# Herpes Simplex Virus

**Approved – May 2001** **Revised & Reapproved – January 2007** **For Review – January 2008**

## *Preamble*

Guidelines outline recommendations, informed by both the best available evidence and by midwifery philosophy, to guide midwives in specific practice situations and to support their process of informed decision-making with clients. The midwifery philosophy recognizes the client as the primary decision maker in all aspects of her care and respects the autonomy of the client (1).

The best evidence is helpful in assisting thoughtful management decisions and may be balanced by experiential knowledge and clinical judgment. It is not intended to demand unquestioning adherence to it's' doctrine as even the best evidence may be vulnerable to critique and interpretation.

The purpose of practice guidelines is to enhance clinical assessment and decision-making in a way that supports practitioners to offer a high standard of care. This is supported within a model of well-informed, shared decision-making with clients in order to achieve optimal clinical outcomes.

## *Types*

HSV prefers mucous membranes, but it can affect any area of the body. There are two types of HSV, Type 1 (HSV-1) and Type 2 (HSV-2).

### HSV-1

Infections of the mouth, lip or face (e.g. cold sores) are usually, although not always, caused by Type 1. Recent studies have shown that an increasing number of genital HSV infections are indeed caused by the Type 1 strain. Although Type 1 is more infectious than Type 2, recurrent episodes are less frequent and primary episodes tend to be less severe. HSV-1 is the predominant contagion causing neonatal herpes simplex virus infection.

### HSV-2

Genital infections are often caused by the Type 2 strain. Type 2 is less infectious, but causes more severe symptoms and more frequent recurrent episodes than with Type 1 (2). Studies show that most HSV-2 seropositive persons have virologically active infection with intermittent shedding. Pregnant women may attribute these mild genital symptoms to bacterial vaginosis, recurrent yeast or allergies to pantyhose (3).

During an outbreak, HSV-1 and HSV-2 can be transmitted to non-infected individuals through kissing, sexual contact and touching affected areas. Careful handling of an infant at the time of an outbreak, including effective hand washing techniques, are necessary as the spread of infection from localized to systemic can be fatal in an infant (4).

## *Incidence*

HSV is one of the most common human viruses, and the most common STD. It is estimated that up to 30% of North Americans have genital herpes, and about 80% will suffer from a cold sore sometime in their life. As many as 80% of infected adults do not know they carry HSV, either because they never had overt symptoms or because they didn't recognize their symptoms.

HSV can only be spread by direct contact with an infectious person. S/he may have visible sores, sores in difficult to see places (e.g. on her cervix), or not have sores but be "shedding" cells that contain the virus. There is a 1% risk of asymptomatic viral shedding occurring at any time. Asymptomatic shedding is more likely to occur with HSV-2 than HSV-1 infection, frequent symptomatic recurrences, and a short time since the acquisition of the primary infection. Neonatal herpes infection occurs in 5.9 per 100 000 live births in Canada (4) and other authors estimate it to occur in 1 out of 3,200 live births in the Pacific Northwest of the United States (3). Around 85% of this

infection results from viral transmission near delivery and 70% of these cases occur through asymptomatic viral shedding and no lesions are experienced or seen (5).

## *Outbreaks - Maternal*

### TRUE PRIMARY EPISODE

The initial infection with HSV of any type is referred to as a *true* primary episode.

A primary outbreak is usually worse than a recurrent episode; people often report serious symptoms, such as pain, tingling, tenderness, and flu-like symptoms (such as fever, chills, headache, fatigue, muscle and joint aches), then painful blisters on the affected area which, when they rupture, leave shallow crusty ulcers. Depending on whether they now have oral or genital herpes, they will usually have swollen lymph glands around the neck or groin respectively. The cervix is affected 80% – 90% of the time during a primary genital outbreak.

Lesions usually appear on the infected area 2-14 days after being exposed to the virus. The lesions from a primary outbreak are generally larger, more numerous and last longer than those from a recurrent infection. The lesions may last for three weeks if no therapy is initiated.

