

Study of Viral Infection and Its Impact on Pregnancy among Women in Basra City, Southern Iraq

Shafeeqa Abdusayed Obaid¹, Ali H. Ibrahim² and Ahmed Hamid Dawood Alatbee³

¹ Southern Technical University, Technical Institute of Basra Department of Anesthesia Techniques, Iraq

² Southern Technical University Technical Institute of Basra, Iraq

³ Southern Technical University. Technical Institute of Basra, Department of Anesthesia Techniques, Iraq

Emails: Shafeeqa.abdulsayed@stu.edu.iq , alihamed1985.ah@gmail.com ,
ahmed.dawood@stu.edu.iq

Abstract:

Viral infection causes many problems for a pregnant woman, including premature birth and fetal deformity, and understanding the role of viruses has become extremely important because we are facing the spread of various epidemics. Viruses can reach the placenta through the reproductive system or through the blood. The uterine environment, maternal immunity and gestational age also play important role in the development of viral infections. The study began on 2 February, 2020 and continued until 20 September, 2020 included examining 100 blood samples from pregnant women suffering from recurrent miscarriage, fetal deformities, or diseases in children after birth in the city of Basra to detect viruses that may infect them and that cause problems for the fetus and the pregnant woman. Which contributes to an important role in reducing infection rates and a deeper understanding of the effect of viruses on the pregnant woman and the fetus and how to avoid infection with the virus.

Key words: *IgG. IgM .. Pregnancy.ELISA*

INTRODUCTION:

Many viruses in the first months of pregnancy cause miscarriage in pregnant women or a loss of the fetus or sometimes virus infection causes birth defects in the fetus for example: during pregnancy Rubella infection causes congenital rubella syndrome that usually occurs in childhood and rubella mild viral disease. German measles can cause Heart problems, vision problems, small head, mental disability, hearing problems , growth problems ,bone problems, and damage to the liver and spleen (RubellaExternal. Lambert N, Strebel P, Orenstein W, Icenogle J, Poland G. 2015). Cytomegalovirus if a pregnant woman has CMV, she can pass it on to her developing baby. This is called congenital CMV, and it can cause birth defects and other health problems. (Lanzieri, T. M., Chung, W., Flores, M., Blum, P., Caviness.2017) HSV-2 infection is widespread in populations all over the world (Weiss H.2004). Infection during pregnancy are related to more common complications such as the spread of viscera, especially if the infection was acquired From pregnancy during the third trimester (Wald A, Krantz E, Selke S, Lairson E,

Morrow R, Zeh.2006) at the baby Herpes simplex is an infection of neonatal herpes simplex virus. It is a rare case but serious, and usually occur due to vertical transmission (HSV-1 or 2) from the mother to the newborn (James WD, Berger TG. 2006). Vertical transmission of hepatitis B virus from infected mothers to newborns or fetuses results in a 90% chance of neonatal infection if a pregnant woman has hepatitis B and is chronic positive for type E antigen (HBeAg) hepatitis B virus. (Joshi SS, Coffin CS.2020) include diseases of pregnancy during acute fatty liver of pregnancy, and vomiting of pregnancy, and cholestasis within the liver during pregnancy, poisoning and severe pregnancy syndrome HELLP (dissolution of blood, high liver enzymes, low platelet count (Brady CW.2020). Viruses sometimes infect the placenta or fetus directly, causing birth defects or pregnancy loss. Viruses also infect pregnant women more than they infect non-pregnant women, as evidence indicates that the influenza virus has a similar, but less, effect on the fetus and the pregnant woman. It was isolated herpes zoster viruses zoster and EBV in the tissues of the placenta and can infect the developing fetus, but extremely rare cases, little is known about the infection conditions (Avgil M, Ornoy A.2006, Hollier LM, Grissom H.2005).

Material and method:

Material

- 1-Syringe 2-cotton 3-buffer reagent
- 4-kit (Rubella- CMV- HSV- Hepatitis B virus)
- 5- Gel+ Clot activator tube 6- Stopwatch
- 7-pipette (10-100) μ 8- Alcohol
- 9- ELISA kit for (Rubella-CMV-HSV-Hepatitis B Virus).

Methods:

- 1-A blood sample is drawn from pregnant women with a syringe.
- 2-Place the blood sample in a gel tube and centrifuge 3000 rpm in 10 minutes.
- 3-Draw up the serum by pipette 10 μ
- 4-Fill out the sample well.
- 5-We add two drops of the dilute solution (buffer) and place the assay sample vertically for 15 minutes.
- 6- After that, the result is read.

The Results have been confirmed by using a Technique ELISA.

