International Journal For Advanced Research In Science & Technology
A peer reviewed international journal www.ijarst.in
ISSN: 2457-0362

CMV IGM SEROPOSITIVITY IN WOMEN WITH BAD OBESTETRICS HISTORY

SOUMYA PANDEY

PG Scholar, Department of Microbiology, Integral Institute of Medical Science & Research Lucknow, India

Abstract:

Background and Objectives: The purpose of this ELISA is to assess the seropositivity of CMV IgM in individuals with a negative obstetrics history; this will allow researchers to better understand the demographics and socioeconomic status of the seropositive population. A variable that includes education and residency status was identified as having a poor obstetrics history in around 20-45 age group patients. Techniques and Subjects: Blood samples were taken from pregnant female patients during the five-month research period for the prospective cross-sectional investigation. The research was place at IIMS&R and Lucknow's Departments of Microbiology and Obstetrics and Gynecology. **Results:** The following demographics of female patients were excluded from the outdoor screening: 13(32.5%) were pregnant with BOH, 17(45.5%) were not pregnant with BOH, 10(25%) came for the first prenatal visit, 11(20-25)=27.5%, 14(26-30)=35%, 10(31-35)=25%, 3(36-40)=7.5%, and 2(41-45)=5%.Sixty percent of the patients, based on their residency status, come from rural areas.**Conclusion:** The total number of seropositivity patients with a poor obstetrics history, which is 2.5%, is also identified in this study, which serves as an additional research aim.

Keywords: CMV, IgM, BOH, ELISA

1. Introduction

There is a risk of fetal harm from viral infections that occur during pregnancy because of the potential for intrauterine viral transmission. Intrauterine fetal mortality, two or more consecutive spontaneous abortions, intrauterine growth retardations, and congenital abnormalities are all symptoms of a poor obstetrics history. Among the herpesviridae family of viruses, CMV stands out as the most numerous and massive. Cervical myocarditis is a leading cause of maternal and fetal illness and death during pregnancy. CMV is a key factor in the eventual foetal loss in people with BOH. Primary or secondary infection in the mother may lead to congenital infections in the unborn child by transplacental transfer of cytomegalovirus (CMV). Similar to other herpes viruses, the main infection happens later on by creating a dormant infection that causes a recurrent recurring response.Infection with this virus during pregnancy is significantly more complicated than other types of infections, and it may reactivate periodically over the childbearing years and still pass on to the fetus even if the mother has immunity..[3]

Clinical signs of cytomegalovirus (CMV) may vary from no symptoms at all to serious harm to the developing foetus and, in very rare instances, even death during pregnancy..[4]

International Journal For Advanced Research In Science & Technology
A peer reviewed international journal www.ijarst.in
ISSN: 2457-0362

2. Material and Methods

This prospective cross-sectional research used enzyme-linked immunosorbent assays (ELISAs) to analyze blood samples taken from pregnant women visiting the emergency room of the Integral Institute of Medical Science & Research on Dasauli, Kursi road, Lucknow..

Study population

Participants were pregnant women seen at the Obstetrics and Gynaecology department as well as the Microbiology department at IIMS&R in Lucknow.

Sample size estimation:

All the samples received during the study period i.e. 40.

Inclusion Criteria: The study comprised all pregnant women who came to the Obstetrics and Gynecology department of IIMS&R, Lucknow, who were diagnosed with BOH.

Exclusion Criteria:

- Women who were not willing to participate in the research or who had a fetal congenital defect as a result of a pregnancy injury were not included.
- The patient declined to provide the necessary permission to take part in the research.

Data Analysis:

Statistical analysis was carried out using the trial version of SPSS software once the data was downloaded to the computer. The chi-square test was conducted in accordance with the necessary criteria.

Sample collection:

- The pregnant women had 1.2 ml of blood drawn aseptically using a vein puncture procedure in a vacutainer.
- The serum was separated by centrifugation at 3500 Rpm for 15 minutes after the blood was allowed to coagulate.
- Next, the TORCH MICROLISA ELISA kit was used for testing.