There is an increased risk of transmission of the virus due to viral shedding for up to three months after the lesions from a primary infection have healed. Symptoms may or may not be present during this period.

If a mother has a primary outbreak during vaginal delivery there is a 30% - 50% chance of transmitting the virus to the infant.

> ***Recommendations for Primary HSV Outbreaks in Pregnancy***
>
> - *Treatment for the rest of the pregnancy with the anti-viral drug Acyclovir*
> - *If the outbreak is in the third trimester, it is recommended to birth by cesarean section due to high chance of viral shedding and therefore transmission to baby during vaginal birth*

### NON-PRIMARY FIRST EPISODE

If someone with HSV-1 is then infected with HSV-2 (or vice versa), this is referred to as a non-primary, first episode. This is not a *true* primary episode, because the HSV-1 antibodies moderate the effects of the HSV-2 infection (or vice versa). These episodes are usually worse than recurrent infections, but less than true primary infections.

### RECURRENT EPISODES

Five to 10% of pregnant women have recurrent genital herpes outbreaks during pregnancy, and one quarter of these women will have an outbreak during the last month of pregnancy (5).

A recurrent episode is a repeat outbreak triggered by an event that causes the virus to reactivate. Most people will have at least a few. Usually recurrences get milder and less frequent with time.

Sometimes the onset of an outbreak is preceded by symptoms such as tingling, pain, itching, burning, fatigue, fever and/or tenderness. Usually people with a history of herpes become aware of what their initial or prodromal symptoms are, as well as what can trigger outbreaks. The cervix is rarely affected. The average duration for healing is 5 days. Maternal antibodies are present and appear to provide partial protection from the spread of the HSV to the fetus.

> ***Recommendation for Recurrent HSV Outbreaks in Pregnancy***
>
> - *Acyclovir should be offered to anyone who is experiencing or at high risk of experiencing severe and/or frequent recurrent HSV outbreaks*
> - *Acyclovir should be offered at 36 weeks of pregnancy to women with known genital herpes, in order to prevent an outbreak or viral shedding during birth*

## *Outbreaks - Neonatal*

Neonatal herpes infection can have a range of symptoms, ranging from an isolated sore to brain infection and, in rare cases, death. Neonatal herpes can be diagnosed only if it is looked for. The problem with treatment is less the difficulty of finding a useful drug and more the delay that often occurs before the diagnosis is made. If the mother has a history of herpes, the pediatrician needs to know in order to consider the possibility of neonatal herpes when seeing a sick baby.

The most common time of transmission is as the baby passes through the birth canal, but it can also happen in the uterus or after the birth. In general, newborns are not affected 90% of the time (6,7). Almost all neonatal herpes infections occur as a result of true primary episode genital infection during late pregnancy when birth occurs before the development of protective maternal antibodies (up to 50% neonatal infection rate), versus as a result of a recurrent episode (3%) (3).

95% of infants with herpes have mothers who had no known history of herpes (6)

> ***Recommendations for Maternal Herpes Outbreak in Labour***
>
> - *In labour or with ruptured membranes, if there are herpes lesions around the cervix, vagina, labia, vulva, or anywhere where the baby might come in contact during the birth, cesarean is recommended to avoid transmitting the virus to the baby.*
> - *Cesarean section is more effective in preventing transmission if done prior to rupture of membranes (3)*
> - *If there is any suspicion of neonatal infection, the baby should receive immediate treatment with intravenous Acyclovir*

## *Screening and Diagnosis*

- Maternal report of history
- Blood test for IgG and IgM antibodies to HSV-1 and/or HSV-2, which would indicate a past or present infection. This test does not indicate what body part is infected.
- During an outbreak, a swab can be taken directly from the sores and used to verify that it is HSV, as well as determine which type.

