Screening With Serum Galactomannan Might Be Associated With Better Outcome Than Symptom-Triggered Galactomannan Testing in Allogeneic HSCT Recipients With Invasive Aspergillosis

To the Editor—We read with interest the article by Fisher and colleagues about use of the galactomannan index (GMI) in hematopoietic stem cell transplant (HSCT) recipients with invasive aspergillosis (IA) [1]. The authors reported that the serum GM level at the time of IA diagnosis was significantly associated with the risk of overall and respiratory mortality.

In their cohort, GM testing was performed upon clinical suspicion of IA; at our center, GM screening has been used even before clinical suspicion. Briefly, patients are tested at least twice weekly during the first 100 days after transplant or later in case of graft versus host
disease; after day +100, GM screening is performed at every visit at a minimum.

Using the same statistical approach, we reviewed our experience in order to determine if the association between GMI and overall survival is also present when the GM screening strategy is used.

From 2007 to 2012, 57 cases of probable IA (defined according to 2008 European Organization for Research and Treatment of Cancer/Invasive Fungal Infections Cooperative Group and the National Institute of Allergy and Infectious Diseases Mycoses Study Group criteria) were diagnosed among 439 adult allogeneic HSCT recipients a median of 15 days after transplant [2]. In 50 (88%) patients, IA was diagnosed with a positive serum galactomannan, with a median GMI of 1.03 (range, 0.501–8.94).

Considering only subjects with positive serum galactomannan, the GMI values in our 50 patients were significantly lower than those reported for the 53 patients in the study by Fisher and colleagues. In our cohort, 48% of samples were in the GMI range of 0.5–0.99, 36% in the 1.0–1.49 range, 4% in the 1.5–1.99 range, and 12% ≥2. In the cohort of Fisher and colleagues, the respective distribution was as follows: 53%, 11%, 17%, and 19% (P = .009, Pearson χ², 2-sided).

However, even in the presence of lower GMI values, the association between serum GM and overall mortality was still evident in our cohort. No other baseline variables, such as sex, age, type of underlying disease and its phase, type of donor, or myeloablative condition, resulted in a significant association with overall survival or GMI, thus unadjusted HR are reported (Table 1).

In summary, higher serum GM was associated with higher overall mortality in both cohorts of allogeneic HSCT recipients. The GM screening strategy applied in our cohort resulted in the diagnosis of IA at GMI values lower than those reported by Fisher and colleagues. Previously, Maertens and colleagues reported that serum GM positivity could precede the development of clinical signs and symptoms of IA [3]. As higher serum GMI levels may represent increased fungal burden, the use of GM surveillance should lead to earlier diagnosis of IA in high-risk patients. Direct comparison of overall mortality in the 2 centers is cumbersome and requires adjusting for all the existing differences. However, our results suggest that in allogeneic HSCT recipients, a GM screening strategy could result in lower mortality than symptoms-triggered GM testing.

**Note**

**Potential conflicts of interest.** All authors: No reported conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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**Table 1.** Percent Values and Hazard Ratio Estimates With 95% Confidence Interval for All-cause Mortality by Serum Galactomannan Index at 42 and 180 Days After the Diagnosis of Invasive Aspergillosis

<table>
<thead>
<tr>
<th>GMI</th>
<th>42-d Overall Mortality</th>
<th>180-d Overall Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>HR (95% CI)</td>
</tr>
<tr>
<td>&lt;0.5</td>
<td>1/7 (14.3)</td>
<td>1.0</td>
</tr>
<tr>
<td>0.5–0.99</td>
<td>8/24 (33.3)</td>
<td>2.76 (34–22.09)</td>
</tr>
<tr>
<td>1.0–1.99</td>
<td>10/20 (50)</td>
<td>4.97 (.64–38.91)</td>
</tr>
<tr>
<td>≥2.0</td>
<td>4/6 (66.7)</td>
<td>6.98 (.78–62.82)</td>
</tr>
</tbody>
</table>

Abbreviations: CI, confidence interval; GMI, galactomannan index; HR, hazard ratio.

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**References**


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