3. Result

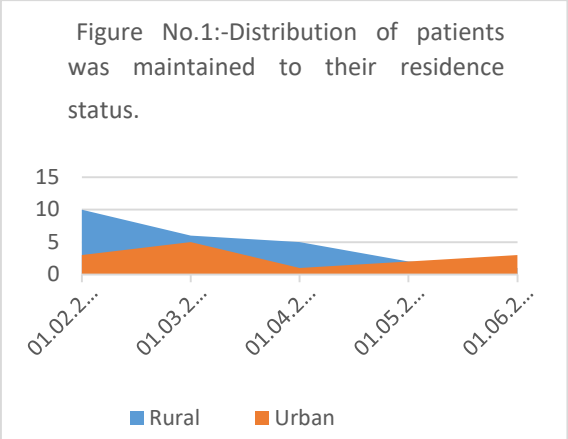
All things considered The purpose of this ELISA test was to determine the seropositivity of cytomegalovirus IgM in 40 pregnant females with BOH. According to their age group, patients in Table 1 are given out of their safe custody. Patients ranging in age from 26 to 30 made up 35% of the total, with those between 20 and 25 accounting for 27.5%, those between 31 and 36 for 25%, and those between 37 and 40 for 7.5% and 5%, respectively, rounding out the patient age distribution.

International Journal For Advanced Research In Science & Technology
A peer reviewed international journal
www.ijarst.in
ISSN: 2457-0362

Table No.1:-Distribution of patients is according to age.

Age group(in years)	Number of patients
20-25	**11**
26-30	**14**
31-35	**10**
36-45	**3**
41-45	**2**
Total	**40**

The distribution of maintained patients to their domicile is shown in Figure 1. Of the patients surveyed, 24 were from rural regions and 16 were from metropolitan areas.



Based on their educational level, Table 2 displays the distribution of patients who were maintained. The majority of patients (37.5%) were found to be illiterate, with 25% having completed secondary education, 17.5% having completed pre-primary, 15% having completed high school, and 5% having completed graduate or above.

Table No. 2:-Distribution of patients according to their educational status

Educational status	Number of patients
Graduate and above	2
High school	6
Pre primary	7
Primary	10
Illiterate	15
Total	40

International Journal For Advanced Research In Science & Technology
A peer reviewed international journal www.ijarst.in
ISSN: 2457-0362

According to their BOH order, patients are registered for Cytomegalovirus IgM ELISA testing based on their month of pregnancy, as shown in Table 3. Of the 40 patients surveyed, 42.5% were not pregnant, 32.5% were pregnant with a bleeding disorder, and 25% were pregnant and attending their first prenatal appointment.

Table No.3:-Distribution of patients as reported to pregnancy with BOH condition at time of registration.

	Number of patients
Pregnant patient with BOH	13
Non pregnant patient with BOH	17
Patient come for their first antenatal check up	10
Total	40

Fig 2. Graph represent the no of patients is according to their pregnancy with BOH condition at time of registration.

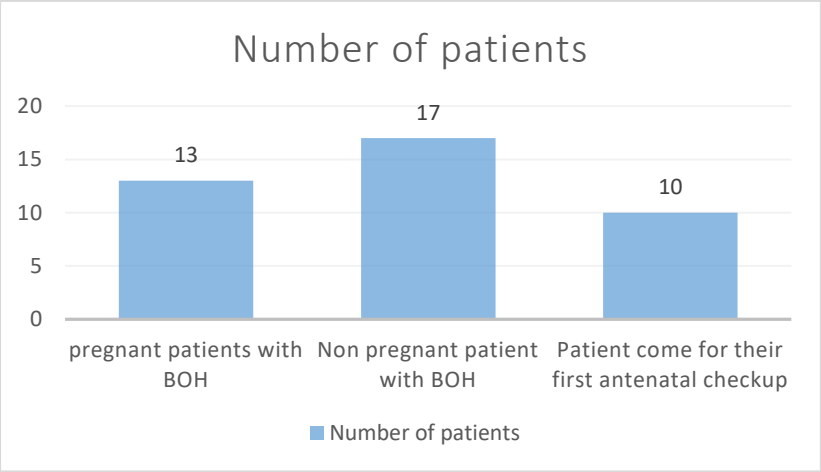
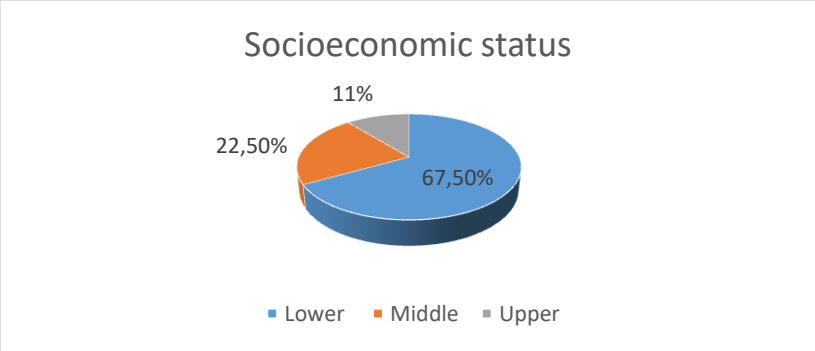


