Performance of PD-L1 immunohistochemistry assays in unresectable locally advanced or metastatic triple-negative breast cancer: post hoc analysis of IMpassion130

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PD-L1 IHC assays: prevalence and analytical concordance

NPA, negative percentage agreement; OPA, overall percentage agreement; PPA, positive percentage agreement.

a > 97% of SP142+ samples included in 22C3+ or SP263+ samples. b Compared with 41% in ITT (Schmid, New Engl J Med 2018).

≥ 90% OPA, PPA and NPA required for analytical concordance.

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Clinical outcomes in PD-L1+ populations per SP142 (IC 1%), 22C3 (CPS 1) and SP263 (IC 1%)

<table>
<thead>
<tr>
<th>Population</th>
<th>PFS</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP142 IC ≥ 1%: 46%</td>
<td><img src="image" alt="Graph SP142" /></td>
<td><img src="image" alt="Graph SP142" /></td>
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<tr>
<td>(285/614)</td>
<td><img src="image" alt="Graph SP142" /></td>
<td><img src="image" alt="Graph SP142" /></td>
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<tr>
<td>22C3 CPS ≥ 1: 81%</td>
<td><img src="image" alt="Graph 22C3" /></td>
<td><img src="image" alt="Graph 22C3" /></td>
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<tr>
<td>(497/614)</td>
<td><img src="image" alt="Graph 22C3" /></td>
<td><img src="image" alt="Graph 22C3" /></td>
</tr>
<tr>
<td>SP263 IC ≥ 1%: 75%</td>
<td><img src="image" alt="Graph SP263" /></td>
<td><img src="image" alt="Graph SP263" /></td>
</tr>
<tr>
<td>(460/614)</td>
<td><img src="image" alt="Graph SP263" /></td>
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HR adjusted for prior taxanes, presence of liver metastases, age and ECOG PS.
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Clinical outcomes in BEP subpopulations defined by SP142 (IC 1%) and 22C3 (CPS 1)

Double positive: SP142 IC ≥ 1%, 22C3 CPS ≥ 1; single positive: SP142 IC < 1%, 22C3 CPS ≥ 1; double negative: SP142 IC < 1%, 22C3 CPS ≤ 1. HR adjusted for prior taxanes, presence of liver metastases, age and ECOG PS.

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<table>
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<tr>
<th>Population</th>
<th>PFS</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP142+ 22C3+ (45%; 279/614)</td>
<td><img src="chart1.png" alt="PFS Chart" /></td>
<td><img src="chart2.png" alt="OS Chart" /></td>
</tr>
<tr>
<td>SP142- 22C3+ (36%; 218/614)</td>
<td><img src="chart3.png" alt="PFS Chart" /></td>
<td><img src="chart4.png" alt="OS Chart" /></td>
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<tr>
<td>SP142- 22C3- (18%; 111/614)</td>
<td><img src="chart5.png" alt="PFS Chart" /></td>
<td><img src="chart6.png" alt="OS Chart" /></td>
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</tbody>
</table>
Clinical outcomes in BEP subpopulations defined by SP142 (IC 1%) and SP263 (IC 1%)

Double positive: SP142 IC ≥ 1%, SP263 IC ≥ 1%; single positive: SP142 IC < 1%, SP263 IC ≥ 1%; double negative: SP142 IC < 1%, SP263 IC < 1%. HR adjusted for prior taxanes, presence of liver metastases, age and ECOG PS.

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IMpassion130 PD-L1 IHC

Double positive: SP142+ SP263+ (45%; 278/614)

Double negative: SP142- SP263- (24%; 147/614)

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Conclusions

In this post hoc exploratory biomarker sub-study of the IMpassion130 trial

- Clinical activity was observed in the SP142 PD-L1 IC+ subgroup, regardless of whether the sample was from the primary tumour or metastatic tissue

- With overall percentage agreements of 64% (22C3) and 69% (SP263), the analytical concordance was subpar (< 90%) and the assays are not equivalent
  - 22C3 (CPS ≥ 1) and SP263 (IC ≥ 1%) PD-L1 assays identified a larger patient population of which SP142+ (IC ≥ 1%) is a subgroup

- The clinical benefit in 22C3+ and SP263+ subgroups was driven by the SP142+ subgroup
  - The SP142 assay identified patients with the smallest HR point estimates and longest median PFS and OS from atezolizumab + nab-paclitaxel

- The SP142 assay at IC ≥1% cutoff is the approved diagnostic test used to identify patients with mTNBC most likely to benefit from the addition of atezolizumab to nab-paclitaxel

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