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**ORIGINAL ARTICLE**

# Genital-Herpes Infection: Pregnancy Management

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## ABSTRACT

**Background:** Genital herpes is the most common genital tract infection that results into high rate of morbidity and mortality of neonates on vertical transfer and also of females.

**Objective:** To evaluate the management policies/techniques for HSV infection during gestation period.

**Study Design:** Retrospective study

**Place and Duration of Study:** Department of Obstetrics & Gynaecology, AJK Medical College Muzaffarabad Azad Kashmir from 1st January 2021 to 30th June 2021.

**Methodology:** Sixty females were enrolled within the age of 21-39 years who were pregnant and having complete clinical symptoms of sore-vesicle clusters and minimal ulceration. 4cc blood was withdrawn with division into 2cc whole blood for PCR testing and 2 cc into serum for viral antigen detection through ELISA based kits against HSV 1 and HSV 2 antigens.

**Results:** The mean age of 31.0± 4.2 years and majority of the women 48.3% were within the age of 34-39 years. The management therapy was found efficient in women suffering from herpes simplex virus 91.6% reduction found on polymerase chain reaction (PCR) reporting. Within the HSV 1 and HSV 2 pregnant women spontaneous delivery was observed in 24 (40%) women while rest 36 (60%) underwent cesarean delivery

**Conclusion:** Genital herpes infection can be managed and treated by using antiviral medications and through cesarean deliveries in majority of the participants.

**Keywords:** Genital herpes, Cesarean, Transmission, Neonates

## INTRODUCTION

Genital herpes simplex virus (HSV) is one of the most widely sexually transmitted viral infection which occur one in five women in US.[1,2] It became health concern for pregnant females as it gets vertically transmitted to the neonates and causes thousands of mortality and morbidity among newborns.[3] American College of Obstetricians and Gynecologists (ACOG) has released preventive measures and managing protocol for this lethal disease management especially during pregnancy.[4] Serological testing system is present to confirm suspected herpes simplex virus infections. Basic tests include antibody/viral detection techniques. Most widely used technique for HSV detection is polymerase chain reaction.[5,6]

American College of Obstetricians and Gynecologists does not suggest routine screening of HSV in asymptomatic women or HSV screening in pregnant females. It can also be transmitted after the delivery through skin lesions, oropharyngeal or cutaneous lesions directly implicit in viral transmission to neonates.[7] Lesions on breast could be the source of HSV to breastfeed neonate.[8] It can easily be transmitted by father, mother or by direct contact to any caregiver or health care provider.[9]

Oral antiviral medications are used against this infection and to combat its deadly consequences. It reduces the symptoms, disease severity and viral shedding. Most common antiviral agents that used against HSV infections is valacyclovir, acyclovir and famciclovir which are all approved by US food and drug administration (FDA). In more severe patients, oral medications are also used for more than ten days if lesions are also present.[10] Suppressive viral therapy is recommended in pregnant females who had history of recurrent HSV infection even beyond 36 weeks' gestation. This study will discuss the management strategies of herpes simplex infection in pregnant females.

## MATERIALS AND METHODS

This retrospective study was conducted at Department of Obstetrics & Gynaecology, AJK Medical College Muzaffarabad Azad Kashmir from 1st January 2021 to 30th June 2021. A total of 60 females were enrolled within the age of 21-39 years who were pregnant and having complete clinical symptoms of sore-vesicle clusters and minimal ulceration. After the complete examination of the patients their 4cc blood was withdrawn with division into 2cc whole blood for PCR testing and 2 cc into serum for viral antigen detection through ELISA based kits against HSV 1 and HSV 2 antigens. The whole blood was immediately processed while serum was stored at -20°C until analysis. Patient age, trimester, clinical symptoms and demographic information was recorded. The data was entered and analyzed through SPSS-25.

## RESULTS

The mean age of 31.0±4.2 years and majority of the women such as 48.3% were within the age of 34-39 years. Herpes infection was most common in 34-39 year of age. Its frequency was also seen to increase with the increasing age as well higher as gestational age, as it was highest in third trimester with 61.6% followed by 20.0% in second trimester (Table 1).

Women who were having herpes simplex 1 (HSV1) infection were given acyclovir or valacyclovir for their management within duration of 7-10 days TDS and 1 g BD in case of primary infection per orum respectively. While in reoccurring infection 5 days same course of acyclovir and 500mg per orum course for 5 days OD of valacyclovir was given. Regular suppression was managed by 400 mg TDS from 36 weeks till delivery or valacyclovir for 500 mg per orum BD in similar days was administered respectively (Fig. 1).

