Data were collected from a daily updated database of all patients with CRBSIs, which is part of a continuous, laboratory-based, prospective surveillance programme for hospital-acquired bacteremia in our general hospital. All adults with CRBSIs are diagnosed by conventional criteria according to IDSA guidelines and are evaluated, treated and followed-up by infectious disease specialists.

The main results [episodes of CRBSIs, episodes of CRBSIs due to Gram-negative bacteria (GN-CRBSIs), percentage of GN-CRBSIs relative to overall CRBSI cases and incidence rates] are shown in Table 1.

A significant increase over time in the number of GN-CRBSIs in relation to the total CRBSI cases occurred exclusively in our critical care units, whereas the percentage has remained stable (even showing a slight decrease in 2010) in the conventional wards. Analysis of the incidence rates yielded a progressive decrease in CRBSIs (from 0.54 to 0.31 episodes/1000 patient-days) that was more evident in critical care units (from 3.17 to 1.12 episodes/1000 patient-days) than in the remaining hospital wards.

These epidemiological findings, which differ from those reported by Marcos et al.,1 can be explained by implementation of a bundled strategy for CRBSI prevention in our hospital, starting in 2008. This strategy consisted of multifaceted interventional and educational programmes for all involved staff to improve compliance with evidence-based recommended practices regarding the insertion, maintenance and removal of catheters.4 This approach has resulted in a significant decrease in the overall incidence of CRBSIs, but not of GN-CRBSIs. Similar results have been reported by other authors, who observed an important decrease in the percentages of Gram-positive and fungal CRBSIs with implementation of a multifaceted strategy.5

In conclusion, knowledge of the epidemiological trends in CRBSIs in our setting has prompted physicians to continue with the current recommendations for empirical treatment. Gram-negative coverage is mainly considered for critically ill patients, which is precisely the patient profile in critical care units, the only wards where the percentage of GN-CRBSIs is increasing. Our experience illustrates the importance of having local data to enable adaptation of the general recommendations proposed by global agencies.

Transparency declarations
None to declare.

References
1 Marcos M, Soriano A, Iñurrieta A et al. Changing epidemiology of central venous catheter-related bloodstream infections: increasing

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Changing epidemiology of central venous catheter-related bloodstream infections: increasing prevalence of Gram-negative pathogens—authors’ response

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Keywords: CRBSIs, Gram-negative bacteria, antimicrobial therapy

Sir,

We have read with interest the letter from Sorde et al.,1 where two aspects of our previous study2 are discussed: the need to implement a bundle of measures to reduce the incidence of catheter-related bacteraemia (CRB); and the rationale to start broad-spectrum empirical therapy including coverage for Gram-negative bacteria when CRB is suspected. We totally agree concerning the importance of implementing a bundle of measures to reduce the risk of CRB. In our hospital the incidence of CRB has been monitored since 1991, and our rate in 2007–08 was 0.31 episodes/1000 patient-days,3 which is lower than those reported by Sorde et al.1 in 2007 and 2008 (0.54 and 0.55, respectively). Their implementation of a bundle of measures led to a significant decrease in the incidence of CRB in 2010 (0.31). Their data suggest, however, that preventive measures were capable of reducing mainly Gram-positive CRB, leading to an

Table 1. Epidemiological trends in CRBSIs

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CRBSIs, n/1000 patient-days</strong></td>
<td>64/3.17</td>
<td>53/0.31</td>
<td>46/0.39</td>
<td>46/0.54</td>
</tr>
<tr>
<td><strong>Incidence</strong></td>
<td>180/0.89</td>
<td>170/0.84</td>
<td>160/0.90</td>
<td>150/1.06</td>
</tr>
<tr>
<td><strong>GN-CRBSIs, n/1000 patient-days</strong></td>
<td>24/1.22</td>
<td>22/0.56</td>
<td>22/0.50</td>
<td>21/0.44</td>
</tr>
<tr>
<td><strong>Incidence</strong></td>
<td>18/0.09</td>
<td>16/0.09</td>
<td>16/0.08</td>
<td>16/0.07</td>
</tr>
</tbody>
</table>

Critical care units

Surgical wards

Medical wards

Overall

a Incidence rate: episodes/1000 patient-days.