INTRODUCTION AND OBJECTIVES

Breast Cancer Multigene Signatures (BCMS) are available to profile early breast cancer (eBC) that, according to current evidence, can provide reliable information including the risk of recurrence. However, knowledge regarding their use and perceived value in clinical practice is scarce.

In this context, the PROCURE Project aimed to develop a European consensus on the utility of BCMS in treatment decision-making based on the opinion of panel of breast cancer (BC) experts. Here we present the main results on the use of BCMS in routine clinical practice from the PROCURE Project.

METHODS

A scientific committee consisting of 8 experts in BC developed a Delphi questionnaire that was administered twice to BC expert clinicians, including oncologists, pathologists, and surgeons across Europe with expertise in the use of BCMS.

The questionnaire included 5 sections:
1) Panelists’ profile and experience with BCMS.
2) Current clinical practice in eBC and use of BCMS.
3) Panelists’ opinion on the utility of BCMS in eBC according to patient profiles.
4) Agreement with a set of recommendations on the use of BCMS in clinical practice and
5) Identification of unmet needs and future applications of BCMS.

The 2nd wave only those items where a consensus was not reached were asked again. 70% agreement was pre-defined as the threshold for consensus. Richardson was asked to select options.

RESULTS

133 BC specialists from 11 European countries completed both Delphi waves.

Panelists’ profile

- Most experts worked in public centers (66.2%), specifically in teaching hospitals (86.5%) mainly as consultants (62.4%) or heads of departments (34.6%).
- Most experts have been using BCMS for more than 5 years. The remaining 6.8% do not use BCMS. However, they are not available in their hospitals although all of them will use BCMS if available.
- Regarding their clinical practice, international (40.6%) and national (39.9%) guidelines along with the multidisciplinary tumour board (38.4%) were considered the most important factors for making decisions regarding adjuvant treatment.
- The questionnaire included 5 sections: 1) Panelists’ profile and experience with BCMS, 2) Current clinical practice in eBC and use of BCMS, 3) Panelists’ opinion on the utility of BCMS in eBC according to patient profiles, 4) Agreement with a set of recommendations on the use of BCMS in clinical practice and 5) Identification of unmet needs and future applications of BCMS.

When guidelines are available, the nodal status (92.0%), the HER2 negative by IHC/FISH/CISH (87.6%), and the tumour size (60%) were the most important criteria defined in those guidelines for the use of BCMS.

Current clinical practice and use of BCMS across European countries

- 93.2% of the panelists are familiar with the use of BCMS and used them routinely (66.2%) or in selected cases (27.1%). Also, 73.4% of the panelists have been using BCMS for more than 5 years. The remaining 6.8% do not use BCMS because they are not available in their hospitals although all of them will use BCMS if available.

- Most experts worked in public centers (66.2%), specifically in teaching hospitals (86.5%) mainly as consultants (62.4%) or heads of departments (34.6%).

- Most experts have been using BCMS for more than 5 years. The remaining 6.8% do not use BCMS. However, they are not available in their hospitals although all of them will use BCMS if available.

- Regarding their clinical practice, international (40.6%) and national (39.9%) guidelines along with the multidisciplinary tumour board (38.4%) were considered the most important factors for making decisions regarding adjuvant treatment (Fig. 1). This is in line with the fact that 85.0% of the panelists reported the existence of hospital/country policies to regulate the use of BCMS.

- When guidelines are available, the nodal status (92.0%), the HER2 negative by IHC/FISH/CISH (87.6%), and the tumour size (77.8%) are the most important criteria defined in those guidelines for the use of BCMS.

- When guidelines are not available, the clinical practice, international (40.6%) and national (39.9%) guidelines along with the multidisciplinary tumour board (38.4%) were considered the most important factors for making decisions regarding adjuvant treatment (Fig. 1). This is in line with the fact that 85.0% of the panelists reported the existence of hospital/country policies to regulate the use of BCMS.

- Finally, to define prognosis and treatment needs, BCMS were used routinely or in selected patients by more than 60% of the participants, regardless of the patient’s gender or age, with similar results when asked by menopausal status; lack of lymph node involvement (97.0%) or involvement of 1–3 lymph nodes (88.0%); HR positive status (98.5%); and HER2 negative status (96.2%) (Fig. 3).

CONCLUSIONS

European panelists that participated in the PROCURE Project had an extensive experience in the management of BC patients and a high degree of expertise with BCMS. However, the fact that the main reason for using BCMS was to predict chemotherapy benefits along with the fact that some experts reported the use of BCMS in 4 positive lymph node, triple-negative, or HER2+ patients, suggests that there is a misconception among experts on the predictive ability on chemotherapy of the currently available BCMS and reinforce the idea that more guidance and education in this field is required to properly use and interpret BCMS results.

### Factors taken into account for adjuvant treatment decision

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not important (1–2)</th>
<th>Somewhat important (3–4)</th>
<th>Important (5–6)</th>
<th>Most important (7–9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>International guidelines (IHC/FISH/CISH)</td>
<td>16%</td>
<td>39%</td>
<td>39%</td>
<td>6%</td>
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<tr>
<td>National guidelines</td>
<td>19%</td>
<td>37%</td>
<td>37%</td>
<td>7%</td>
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<tr>
<td>Multidisciplinary tumour board</td>
<td>26%</td>
<td>36%</td>
<td>32%</td>
<td>6%</td>
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<tr>
<td>My own experience</td>
<td>29%</td>
<td>35%</td>
<td>28%</td>
<td>8%</td>
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<tr>
<td>Hospital country guidelines</td>
<td>18%</td>
<td>43%</td>
<td>39%</td>
<td>1%</td>
</tr>
<tr>
<td>My colleagues’ advice</td>
<td>2%</td>
<td>45%</td>
<td>46%</td>
<td>7%</td>
</tr>
</tbody>
</table>

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