Result:

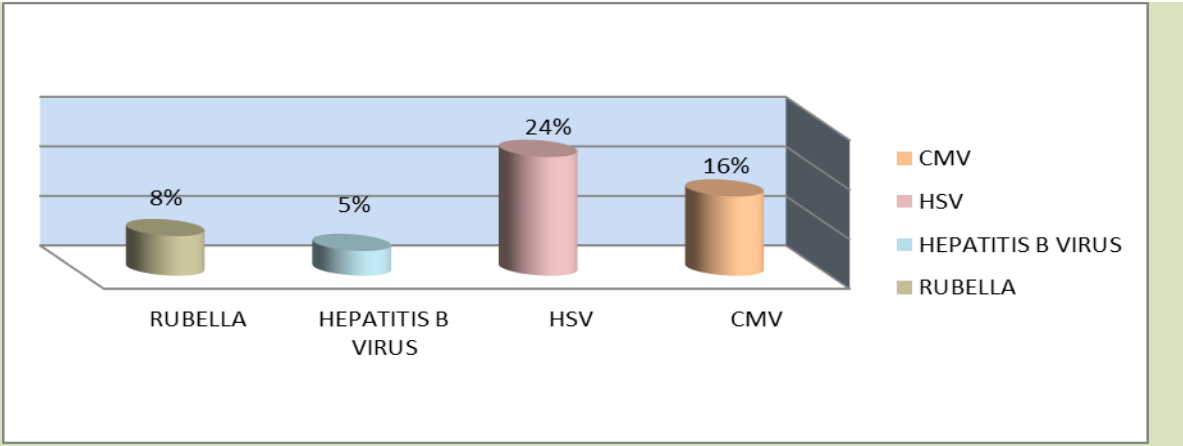


Table -1-Shows the percentage of the types of viruses that infect pregnant women.

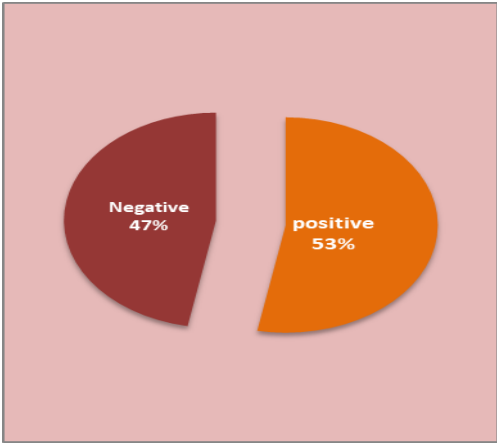


Table -2-It shows the percentage of pregnant women infected with the virus

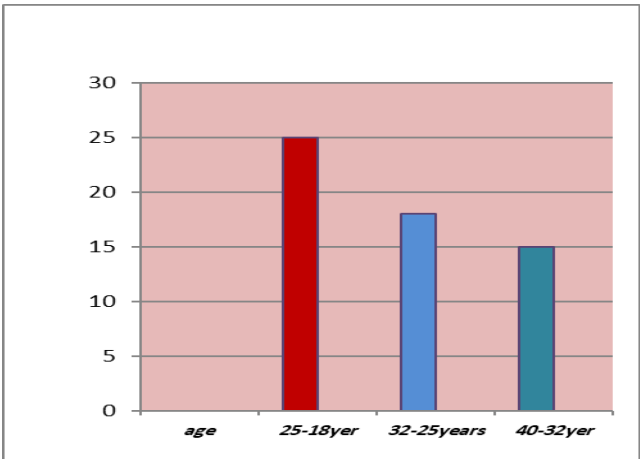


Table -3- It shows the ages of pregnant women infected with the virus .

	CMV	HSV	HBV	RUBELLA	Total
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1-	IgG	10	IgG	15	IgG	2	IgG	6	33
2-	IgM	6	IgM	9	IgM	3	IgM	2	20
Positive: IgG & IgM						53			
Negative: IgG & IgM						47			

Table -4- The table shows the ratio of (Igm) and (IgG) for pregnant women infected with the virus that causes miscarriage.

Discussions:

The following tables and figures involved the results for many parameters:-

Table -1-Shows the percentage of the types of viruses that infect pregnant women Appeared in the **Table -1-** noticeable increase infection by HSV 24% And after that CMV 16% and Rubella 8% & Hepatitis B Virus 5% Of the total viral infections .Where he found the average infection with the virus 13.25%and STDEV 7.3951 Where the study found it at **Table -2-** percentage of pregnant women infected with the virus The study showed an increase in infection rates by 53% of the total 100 samples studied, and this explains the main reason why most women suffer from recurrent miscarriage. These viruses may pose a risk to women during pregnancy and deformities in fetuses. Where it has been identified viruses that cause recurrent miscarriage and direct impact on pregnant women. **Table -3-** shows that the most common ages for infection with viruses range from 18-25 years, followed by 25-32 years later and then from 32-40, and this directly explains the significant increase in the infection in pregnant girls. **Table -4-** The table shows the ratio of (Igm) and (IgG) for pregnant women infected with the virus that causes miscarriage. Where the study showed (CMV) 10 IgG Which is an old infection and 6 Igm Which is an new infection.and HSV 15 IgG & 9 Igm as Such HBV IgG 2 ,Igm 2 and Rublla IgG 6 ,IgM 2. The study Show relationship between viruses in pregnant women and high rates of miscarriage.

Conclusion:

"The highest rate of infection with the virus was found with the herpes virus, CMV, which shows the significant increase in the percentage of viral infections that are directly related to repeated abortions in pregnant women".

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