Figure 3. Giving out of patients according to their socioeconomic status which among 40 patients 27 were from lower class, 9 were from middle class and 4 were from upper class.



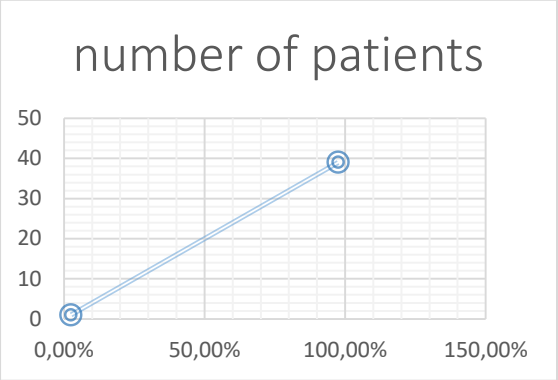
International Journal For Advanced Research In Science & Technology
A peer reviewed international journal www.ijarst.in
ISSN: 2457-0362

Out of 40 sample, 39 patients (97.5%) patient register in the study were found to be negative and only 1 patient (2.5%) were found to be positive.

Table No. 4: Result of ELISA test for Cytomegalovirus IgM seropositivity with BOH in tabular form.

Result	**Number of female patients**	**Percent (%)**
Positive	**1**	**2.5%**
Negative	**39**	**97.5%**
Total	**40**	**100%**

Fig.4 This graph representing the Seropositivity of CMV with BOH.



4. Discussion

Evidently, maternal infections are a major contributor to pregnancy loss, and the high incidence of these infections in BOH patients may be a serious concern (Surpam RB, et al 2006). A significant risk of intrauterine transmission, which may cause severe fetal damage, growth retardation, jaundice, hepatosplenomegaly, and central nervous system abnormalities, is associated with primary CMV infection during pregnancy (Daiminger A, Bader U et al 2005). Symptomatic congenital infection and fetal loss are more common in cases of primary CMV infection during pregnancy. Due to the lack of symptoms in adults, clinical diagnosis of this illness is challenging (Kapil S. et al1992). Primary infection is indicated by the development of IgM antibodies. One study found that 8.4% of women with BOH tested positive for CMV IgM (D Turbadkar et al., 2003).Multiple researchers have backed the idea that pregnant women should have their CMV-specific IgM levels tested (Stagno S, et al.JAMA 1986; 256: 1904-1986).

Among CMV patients who tested positive for IgG, around 10% had full-term deliveries, whereas 3.48% (3/86) had preterm deliveries. 3.48 percent of women who tested positive for IgG had spontaneous abortions, while 1.16 percent experienced stillbirths.

A titer of 5.81% for herpes simplex virus was linked to an IgG positive pregnancy, an IgM positive full-term delivery, a 2.32% IgG positive preterm delivery, and an IgM positive spontaneous abortion (MS Sadik, et al 2012).

According to Sheetal Manicklal et al. (2013), the prevalence of congenital CMV infection ranges between 0.22 to 2.2% of all live births globally. Everyone is infected with CMV. In poor socioeconomic situations, CMV is more common. The seroprevalence rates of CMV range from 80% to 100%, which is greater in the low and medium income groups.

A seropositivity of 2.5% for CMV IgM antibodies was demonstrated in this investigation. Voona et al. also found a decreased IgM seropositivity. 3.57 percent in 2008 in Chennai and Sadik et al. As of 2012, the IgM positive rate in Hyderabad was zero percent. Additionally, lower seropositivities of 5.8%, 5.33%, and 4.67% were shown by Yasodhara et al. (2001), Rajendra Surpam et al. (2006), and Gumber et al. (2008), respectively. It is possible that higher living standards are to blame for such low seropositivity. Despite the fact that CMV seropositivity is greater Seropositivity has been recorded in the following studies: Ravindra Kumar et al. (2018), Padmavathy et al. (2013) Bengaluru, Turbadkar et al. 2003 Mumbai, Suryawanshi et al. 2014 Satara, and Sen. et al. 2012 Varanasi. The percentages accordingly are 9.33%, 9.2%, 8.42%, 27%, and 34.7%.

