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# HSV INFECTIONS AND PREGNANCY

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## HSV Infections and Pregnancy [video transcript]

[00:00:05] I'm going to focus on HSV in pregnancy today. So, my objectives today are for you to understand the potential effects herpes has on pregnancy, be able to educate women on herpes and pregnancy, and be able to discuss preventative strategies and know when screening is indicated. I have nothing to disclose. So, despite the fact that herpes is really common, it is a disease with a lot of social stigma and patients haven't had a lot of emotional distress at this diagnosis. and can be really hesitant to, can be ashamed and then really hesitant to tell the providers or partners. And so, it does make it an infection that can be challenging to address properly in pregnancy. A little background on herpes, its demographics. So, it's caused by a virus. Right. Different from a bacteria in that antibiotics don't cure it. Once you have it, you have it for life. Most people have silent infections but a lot of people do get outbreaks. Genital and oral transmission is the most common way people are going to catch it. But moms can pass it to their babies during pregnancy and during delivery. For STDs in general, the number of new infections is roughly equal among young men and women, but young people aged 15 to 24 do make up 50 percent of the new infections, and this is also the case for herpes. And significant differences, unfortunately, exist among racial and ethnic lines with 50 percent of non-Hispanic black women having antibodies to herpes virus 2 and only 50 percent of non-Hispanic white females having them. And this also breaks down similarly for men. When we talk about herpes we're talking about type 1 and Type 2.

[00:01:42] So, historically Type 1 is what you get on your mouth and lips and type 2 are the genital and anal lesions, but, now we know that both types can be found orally and in the genitals. Studies that look at the sero-prevalence, or the presence of antibodies, show that herpes 1 is declining in kids less than age 15. So, kids used to pick it up all the time from their family members and friends. But, now we know to tell people not to like love over, love all over the baby when they have cold sores, and that transmission is actually decreasing among kids. So, that is a good thing. But, approximately seven hundred and seventy five thousand new cases are diagnosed each year and 24 million people are living with a known diagnosis of herpes. Unfortunately, you can shed the virus and pass it on even if you have no lesions, or symptoms, or even know that you have it. Most herpes infections are transmitted by people who do not know they have it and have no symptoms at the time; and it's estimated that 16 percent of the population has herpes and 81 percent of those do not know they have it. So, despite this, routine screening is not recommended. We'll talk about that a little bit more. So, primary herpes is your first outbreak. So, that's the first time you actually acquire the disease, and the presentation can be variable. Patients can have no symptoms or they can have severe outbreaks that look like the picture on the screen, in which you're definitely going to be aware that something is going on.

[00:03:03] But, in one study, only about one third of women experience any symptoms with their primary outbreak. So, again, most people are not knowing that they're having it. And rarely primary outbreaks can be associated with central nervous system involvement and organ disease, like hepatitis, and then disseminated herpes. But, overall, herpes is usually a very self limited disease. As I reviewed

earlier, fewer kids acquiring oral herpes. So, what this means, is that a lot of young women lack antibodies to HSV 1 at the time of their sexual debut. And so, they're more sensitive or more susceptible to actually getting a genital outbreak caused by Type 1 herpes. We also know that increasing oral sex behaviors likely contribute to this. The other thing was that the presence of herpes one antibodies was somewhat protective against developing a symptomatic primary herpes to outbreak. So, now when women get infected generally they are more likely than in the past to experience symptoms. The other thing is that as young women are now increasingly more likely to acquire their first primary herpes one or two out infection during their childbearing years, it's very concerning because the primary infections are the ones that we really worry about increased transmission to the baby. Despite all that recurrent infections are still most commonly how patients get diagnosed with herpes. The classic presentation is one to a few vesicles that do form the painful ulcers. There is a third class of outbreaks that we call Non Primary First Episode Genital Infection. So, this is where a woman has the first occurrence of a genital lesion, but has preexisting antibodies to another HSV type.

