

What is the role of herpes virus serology in sexually transmitted disease screening?

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EVIDENCE-BASED ANSWER

Screening for herpes simplex virus type 2 (HSV-2) infection with antibody testing is not indicated for asymptomatic adults (strength of recommendation [SOR]: **B**, prevalence studies and predictive value of testing). Screening with serology testing is not indicated for asymptomatic pregnant women (SOR: **B**, 1 cohort study).

You may consider offering testing to asymptomatic patients with an HSV-positive partner, patients with HIV infection, and those with current or recent sexually transmitted infection or high-risk behavior (SOR: **C**, expert opinion and 1 case control study with extrapolation of results).

CLINICAL COMMENTARY

Counsel patients that the diagnostic gold standard remains viral culture or PCR testing of active lesions

Early in my practice, a couple came to my office demanding serology testing for HSV after resolution of a new genital lesion. The results of the non-type-specific HSV serology led to more questions than answers due to cross-reactivity between virus types. Even with the newer type-specific glycoprotein enzyme immunoassays for HSV 1 and 2, I reserve serologic testing for specific situations, as outlined in this

review, and when recurrent genital signs or symptoms of unclear cause present with negative viral culture results. I counsel patients that the diagnostic gold standard remains viral culture or PCR testing of active lesions. The best course of action for most asymptomatic patients remains sexually transmitted disease counseling and returning to the clinic for viral culture if a suspicious lesion returns.

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Evidence summary

An effective screening test for HSV would need to identify those with HSV infection before substantial morbidity resulted, and effective interventions would need to be available for use in the asymptomatic stage. Screening for HSV-2 must also consider the psychosocial impact of serologic diagnosis in those without symptoms, as a

qualitative study showed both negative and positive emotional responses in those with positive serology, with short-term emotional responses described as surprise, denial, confusion, distress, disappointment, and sense of relief.¹ Patients also expressed fear of partner notification, concern for transmission to newborns, and concern for social stigma.

FAST TRACK**Reserve serologic testing for those with HIV infection, HSV-positive partners, current or recent STI, or high-risk behaviors**

Pre- and post-test counseling must accompany testing as negative emotional or psychological responses are amenable to this intervention. A consideration for screening decisions is the positive predictive value (PPV) of testing for the specific patient, which ranges from 58% (in a British population with 4% prevalence) to 90% (in a population with 22% prevalence taken from sexually transmitted disease clinics in the Netherlands).² (A PPV of 58% means that only 58% of women with a positive test actually had the disease, and 42% were false-positive).

The primary goal for screening pregnant women is prevention of neonatal transmission of HSV. A prospective observational study³ of 7046 women found that acquisition of HSV-2 during pregnancy was asymptomatic in 74% of 94 cases. No increase in neonatal or pregnancy-related morbidity was seen for those patients who had seroconverted by the time of labor. The main benefit of serology testing during pregnancy has been to identify patients with asymptomatic infection and counsel them on reporting new symptoms for evaluation and treatment.

Another prospective cohort study⁴ identified seropositive pregnant women with no history of genital herpes. Forty-three of 264 (16%) of these women were able to identify and report clinical HSV to their physician during the pregnancy.

Testing of asymptomatic patients with HSV-2 serology and counseling has been recommended by some experts⁵ for motivated patients with current or recent sexually transmitted infection or HIV infection and for partners of HSV-positive patients.⁶ Screening could give those identified the opportunity to learn to recognize symptoms, decrease transmission, and understand risks of acquiring HIV or other sexually transmitted infections. Patients screening negative might have heightened awareness to susceptibility and reinforce lifestyle changes.⁶ Success of HSV prevention strategies is reviewed elsewhere.⁷

Recommendations from others

The Centers for Disease Control and Prevention, the United States Preventive Services Task Force, and the American Academy of Family Physicians do not recommend screening asymptomatic adults for HSV infection.^{7,8} The American College of Obstetricians and Gynecologists does not recommend routine screening of pregnant women for HSV.⁹

REFERENCES

1. Melville J, Sniffen S, Salazar L, et al. Psychosocial impact of serological diagnosis of herpes simplex virus type 2: a qualitative assessment. *Sex Trans Infect* 2003; 79: 280-285.
2. Krantz I, Lowhagen G, Ahlberg B, Nilstun T. Ethics of screening for asymptomatic herpes virus type 2 infection. *BMJ* 2004; 329:618-621.
3. Brown Z, Selke S, Zeh J, et al. The acquisition of herpes simplex virus during pregnancy. *N Engl J Med* 1997; 337:509-516.
4. Frenkel L, Garratty E, Ping S, et al. Clinical reactivation of herpes simplex virus type 2 infection in seropositive pregnant women with no history of genital herpes. *Ann Int Med* 1993; 118:414-418.
5. Centers for Disease Control and Prevention. Incorporating HIV prevention into medical care of persons living with HIV: recommendations of CDC, the Health Resources and Services Administration, the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America. *MMWR Recomm Rep* 2003; 52(RR-12).
6. Centers for Disease Control and Prevention. Diseases Characterized by Genital Ulcers. Sexually Transmitted Diseases Guidelines. *MMWR Recomm Rep* 2002; 51(RR-6):11-25.
7. Screening for genital herpes simplex. Rockville, Md: US Preventive Task Force updated March 2005. Available at: www.ahrq.gov/clinic/uspstf05/herpes/herpesup.htm. Accessed on April 18, 2006.
8. American Academy of Family Physicians. Summary of policy recommendations for periodic health examinations. Leawood, Kan: American Academy of Family Physicians; 2004. 15pp.
9. American College of Obstetricians and Gynecologists. *Guidelines for Perinatal Care*. 5th ed. Elk Grove, Ill: AAP; Washington, DC: ACOG; 2002.