Implications of a 31-gene expression profile (31-GEP) test for cutaneous melanoma (CM) on AJCC-based risk assessment and adjuvant therapy trial design

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BACKGROUND

• The past decade has delivered significant advancements in the treatment of cutaneous melanoma (CM), including in the adjuvant setting1-2. While targeted and immunotherapies provide clear benefits to a subset of CM patients, they are not without associated toxicities. As options in the adjuvant setting expand for CM patients, accurate assessment of risk of relapse is increasingly important, especially when considering patients with earlier stages of disease (Stage IIa-IIia).

• A 31-gene expression profile (31-GEP) test has been developed and validated in retrospective and prospective studies3-13 to predict 5-year metastatic risk from primary CM tumor tissue with a high degree of technical reliability.12

• The 31-GEP test classifies CM as Class 1A (kWes risk), Class 1B (low risk), Class 2A (increased risk), or Class 2B (highest risk).3,4

• This prognostic information is used to inform patient management decisions, including frequency of follow-up and surveillance imaging, referrals, sentinel lymph node biopsy guidance, and consideration of adjuvant therapy.2,12-17

OBJECTIVE

To determine the applicability of a 31-GEP test result in adjuvant therapy trial design for Stage IIa-IIia patients.

RESULTS

Table 1. Cohort demographics of Stage II-aIIIa cases (n=173)

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>64 (20–89)</td>
</tr>
<tr>
<td>Follow up (years)</td>
<td>Median for cases (range) 5.6 (0.1–15.4) Median for non-recurrent cases (range) 7.1 (0.5–15.4)</td>
</tr>
<tr>
<td>Breslow Thickness (mm)</td>
<td>Median (range) 2.55 (0.05-15)</td>
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<tr>
<td>Ulceration present</td>
<td>n=74 43%</td>
</tr>
<tr>
<td>Mictic rate ≥1mm²</td>
<td>Stage (AJCC)</td>
</tr>
<tr>
<td>IA</td>
<td>n=71 41%</td>
</tr>
<tr>
<td>IB</td>
<td>n=44 26%</td>
</tr>
<tr>
<td>IIC</td>
<td>n=23 13%</td>
</tr>
<tr>
<td>IIIA</td>
<td>n=55 20%</td>
</tr>
</tbody>
</table>

Clinical data collected 2017 to present demonstrate that patients with Stage II or III disease at the time of 31-GEP testing 52% were Class 2B.

Figure 2. Kaplan-Meier analysis of outcomes by GEP Class in Stage IIa-IIia cases

Figure 3. Adjuvant therapy clinical trial design with and without incorporation of 31-GEP testing in enrollment criteria

Table 3. Implications for sample size, time to completion, and overall costs changes for adjuvant trials with and without 31-GEP testing inclusion criteria

CONCLUSIONS

• The 31-GEP can identify Stage II-IIa patients who are at higher risk for recurrence and metastasis and thus may be appropriate candidates for adjuvant therapy consideration, including during future trial design with these earlier stage patients.

• Use of a Class 2B 31-GEP result as enrollment criteria for adjuvant therapy trial design could reduce patient numbers (~36%) and associated costs, while achieving similar to detect a desired hazard ratio.

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REFERENCES