High sensitivity of HLA-B*5701 in Whites and Blacks in immunologically-confirmed cases of abacavir hypersensitivity (ABC HSR)
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Objectives: HLA-B*5701 is highly associated with ABC HSR in Whites. However, variable sensitivities are reported across studies and races where clinical data alone defined ABC HSR. Because accurate identification of phenotype is critical for determining sensitivity, this study estimates the sensitivity of HLA-B*5701 in Whites and Blacks using skin patch testing (SPT) to supplement HSR diagnosis.

Methods: Subjects who had clinically-suspected ABC HSR were retrospectively identified and then tested for HLA-B*5701 and underwent ABC SPT (Study ABC107442, clinicaltrials.gov identifier: NCT00373945). Cases were defined as (1) All ABC HSR regardless of SPT results and (2) ABC HSR with a positive SPT result. Controls were subjects who tolerated ABC for ≥12 weeks without HSR.

Results:

<table>
<thead>
<tr>
<th>HLA-B*5701 results available, N</th>
<th>White SPT+ HSR</th>
<th>White All HSR1</th>
<th>White controls</th>
<th>Black SPT+ HSR</th>
<th>Black All HSR2</th>
<th>Black controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLA-B*5701+, n</td>
<td>42</td>
<td>127</td>
<td>202</td>
<td>5</td>
<td>48</td>
<td>206</td>
</tr>
<tr>
<td>HLA-B*5701-, n</td>
<td>0</td>
<td>71</td>
<td>194</td>
<td>0</td>
<td>38</td>
<td>204</td>
</tr>
</tbody>
</table>

Sensitivity (95% CI) 1.0 (0.92, 1.0) 0.44 (0.35, 0.53) - 1.0 (0.48, 1.0) 0.21 (0.10, 0.35) -
Specificity (95% CI) 0.96 (0.92, 0.98) - 0.99 (0.97, 1.00)

1Includes SPT+ and SPT- cases (3 had no SPT result). Among 82 SPT- cases, 14 were HLA-B*5701+.
2Includes SPT+ and SPT- cases. Among 43 SPT- cases, 5 were HLA-B*5701+.

Conclusions: In these preliminary results, the sensitivity of HLA-B*5701 for SPT+ HSR is 100% in both Whites and Blacks. The sensitivity of HLA-B*5701 was reduced when HSR was defined by clinical diagnosis alone. These data suggest that prospective HLA-B*5701 screening may reduce ABC HSR rates in Whites and Blacks. Not all HLA-B*5701+ cases were SPT+. HLA-B*5701 screening may augment clinical management of HSR but must never substitute for clinical vigilance. To complement these results, a large prospective study (PREDICT-1) evaluating the clinical utility of HLA-B*5701 screening on ABC HSR has been completed.