Diagnosis of Disseminated HSV Infection Using Plasma Samples on the ARIES Sample-to-Answer HSV 1&2 PCR Assay

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Introduction

Two of the common human pathogens that cause infections in neonates, children and adults are HSV1 and HSV2. These viruses can establish latency after the primary infection, and can cause re-occurring lesions, and can lead to severe disease in immunocompromised patients. The ARIES system has the ability to execute all the necessary steps for the nucleic acid amplification and be completed in just 2 hours. This study examined the ability of ARIES HSV 1&2 assay to detect virus in plasma samples.

Methods

Twenty positive plasma samples and 23 negative plasma samples were initially tested by Quantitative Real-time PCR by a reference lab and were later compared with ARIES HSV 1&2 assay. Limits of detection, precision, specificity and interference studies were performed in plasma matrix.

Results

Clinical Sample Comparison

<table>
<thead>
<tr>
<th>Plasma</th>
<th>Reference Lab Assay (PCR)</th>
<th>Aries Result</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Positive</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>1</td>
<td>21</td>
</tr>
</tbody>
</table>

Accuracy 97.5%, Sensitivity 95% Specificity 100%

Conclusions

- The ARIES HSV 1&2 assay can be adapted to plasma samples for detection of HSV viremia.
- The assay has high sensitivity and rapid ease of use, and can provide for detection for diagnosis of HSV viremia in immunocompromised patients.
- Assay is qualitative, reflex testing by quantitative PCR may be necessary.