HSV / VZV Detection from Lesions

Background Information

Herpes simplex viruses (HSV) (Types 1 and 2) and Varicella-Zoster virus (VZV) are important causes of vesicular lesions. In many instances, laboratory testing is not needed to prove the presence of the virus. For example, if a patient presents with shingles in a classic dermatomal distribution, then the diagnosis is made based on the clinical findings, and laboratory testing for VZV is not needed. However, in other instances, laboratory testing is essential to demonstrate the presence of the virus (e.g., low level viral shedding from a mucous membrane-associated lesion). Laboratory studies are also important for differentiation of HSV and VZV when the clinical presentation is not characteristic (e.g. shingles in the genital region).

Clinical Indications

The Symptomatic Patient: When the cause of vesicular or similar lesion is uncertain, then the HSV/VZV Detection by Nucleic Acid Amplification Test should be ordered.

The Asymptomatic Patient: Asymptomatic vaginal shedding of HSV is a risk factor for the baby during delivery. This test is warranted in pregnant women who are near delivery, if there is a concern for the possibility of HSV shedding.

Results and/or Interpretation

Qualitative test results (i.e. Positive or Negative for HSV1, HSV2 or VZV) will be reported.

Limitations of these Assays

The HSV/VZV Detection by Nucleic Acid Amplifcation Assay has been validated on oral, vaginal and skin specimens, but not for cerebrospinal fluid specimens. For HSV PCR on CSF, HSPCRC should be ordered. For HSV PCR on specimens other than oral, vaginal and skin specimens, PCRHSV should be ordered whereas for VZV PCR, VZPCR should be ordered. Both PCRHSV and VZPCR are send-out tests.

Methodology

The Solana HSV 1+2/ VZV assay is an FDA-approved isothermal amplification assay that detects and differentiates HSV1, HSV2 and VZV. Clinical studies, performed at the Cleveland Clinic (manuscript in preparation), have demonstrated a 94.7% sensitivity and 100% specificity for the detection of HSV with this assay. This was superior assay formerly employed (i.e. HSV ELVIS Test System), which had a sensitivity and specificity of 71.1% and 93.2%, respectively. Similarly, the detection of VZV with Solana was superior to direct immunofluorescence (DFA). The sensitivity/ specificity of the Solana assay for the detection of VZV in this study was 95.3%/100%, whereas for DFA these were 71.4%/100%, respectively.

References

1. Faron M, Mashock M, Connolly J, Ledeboer N, Buchan B. Evaluation of the Solana HSV 1+2 assay for simultaneous detection of herpes simplex virus 1 and 2, and varicella zoster virus from cutaneous lesions. Session P091; P1894. 27th ECCMID. Vienna, Austria. 22-25 April 2017.

2. Granato PA, Degillo MA, Wilson EM. The unexpected detection of varicella zoster in genital specimens using the Lyra™ Direct HSV1+2/VZV Assay. *J Clin Virol* 2016; Nov;84:87-89. doi: 10.1016/j.jcv.2016.10.007. Epub 2016 Oct 11.

3. Huppert JS, Batteiger BE, et al. Use of an Immunochromatographic Assay for rapid Detection of *Trichomonas vaginalis* in Vaginal Specimens. *Journal of Clinical Microbiology*. 2005; 684-687.

4. Solana HSV 1+2/VZV Assay product information and package insert, Quidel, San Diego, CA 92130.

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Test Overview

Test Name	HSV 1 & 2/ VZV Amplification-Herpes Simplex Virus and Varicella-Zoster Virus, Molecular Detection
Ordering Mnemonic	HSVVZV
Methodology	Probe Amplification
Reference Range	Negative
Specimen Collection	Swab in Universal Transport Media. Only swabs collected from active cutaneous lesions (vesicles of any skin site) and mucocutaneous lesions are acceptable and include the following specimen sources: genital (penis or vaginal/cervical), skin, nares, ocular and oral lesions.
Stability	Ambient stability= 48 hours Frozen stability= 7 days Refrigerated stability= 7 days
CPT Code2	87529 (Qty 2) and 87798

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