> ***Recommendation for HSV testing in pregnancy***
>
> - *In the presence of lesions that could be HSV, it is recommended to do both a swab and a blood test.*
> - *If the mother has no known history of HSV infection but her partner does, she may be at risk of having a primary outbreak. In this case, it is recommended to have a blood test to verify a lack of HSV antibodies, and then counsel to practice safe sex for the rest of the pregnancy.*
> - *If both partners have a history of HSV, it may be appropriate to offer typing to them both, since the mother may be at risk of a non-primary first episode.*

## *Options for treatment*

**PREVENTION OF INFECTION**

The number one preventative against genital herpes is safe-sex, such as using condoms and other barrier methods.

If her partner has a history of genital herpes but she has never had an outbreak (confirmed by a blood test), it may be recommended that the partner take Acyclovir for the duration of the pregnancy to prevent transmission (It is generally recommend if the partner is male to wear a condom during intercourse whether or not he has an outbreak.

If either she or her partner are experiencing any prodromal symptoms, it is best to refrain from any intimate contact, wash hands frequently and not share eating utensils, lip balms, etc.

It is also important not to participate in kissing or oral sex if she or her partner has a cold sore.

Women with orolabial HSV should avoid biting their infants' nails since there have been reported cases or transmission to infants fingers (Herpetic Whitlow) (3).

### PREVENTION OF RECCURENCE

HSV is often triggered by stress – emotional stress, illness, inadequate diet, lack of sleep, hormone surges, allergies, etc. It can also be triggered by certain foods that are very acidic, spicy and/or high in a protein called arginine.

Pregnancy is a state of lowered immunity and high hormones, as well as having other unique stresses; therefore some women find they experience more frequent outbreaks during this time.

Prevention centres around stress reduction – exercise, massage, meditation, and diets low in fat, sugar, and processed foods also contribute to lowered stress levels. For those with severe or frequent outbreaks, diet modification to decrease high arginine foods, and increase high lysine foods can help, as well as supporting the immune system with supplements of vitamins, homeopathics, etc.

| DIET & NUTRITION (high lysine) | | |
|---|---|---|
| Dairy | Fish | |
| Soy | Meat | |
| Eggs | Potatoes | |
| Cultured foods (yogurt, sauerkraut) | | |
| Whole, unprocessed foods | | |
| **AVOID (high arginine, acidic, processed)** | | |
| Rice | Raisins | Oats |
| Chocolate | Wheat | Gelatin |
| Nuts | Popcorn | Citrus |
| Coconut | Caffeine | Tomatoes |
| Seeds | Alcohol | Vinegar |
| Sugar | Salt | |

### HEALING

There are numerous ways to deal with an HSV outbreak, depending on its severity and location.

Acyclovir is an antiviral drug that is commonly prescribed for women experiencing a primary HSV infection during pregnancy because of the increased risk of transmission to the fetus. This therapy is also an option for women experiencing frequent and/or severe recurrent outbreaks during pregnancy.

The current standard is to recommend Acyclovir to women with a history of genital herpes, to be taken from 36weeks till the birth. The aim is to minimize the chance of an outbreak or viral shedding at the time of birth when it is most dangerous to the baby.

| SUPPLEMENTS | |
|---|---|
| Vit C | Vit B complex |
| Vit E | Acidophilus |
| Zinc | Lysine |
| **COMPLEMENTARY MEDICINES** | |
| Homeopathics | |
| L-lysine cream | |
| Tea tree essential oil | |

It must be understood, however, that Acyclovir, while it is given to many pregnant women in North America every year and there have not been any confirmed risks to the baby, long-term studies continue to be needed.

> ***Recommendation for HSV treatment in pregnancy***
>
> - *Acyclovir should be offered to anyone having a primary HSV outbreak*
> - *Acyclovir should also be offered to anyone who is experiencing or at high risk of experiencing severe and/or frequent recurrent HSV outbreaks*
> - *Acyclovir should be offered at 36 weeks of pregnancy to women with known genital herpes, in order to prevent an outbreak or viral shedding during birth*
> - *If there is any suspicion of neonatal infection, the baby should receive immediate treatment with intravenous Acyclovir*

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