HSV-2 Seroprevalence in infertile population

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ABSTRACT

A study was conducted using 416 infertile patients comprising 168 males and 278 females who were presenting with signs and symptoms of genitourinary tract infections. The selection of infective cases is to exclude those who had causes of infertility other than infection. Blood samples were collected to study the IgG and IgM antibodies against HSV2 in both male and female cases. ELISA test was performed to detect antibodies. The results were recorded. On processing of the results it was found both IgM and IgG antibodies against HSV2 were present. In men IgM and IgG antibodies were present in 4.7% and 15% respectively. In the case of female population it was 6% and 21 % respectively.

Key words: HSV-2, genital herpes, seroprevalence of HSV-2.

INTRODUCTION

Herpes simplex virus (HSV) infection is the most common among the causes of sexually transmitted diseases. Symptomatic infection with HSV causes much physical discomfort, psychological disorders and interferes with sexual relations [1]. Many people have mild or unrecognized infections but shed the virus intermittently in the genital tract.

The majority of genital herpes infections are transmitted by persons unaware that they have the infection or by those who are asymptomatic when transmission occurs. HSV-2 prevalence is significantly higher among women attending infertility clinics [2] and Genital herpes can be transmitted to the baby during delivery through the birth canal [3-4]. Oligozoospermia is two times more frequent in HSV-containing ejaculates than in HSV-negative one. Thus, symptomatic HSV infection has a negative effect on male Fertility[5]. An estimated 20% of North American, 15% of European, and 50% of sub-Saharan African adults are infected with HSV-2, with a higher prevalence in women than men [6,7,8]. HSV-2 sero-prevalence studies show variation in infection by geographic location. Some of the highest prevalence of HSV-2 have been found in Africa and America [9]. Lower prevalence has been found in Western and Southern Europe compared to Northern Europe and North America. Although there have been few studies, the lowest prevalence has been seen in Asia [10-15]. There is also a great deal of variation within regions. In India, HSV-2 prevalence of over 40 percent have been reported in STI clinics in Pune [16] but in a study of low-risk blood donors in Vellore, 15 percent of females and 10 percent of males were found to be infected with HSV-2 [17].
Aim and Objective

- To study the prevalence of HSV2 infection in infertile population
- To study the prevalence of HSV2 antibodies in infertile men and women
- To compare the prevalence rate of HSV2 among the male and female population

Materials and Methods

During the period from March 2005 until July 2009, men and women suspected for genitourinary infection were included in the study. The study populations included were 446 infertility cases comprising of 168 men and 278 women. Exclusion criteria were used to exclude those who had causes of infertility other than infection. The study population included patients with signs and symptoms of uro-genital infection and past history of diseases.

Herpes viral infection is associated with infertility, especially in females. Hence the infection was proved by demonstrating presence of HSV type 2 IgM and IgG antibodies in the serum of infertile patients. Using ELISA, IgM and IgG antibodies of Herpes Simplex type 2 infection was detected. The NovaTec HSV 2 IgM and IgG recombinant ELISA were used to detect HSV 2 infection in human serum.

Results

Genital herpes infection caused by Herpes Simplex Virus Type 2, was studied by detecting antibodies. IgM and IgG antibodies to HSV-2 infection were detected from the serum samples of 446 infertile men and women. The results are shown in Table 1.

Table 1 HSV-2 sero-prevalence of IgM and IgG antibodies in Men and Women

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>Both Men &amp; Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>IgM Positive</td>
<td>8</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>IgG Positive</td>
<td>26</td>
<td>67</td>
<td>93</td>
</tr>
<tr>
<td>Total Positive</td>
<td>34</td>
<td>85</td>
<td>119</td>
</tr>
</tbody>
</table>

The HSV-2 antibody prevalence in the study population was 27%. HSV-2 antibodies were found in 30.5% of women tested and 20.2% of men tested. Seroprevalence of IgM and IgG in the study population was 6% and 21% respectively. In men IgM and IgG were detected in 4.7% and 15% respectively. The prevalence of IgM antibodies in women was 6.4% and IgG was 24%.
DISCUSSION

Testing for herpes simplex virus-2 antibody is not done commonly in clinical practice or in most municipal sexually transmitted disease (STD) clinics and so most people do not know their HSV-2 antibody status in their blood.

Most individuals who are HSV-2 antibody positive shed viruses from the genital tract even in the absence of recognized symptoms [18].

These individuals are probably responsible for a large fraction of new HSV-2 infections because they are not aware that they are contagious [19].

The present study investigated HSV-2 infection by ELISA technique and the prevalence of HSV-2 antibodies were estimated. The prevalence among the 446 infertile patient was 27%. This study report is comparable with the report of Choudhry, and co workers,[20] wherein 30% of patients attending STD clinics were found to have HSV 2 infection.

The present study found 30.5% of women and 20% of men were infected with HSV-2. The prevalence of this HSV-2 report coincides with the report of Kennent et al. (2009) [21], where in 38.4% of women and 20.2% men were infected with HSV-2. As per the observation of our study, women were significantly more positive for HSV-2 than men. This is similar to the suggestion of Kumaraswamy and associates [22], who found 50% of women and 29% of men to be positive for genital herpes.

The present study identified 6.4% of women to be positive for IgM antibody to HSV-2 and 24% of women to be positive for IgG which when compared to the study report of R. George et al (2004) [23] showed a higher percentage. In his study, IgM positivity in women was only 1.4% and IgG positivity was 18.5%.

The present study report on IgM and and IgG antibodies to HSV-2 in men also showed higher values than Stephen L et al; (2009) [24] wherein he found 0.9% IgM antibodies and 9.7% IgG antibodies in men. Thus, this study results clearly showed an increase of prevalence rate of HSV-2 antibodies in infertile population.

CONCLUSION

The study revealed that antibodies for HSV-2 were present in the infertile population. Women were significantly more positive for HSV2 than men. The difference in the positivity rate in different studies suggested that the sero prevalence of HSV2 showed variation in infection by geographic location.

REFERENCES


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