The management therapy was found efficient in women suffering from herpes simplex virus with a percentage of 91.6 reduction found on polymerase chain reaction (PCR) reporting, although there were 8.3% such cases where reduction was not seen. Shedding persisted in majority of pregnant women (Table 2).

Within the HSV 1 and HSV 2 pregnant women spontaneous delivery was observed in 24 (40%) women while rest 36 (60%) underwent cesarean delivery who elected this surgery by the guidance of their gynecologist for minimal risk on neonate. However still there was one neonate from cesarean delivery who got herpes simplex transmitted. While this transmission rate was significantly lower than seen in vaginal delivery case as 4 neonates got HSV (Table 3).

Table 1: Age and Trimester distribution among pregnant enrolled patients (n=60)

| Variable | No. | % |
|---|---|---|
| Age in years | | |
| 21-27 | 13 | 21.6 |
| 28-33 | 18 | 30.1 |
| 34-39 | 29 | 48.3 |
| Trimester | | |
| 1st | 11 | 18.4 |
| 2nd | 12 | 20.0 |
| 3rd | 37 | 61.6 |

Table 2: Genital herpes Reduction in pregnant women given antiviral management

| Genital herpes reduction | No. | % |
|---|---|---|
| Yes | 55 | 91.6 |
| No | 5 | 8.3 |

Table 3: Delivery mode and neonatal genital-herpes transmission

| Mode of delivery | No. (%) | Neonatal transmission |
|---|---|---|
| Cesarean Delivery | 36 (60%) | 1 (1.6) |
| Vaginal delivery | 24 (40%) | 4 (6.6) |

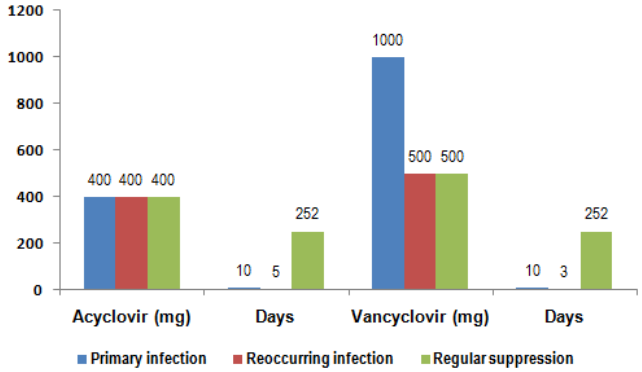


Fig. 1: Management of anti-viral dosage during pregnancy

## DISCUSSION

Herpes simplex virus is the most widely sexually transmitted virus which even reported in high frequency during third trimester upto 30-60%.[10,11] Many contributing factors plays critical role in virus transmission from mother to neonate, one of the most important cause is the vertical transmission of HSV. This virus persists very long in genital tract and also present in very high concentration. Virus specific antibodies, mainly glycoprotein plays a considerable contribution in combating and controlling viral transmission to new born.[12] If it is diagnosed in pregnancy, immediate antiviral may be initiated to minimize severity of the disease.

Few invasive methods such as amniocentesis, villus sampling and umbilical cord blood sampling sometimes also suggested for pregnant females with herpes simplex virus infection with genital lesions.[13] But this exacerbates the chances of neonatal infection in contrast to external monitoring procedures. However, it is recommended for the women with recurrent HSV infection but with no active lesion. Therefore, C-section is suggested for those women but it is not recommended for those females who had lesions only on non-genital areas including thigh or back. Breast feeding must not be stopped unless there is lesion on breast.

International organizations related to gynecologists and obstetricians recommended few preventive procedures and measures. HSV pregnant women must have C-section and should not wait for the vaginal delivery to reduce the virus transfer to their infant.[14] Some suppressive therapies are also suggested including the use of valacyclovir and acyclovir. This treatment also helps on combating HSV especially near full term.[15,16] On the other hand, few studies are also reported that cesarean delivery does not completely remove vertical transmission.[17] Females who have ruptured membranes should be treated early to reduce the symptoms of infections.[18,19] Preventive measures should be taken to minimize the chances of vertical transmission and for the health of female/mother.

## CONCLUSION

Genital herpes infection can be managed and treated by using antiviral medications and through cesarean deliveries in majority of the participants.

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