[00:04:44] So, an example would be, she has a history of type 1 herpes and oral lesions, was newly infected with type 2 in the genital region. This type of outbreak usually does present more like a recurrent infection than a primary infection. The incidence of new infection during pregnancy is about 2 percent. At any given time we estimate that there's about 10 percent of women who are negative and have partners who are positive. These are the women who are most at risk for transmission of herpes to the baby during pregnancy, which we call vertical transmission. Among women with recurrent genital herpes, approximately 75 percent can expect one recurrence during pregnancy, and approximately 14 percent of patients are going to have prodromal symptoms or clinical recurrence at the time of delivery. Neonatal herpes is usually acquired during the labor and delivery stage of pregnancy. Basically, by direct exposure to the virus which is being shed from infected sites like the cervix, vagina, vulva, and the perianal area, rather than getting infections through the placenta. Most moms who deliver babies with herpes have no history of having herpes. Just like with non-pregnant patients, most infections in pregnancy are silent. Passing along to the baby is highest if you get a new primary infection near the time of delivery, as this is when it is most likely to be passed through the placenta in addition to passage through the vagina. And as I mentioned earlier, 75 percent have at least one recurrence during pregnancy. Approximately 14 percent are going to have prodromal symptoms or clinical recurrence at delivery. But, fortunately, even if you have an outbreak or are shedding virus at the time of delivery, if it's recurrent disease the risk of the baby getting infected is less than 1 percent.

[00:06:25] The significantly lower frequency of the neonatal infection with recurrent infections is likely related to the protective effect of the maternal antibodies and the fact that when they shed there's usually a lower concentration and a lower a shorter amount of shedding a shorter time that shedding occurs. Women who do have a primary outbreak early in pregnancy and develop herpes antibodies before the onset of labour, do appear to have a similarly low risk of neonatal transmission as with whom recurrent infection. Again, it's likely due to the protective effect of maternal antibodies that take about 12 weeks to develop. As herpes isn't a reportable disease, we don't have great numbers but it is estimated

that about 1500 babies are born with herpes infection every year. Early in utero infections have been anecdotally reported and possibly associated with miscarriage, congenital anomalies, preterm birth, and poor growth in the uterus, but neonatal herpes is where we have the most data and information and it's the most worrisome. So, death from disseminated or neurological infections can be as high as 30 percent, and approximately 20 percent the babies that survive can have long term neurological and developmental problems. So, it's no good. As I said earlier there's no cure for herpes. There are antiviral medications, but they treat symptoms and not the disease. The medications can be trying to prevent outbreaks and to prevent the virus from shedding. So, if you have herpes and your partner doesn't, you can take a medicine like acyclovir to try and prevent it from being passed you partner. The antivirals massively decrease the amount of shedding, but they don't prevent it altogether. So, preventing babies from getting herpes involves several things.

[00:08:12] So, the first one is that providers really need to be able to talk to their patients about the risk and the patients really need to be able to feel comfortable confiding in their providers about whether they know they have herpes or their partners have herpes. If you're pregnant and you've a partner with herpes and you don't, we recommend that use condoms during pregnancy and avoid sex in the third trimester. If you have a herpes outbreak during pregnancy, we do recommend suppressive medications like acyclovir, valacyclovir to prevent recurrent outbreaks in the third trimester. And then finally, if you have a known outbreak or prodromal symptoms at the time of or within two weeks of delivery, you really should be talking about a cesarean delivery with the patient. Its standard of care even though the even though the risk of transmission to the baby with recurrent outbreaks is less than 1 percent, it has such devastating consequences that we do recommend cesarean delivery. So, women with a history of genital herpes who present with an active ulcer, excuse me, for women who have no history of genital herpes and they present with an active ulcer during pregnancy, you should go ahead and do direct viral testing with type specific serology, so, HSV ones and twos. The ulcer really does need to be unroofed and a swab of the vesicle fluid really needs to be sent. I always tell people make sure you warn the patients that this is going to be incredibly painful. The other thing is that PCR is more sensitive in culture, so, we are really recommending that you send PCR on these lesions in pregnancy.

[00:09:43] We also recommend empiric therapy to be started even though herpes is self limited. But treatment can reduce the duration of lesions, symptoms, viral shedding, and the risk of a complicated primary infection, which can be higher in immunocompromised patients like pregnant women. So, acyclovir 400 milligrams by mouth three times a day for seven to ten days is the preferred treatment. You can use valacyclovir a thousand milligrams by mouth twice a day, if you think your patient is not going to be compliant with them three times a day dosing. The reason we recommend a c yclovir is that it has just been more well it has been more well studied in pregnancy and even though valacyclovir is generic, acyclovir is still usually cheaper. But valacyclovir is OK to use if you need to. Unfortunately, if you have a known primary herpes outbreak in pregnancy, antivirals can't prevent transmission directly across the placenta. So, you're treating mom symptoms but you're not really treating prevention or preventing harm to the baby. With recurrent infections, treatment duration is shorter at five days. The

dosing of valacyclovir drops to 500 from a gram. The treatment is really not necessary as the episodes are short lived; not going to cause transmission to the baby.

