Letter to the Editor

Treatment duration of enterococcal intravascular catheter-related infections

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To the editor,

Enterococcal bloodstream infection (BSI) is associated with high morbidity and mortality. Interestingly, enterococcal BSI associated with central-line (CLABSI) or intravascular devices (catheter-related BSI, CRBSI) has shown an increasing incidence or proportion [1,2]. We read with great interest the review of Rosselli Del Turco et al. in which the authors recommended 2-4 weeks of treatment (Table 1) for enterococcal BSI related to endovascular devices (central venous catheters (CVCs) including haemodialysis catheters, peripherally inserted central venous catheters (PICCs), or midline catheters) [3].

To our knowledge, no high-quality study has specifically addressed the question of duration of antimicrobial therapy for enterococcal intravascular-catheter-related infections. We performed a systematic search in MEDLINE on 10th November 2020 (search terms algorithm: “(Catheter-Related Infections[MeSH] AND (intravascular OR blood) OR CLABSI OR CRBSI OR (catheter-related bloodstream infection) OR (central-line associated bloodstream infection) AND Enterococcus[MeSH] AND (AntiBacterial Agents [MeSH])” and 16 studies were assessed for eligibility. One small, retrospective study evaluated the duration of antimicrobial therapy using univariate analysis in 61 episodes of catheter-related enterococcal BSI [4]. In that study, duration of antimicrobial therapy did not have a significant impact on cure, treatment failure, or relapse of infection. Moreover, another retrospective study including 111 CLABSI episodes did not show a statistically significant association between antibiotic treatment duration and mortality in the univariate analysis [5].

Thus, to date, the duration of antimicrobial therapy in enterococcal intravascular catheter infections is based on expert opinion. In general, national and international guidelines or expert statements (summarized in Table 1) recommend a short course (5-14 days) of antibiotics for catheter-related enterococcal infections, especially in the context of catheter removal [5]. Nevertheless, further high-quality studies are needed to investigate this unresolved issue. In the interim, we would prefer to discourage clinicians from administering prolonged antibiotic therapy (>14 days) in the context of intravascular catheter enterococcal
infections without evidence of endocarditis or metastatic infection. Last, we remind readers that this is the World Antimicrobial Awareness Week (18th–24th November) and reducing prolonged courses of antibiotic therapy is an important step towards antimicrobial stewardship.

Author contributions

SM and NB wrote the first version of this letter. SM performed the systematic review. All authors approved the final version of the letter.

Transparency declaration

The authors have disclosed that they do not have any conflicts of interest. Dr Timsit has received fees for lectures to MSD, Pfizer, 3M and Biomerieux, research grants from Astellas, 3M, MSD, and Pfizer, and he has participated in advisory boards of Bayer Pharma, Nabriva, 3M, MSD, and Pfizer. Leonard Mermel has served as a consultant for Citius Pharmaceuticals, Marvao Medical, Leonard-Meron Biosciences, Destiny Pharma, and Nobio. Dr Buetti is receiving a Mobility grant from the Swiss National Science Foundation (grant number: P4P4PM_194449). The fellowship of Dr Buetti is supported by the Swiss National Science Foundation (grant number: P4P4PM_194449).

Table 1
Summary of recommendations and expert opinions

<table>
<thead>
<tr>
<th>First author</th>
<th>Journal</th>
<th>Year</th>
<th>Setting</th>
<th>Recommended treatment duration for enterococcal CRBSI/CLABSI</th>
<th>When prolonged therapy?</th>
</tr>
</thead>
<tbody>
<tr>
<td>German guidelines</td>
<td>Boll B</td>
<td>2020</td>
<td>Oncology</td>
<td>5–7 days after defervescence</td>
<td>Complications (endocarditis, osteomyelitis)</td>
</tr>
<tr>
<td>French recommendations</td>
<td>Timsit JF, Buetti N</td>
<td>2020</td>
<td>ICU</td>
<td>7 days</td>
<td>Remote complications Persistent CRBSI, complicated courses (i.e. another vascular line infection, metastatic abscess, septic thrombophlebitis, or endocarditis)</td>
</tr>
<tr>
<td>Expert statement</td>
<td></td>
<td>2019</td>
<td>ICU</td>
<td>(5–7) days</td>
<td></td>
</tr>
<tr>
<td>Spanish recommendations</td>
<td></td>
<td>2018</td>
<td>ICU</td>
<td>7–14 days</td>
<td>Not specified Persistent bacteraemia, complications related to bacteraemia (i.e. suppurative thrombophlebitis, endocarditis, osteomyelitis, metastatic infection)</td>
</tr>
<tr>
<td>International expert</td>
<td></td>
<td>2018</td>
<td>ICU</td>
<td>7–14 days</td>
<td>Complicated CRBSI (i.e. suppurative thrombophlebitis, persistent bacteraemia, osteomyelitis, infective endocarditis)</td>
</tr>
<tr>
<td>Expert statement</td>
<td></td>
<td>2018</td>
<td>ICU</td>
<td>7–14 days</td>
<td></td>
</tr>
<tr>
<td>IDSA guidelines (US)</td>
<td>Mermel L</td>
<td>2009</td>
<td>All catheters</td>
<td>7–14 days</td>
<td>Complicated CRBSI (i.e. suppurative thrombophlebitis, osteomyelitis, infective endocarditis)</td>
</tr>
</tbody>
</table>

ICU, intensive care unit; CRBSI, catheter-related bloodstream infection; CLABSI, central-line-associated bloodstream infection; IDSA, Infectious Diseases Society of America; US, United states.

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References