are career-oriented during the age of 30-35 years, potential fertility declines and the rate of spontaneous abortion increased [17].

In table (4) there are 6 pregnant women have both CMV-Abs types, 3 (50.0%) of them with history of abortion, and 3 (50.0%) have no history of abortion, and there are only 2 pregnant women who have only CMV-IgM, one of them is with previous abortion(50.0%) and the second one has never been aborted. In other wise, when only IgG-Ab are positive, there are 22 (32.8%) pregnant women with history of abortion, and 45(67.2%) have no history of abortion. From this result we can suggest that, there is a relationship between HCMV and abortion.

Table (3-4): the correlation between HCMV-1gM, IgG with abortion in pregnant women

	Abortion		**Total**	**p-value**
	History	**No history**		
Anti-CMV (IgG,IgM)-Abs No. %	3 50.0%	3 50.0%	6 100%	1.00 NS
Anti-CMV (IgM)-Ab No. %	1 50.0%	1 50.0%	2 100%	
Total No. %	4 50.0%	4 50.0%	8 100%	
Anti-CMV – (IgG)-Abs No. %	22 32.8%	45 67.2%	67 100%	
Total No. %	22 32.8%	45 67.2%	67 100%	

Discussion

The current study included two studied groups: 75 pregnant women and 25 non-pregnant women, the presence of serum anti-CMV antibodies was studied in both groups, most of the studied women manifested the presence of serum IgG anti-CMV antibodies with no significant difference between both groups.

Moreover, serum IgM anti- CMV antibodies were present only in the pregnant women group. From table (2, 3) can notice that the percentage of IgG-Ab has high prevalence compared with IgM-Ab. This result is agreement with study in Egypt (2006) which showed that CMV-IgG are more frequent than IgM –CMV [18]. Other study in India (2003) Observed that the percentage of IgG-Ab, are more frequent than IgM-Ab with (91%) for IgG and (8.43%) for IgM-Ab [19]. A study in Turkey in (2007) showed that, from 1652 pregnant women at first trimester considered that, 1568 (94.9%) of them were found to be positive for Anti-CMV IgG, while (0.40%)tested positive for Anti-CMV

IgM [20]. The same results obtained in (2009) in Turkey [21].

In table (5) we can showed the relationship between HCMV and abortion, this results is agreement with study in Brazil in (2003), this study suggested a possible relationship of HCMV infection with inflammation and pregnancy loss [22], and a study in Japan in (2006) found that the carries CMV had an increased miscarried rate [23], and this results agreement with study in Turkey (2004) [24].

On the other hand many studies [25- 26] were showed disagreement with our study they suggest that, the CMV did not support as a major abortion related factor. Other study in Karla (2008) showed that the CMV and rubella infections have no significant role in development of miscarriage [17]. Ghazi and Mohamed (2004) found that CMV infections have no role in miscarriage among Saudi pregnant women [27].

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