BACKGROUND

- Cutaneous melanoma staging is based on primary tumor characteristics, sentinel lymph node (SLN) status, and metastasis.1,2
- The 31-gene expression profile (31-GEP) prognostic test for cutaneous melanoma uses the expression of 28 discriminating genes and 3 control genes from the primary tumor to classify a patient’s recurrence risk as low (Class 1: Class 1A lowest) or high (Class 2: Class 2B highest) (Figure 1) and has been validated in multiple prospective and retrospective studies,3-15 and may improve risk stratification in both SLN negative and positive populations.
- We hypothesized that the 31-GEP could add prognostic value and clinical impact in a single high-volume melanoma surgery center.

RESULTS

Figure 1. 31-GEP stratifies patients by recurrence risk.

Figure 2. Three-year RFS in patients with stage I-III cutaneous melanoma. Patients with a 31-GEP Class 1 result have significantly higher RFS and DMFS than patients with a Class 2 result.

METHODS

- Two hundred and two patients with stage I-III melanoma from a single surgical oncology practice were enrolled in an IRB-approved retrospective study.
- Outcomes were assessed to determine 3-year recurrence-free (RFS) and distant metastasis-free survival (DMFS) using Kaplan-Meier and Cox regression analysis.

REFERENCES, FUNDING & DISCLOSURES


CONCLUSIONS

- The 31-GEP accurately and significantly stratified 3-year RFS and DMFS for patients managed at a single surgical oncology center.
- A Class 2 result was a significant predictor of 3-year RFS and DMFS in univariate and multivariable analysis.
- The 31-GEP was a stronger predictor of RFS and DMFS than AJCC 8th ed.
- Improved risk stratification may lead to improved healthcare resource allocation.

Table 1. Multivariable Cox regression analysis for 5-year outcomes

<table>
<thead>
<tr>
<th>RFS (3-yr)</th>
<th>Univariate</th>
<th>Multivariable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature</td>
<td>HR (95% CI)</td>
<td>P-value</td>
</tr>
<tr>
<td>AJCC 8th ed.</td>
<td></td>
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<tr>
<td>High-risk*</td>
<td>3.6 (1.6-8.1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>GEP Class 2</td>
<td>6.2 (2.3-16.3)</td>
<td>&lt;.001</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>DMFS (3-yr)</th>
<th>Univariate</th>
<th>Multivariable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature</td>
<td>HR (95% CI)</td>
<td>P-value</td>
</tr>
<tr>
<td>AJCC 8th ed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-risk*</td>
<td>7.0 (2.0-25.1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>GEP Class 2</td>
<td>18.5 (4.1-141.3)</td>
<td>&lt;.001</td>
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*High-risk: AJCC stage IIB-III vs. stage I-IIA.