.

5. Conclusion

The purpose of this research was to identify cases of Cytomegalovirus IgM seropositivity in pregnant women with a history of complications during their routine prenatal visits to IIMS&R in Lucknow. We found that one sample was reactive for CMV IgM using the ELISA test technique. Our investigation revealed an overall seropositivity rate of 2.5% for CMV IgM. Patients from rural regions made up the bulk of the patients surveyed in this research, which looked at both outpatient and inpatient visits to IIMS&R in Lucknow. The highest proportion of patients (35%) were found to be in the 26–30 age bracket, followed by the 20–25 age bracket (27.5%), the 31–36 age bracket (25%) and the 37–40 age bracket (7.5%), and finally the 41–46 age bracket (5%).

6. Declaration

Financial or other competing interests; none

7. References

i. Kumari N, Morris N, Dutta R. Is screening of TORCH worthwhile in women with bad obstetric history: an observation from eastern Nepal. J Health Popul Nutr. 2011; 29: 77-80.2.
ii. Maingi and Nyamache BMC Research Notes 2014, 7:794 Page 2 of 5http://www.biomedcentral.com/1756-0500/7/7943.
iii. Hala Mohamed Majeed Hassan, Abdulghani Mohamed Alsamarai, Zainab Khalil Mohamed Aljumaili, Firah Ghali Alsalihi. Association between Herpes Simplex virus type 2 (HSV 2) and bad obstetric outcomes. Our Dermatol Online. 2014; 5(1): 19-28.4.

iv. De Paschale M, Agrappi C, Manco MT, Paganini A, Clerici P (2009) Incidence and risk of cytomegalovirus infection during pregnancy in an urban area of Northern Italy. Infect Dis Obstet Gynecol 2009: 206–505.
v. Rajendra, B., Surpam, et al. Department of Microbiology, Indira Gandhi Govt. Medical College, Nagpur. Serological study for TORCH infections in women with BOH. J. Obstet. Gynecol.2006;6 (1): 947-1091
vi. Daiminger A, Bader U, Enders G. Pre-and peri conceptional primary cytomegalovirus infection: risk of vertical transmission and congenital disease. Obstet Gynecol Surv. 2005; 60:420-22.
vii. Kapil S. Broor S. Primary cytomegalovirus infection in pregnant and non pregnant women in India. Indian J Med Microbial 1992;10:53
viii. D Turbadkar, M Mathur, M Rele. Seroprevalence of TORCH infection in bad obstetric history.Indian J Med Microbial ,(2003) 21 (2):108-110
ix. Stagno S, et al .JAMA 1986;256: 1904-1986).72.Sadik MS, Fatima H, Jamil K, PatilC. Study of TORCH profile in patients with bad obstetric history. Biology and Medicine. 2012; 4: 95-101
x. Sheetal Manickal, Vincent C. Emery, Tiziana Lazzarotto et al. The “Silent” Global Burden of Congenital Cytomegalovirus. Clin Microbial Rev. 2013;26(1) : 86-102
xi. Voona R. TORCH profile in repeated abortions, bad obstetrics history patients and congenital anomalies;2008:87
xii. Padmavathy M, Gowri M, Malini J, et al ,Seroprevalence of TORCH infections and Adverse Reproductive outcomes in current Pregnancy with bad Obstetric History. J Clin Biomed Sci. 2013; 3(2):61-71.
xiii. Suryawanshi R, Deo S, et al. Serological study of TORCH infections in women with high delivery risk factor. J of Evolution of Med and Dent Sci. 2014;3(40): 10194-201
xiv. Gumber, S., et al. Occurrence of cytomegalovirus and Herpes simplex virus infections in Pregnancy.IJMM,2008:204-205
xv. Yasodhara, P., et al. 2001.Prevalence of specific IgM due to Toxoplasma, Rubella, Cytomegalovirus and Chlamydia trachomatis infections during pregnancy.IJMM,19(2): 52-56.