Cytomegalovirus (CMV) infection in pregnant women can be responsible for fetal loss or congenital malformations. In the present study CMV specific IgM antibody was detected by ELISA in pregnant women and its association with obstetric complications was assessed. CMV specific IgM antibody was detected in 15.98% of the 1918 pregnant women studied. It was reactive in 13.93% of the 1026 asymptomatic healthy pregnant women while 18.27% of the 892 women with obstetric complications were positive for CMV specific IgM antibody. These comprised of 16.37% with recurrent abortions, 16.83% with inevitable abortion, 28.85% with intrauterine death, 10% with premature delivery and 7.14% with intrauterine growth retardation, suggesting the need for screening of women of child bearing age for CMV infection.

**Key words:** CMV, ELISA, pregnancy, abortion complications like inevitable abortion, recurrent abortions (BOH), intrauterine death (IUD), intrauterine growth retardation (IUGR) and premature deliveries.

5 ml of serum sample was collected from all the patients and send to the virology division of Microbiology at SKIMS for CMV IgM serology by enzyme linked immunosorbent assay (ELISA). The ELISA technique was performed according to the instruction of the manufacturer.

**RESULTS**

The mean age of the patients was 26.2 years, the mean gestation was 19.0 weeks and the mean parity was 0.95. To determine the influence of age, the patients were divided into the two age groups; these less than or equal to 25 years and those more than 25 years. There was no statistically significant relationship between seropositivity and parity (p = 0.629).

**MATERIAL AND METHODS**

During the period between April 1998 to June 2000, 1918 antenatal women seen in the Gynae and Obstetric department of Sher-i-Kashmir Institute of Medical Sciences (SKIMS), were subjected to detection of CMV specific IgM antibody by ELISA test. These included 1026 asymptomatic pregnant women and 892 women with obstetric complications like inevitable abortion, recurrent abortions (BOH), intrauterine death (IUD), intrauterine growth retardation (IUGR) and premature deliveries.

Seropositivity of CMV IgM antibody seen in asymptomatic pregnant women and those with obstetric complications is shown in table 1.
A cytomegalovirus (CMV) specific IgM antibody was positive in 163 (18.27%) of the 892 obstetric patients and 143 (13.93%) of the 1026 healthy asymptomatic pregnant women during the first trimester. Out of the 507 patients with recurrent abortions, 83 (16.3%) revealed the presence of CMV IgM antibody. CMV IgM antibody was also detected in 34 (16.83%) of the 220 patients with inevitable abortion, 43 (28.85%) of the 149 patients with IUD, 1 (7.14%) of the 14 patients with IUGR and 2 (10.0%) of the 20 patients with premature delivery.

**DISCUSSION**
CMV is the most common congenital infection and its incidence has been estimated to be between 0.2 - 2.2% of all live births in different parts of the world. In 1994, a study conducted in Malaysia involving 1688 infants with congenital abnormalities were screened for evidence of congenital CMV infection and this was detected in 11.4% of the infants, which was much higher than other intrauterine infections like congenital toxoplasmosis (1%) and congenital rubella infection (2.7%)3.

Primary CMV infection in an individual can be detected by demonstration of CMV specific IgM antibody. Also primary infection in pregnancy has a higher incidence of symptomatic congenital infections and fetal loss. However, infected infants can be asymptomatic at birth with 10-15% of these subsequently developing late sequelae such as visual and auditory defects.

In the present study, CMV specific IgM antibody was detected in 15.98% of all pregnant women tested, indicating the substantial prevalence of infection in the local population. Out of the 1026 asymptomatic pregnant women 13.93% tested positive for the CMV specific IgM antibody revealing primary infection during the first trimester and increasing the possibility of transmission of infection in utero to the foetus.

**Table 1: ELISA positivity for CMV IgM antibody in different groups**

<table>
<thead>
<tr>
<th>Groups</th>
<th>No. of samples</th>
<th>ELISA positivity (percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recurrent abortions</td>
<td>507</td>
<td>83 (16.37)</td>
</tr>
<tr>
<td>Inevitable abortion</td>
<td>202</td>
<td>34 (16.83)</td>
</tr>
<tr>
<td>IUD</td>
<td>149</td>
<td>43 (28.85)</td>
</tr>
<tr>
<td>IUGR</td>
<td>14</td>
<td>1 (7.14)</td>
</tr>
<tr>
<td>Premature delivery</td>
<td>20</td>
<td>2 (10.0)</td>
</tr>
<tr>
<td>Healthy pregnant women</td>
<td>1026</td>
<td>143 (13.93)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1918</td>
<td><strong>306 (15.95)</strong></td>
</tr>
</tbody>
</table>

Arti Kapil et al have reported CMV specific IgM antibody in 12.9% of pregnant women with complications5. In the present study, 18.27% obstetric patients showed the CMV specific IgM antibodies. All these findings indicate that CMV infection is not uncommon in our local population. This high seroprevalence reflects the low hygienic standards and practices in our part. Also CMV can lead to substantial damage to the fetus and as the damage done in utero cannot be reverted, control of intrauterine CMV infection is important. Hence prevention of CMV infection, especially in the pregnant women is essential.

Screening of pregnant women, although, cannot change the outcome of the disease but may be useful in alerting the physician for possible infection to the baby. Hence routine screening of females of child bearing age for CMV infection is desired in order to reduce the fatal outcome of the pregnancy occurring due to the CMV infection.

**BIBLIOGRAPHY**