[00:10:57] And so a decision to treat can just be made at patient preference. The suppressive therapy should be recommended for any women with a primary or recurrent outbreak during pregnancy, and dosing suppress remains the same as treatment for recurrent outbreaks. And then we use suppressive therapy basically to decrease the frequency of symptoms, so, prodromal symptoms, symptomatic recurrences at the onset of labour, so, that we can decrease the need for his hearing delivery. It does also decrease asymptomatic shedding and then further decreases transmission to the baby at the time of a vaginal delivery. Few other pearls for clinical management, things that people ask about. So, trans-surgical procedures like, chorionic villus sampling to look for chromosome problems, or placement of a cerclage to prevent preterm delivery. Those should be avoided when genital lesions are present, but procedures like an amnio that goes through the placenta, through the belly are totally fine. In terms of timing a c-section we really recommend that if there are, so, women who have active herpes and even if their crust; So, if they have genital lesions even if they're crusted over or have prodromal symptoms like pain and bleeding, and the outbreak has been within two weeks of delivery, two weeks of labor, we really recommend that as soon as labor starts or membranes are broken that you go ahead and proceed with c-section again to decrease the amount of time that shed viruses could potentially get up to the baby. There is no real data that if you have been had your membranes ruptured greater than six hours that a c-section is going to prevent any transmission to the baby, but we still are recommending it; but, moms probably should know that we don't know if there's true benefit if it has been more than six hours. In women with a primary infection during pregnancy, the optimal approach is unclear, but viral shedding can be really prolonged, potentially like even 18 weeks and things like that, and maternal antibodies haven't really might not have developed before delivery. And so, discussion with women is critical we do tell them that we don't have a lot of data.

[00:13:10] But, what we're currently recommending is if it's been shorter than 12 weeks between the outbreak and delivery, that we really should be considering a c-section for this primary infection. C-section is not indicated for women who have herpes in non genital areas, like their buttocks or their legs. We do try to avoid using scalp electrodes like internal monitoring or doing things like backings and forceps again trying to prevent like micro-breaks in the baby's skin that could allow transmission of virus. Pre-term, premature rupture of membranes, right, so, like when a woman breaks her bag of water at like 28 weeks and is not in labor, there is always that 'well what do we do if she has herpes or if she has a primary herpes outbreak?' That's a little bit more complicated than I can discuss, you know, in a simple slide, but we can talk about that at the end. But that really needs to be individualized and discussion with them, a high risk pregnancy doctor, is probably indicated. The other thing to really remember is that 5 to 50 percent of neonatal herpes is actually acquired after birth from a family member. So, it's important that parents and caretakers with active lesions, regardless of where they are, be very careful about handling the baby. The lesions should be covered, hand should be washed before touching the baby. Breastfeeding is not contra indicated, as long as there are no lesions actually right on

the breast. And if mom has an outbreak and requires , excuse me, has an outbreak and requires or desires antivirals, they are still fine for her to take

[00:14:42] while she is breastfeeding. Pediatrician taking care of the baby should be made aware about any possible neonatal herpes exposures so they can be monitored. So, again that's where the ability to have a good open and trusting conversation between women and the providers is really important. So, we make sure the pediatricians know. And finally, we get to that dilemma of screening. So, we screen all pregnant women for HIV, syphilis, Hepatitis B, why don't we do that for herpes? So, unlike the other infections, you know, available evidence indicates that screening does not meet the usual criteria for an effective preventative strategy. So, screening everybody is not initially going to prevent the disease from being passed along. And then, the risks and harms associate with universal screening. So, false positives, the anxiety, the social stigma, the disruption of personal relationships, greatly outweigh the benefits of screening all pregnant women just to try and identify those that might be at risk for primary infection. So, the exception to screening might be the pregnant woman with a known positive partner and if she has no known history it's reasonable in that situation to have a discussion about screening to see if she actually may have antibodies and have evidence of disease, so, that in that situation they might potentially be able to avoid having used condoms, avoid not having not have to avoid having sex in third trimester. And then that is also a great situation were talking about the partner being on suppressive therapy to decrease shedding would be something to consider. But, again, the big take home for screening is that it's not universally indicated. And that's herpes in pregnancy, in a nutshell. So, thanks for listening.

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