

## EDITORIAL

## Patients with infections in the emergency department: What should we look for?

### *Pacientes infectados en el servicio de urgencias: ¿qué debemos detectar?*

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In the increasingly numerous research studies on scores, markers and models trying to predict outcomes in infected patients, Julián-Jiménez et al. report the results of the RMPB-Toledo model to predict bacteremia in those patients with a possible infection in the emergency department<sup>1</sup>. What does this study tell us?

The authors created an adequate score that includes both clinical variables (temperature and respiratory rate) and biological variables (leukocyte count and procalcitonin) associated with increased risk of bacterial infection - although this is not particularly discriminating<sup>2-6</sup>. Adding the Charlson comorbidity index is a potentially challenging idea. However, adding a variable that reflects the patient's overall condition is of utmost importance and can be seen in the final model. With this compounded model, the authors obtain an area under the curve of the receiver operating characteristic (AUC ROC) of 0.946 [0.92-0.97] to predict an actual case of bacteremia; an excellent result.

Previous studies, which have tested and evaluated diagnostic and prognostic features of biomarkers, early warnings or simple direct scores have omitted an important parameter: the patient itself<sup>7-11</sup>. Different implications arise when referring a young healthy patient or an older patient with comorbidities. A recent report by Seymour et al. suggests, in the same line, that different patient phenotypes should be considered in the management of sepsis. Comorbidity<sup>12</sup> must be taken into account.

On the other hand, what this article does not point out is the clinical added value of such a predictive model, even if it works well. We may ask what is the interest in predicting the risk of bacteremia when, as emergency physicians, we should be more interested in predicting: a) the risk of critical illness requiring admission to intensive care and b) the risk of bacterial infection requiring antibiotic treatment.

The first risk has been recently documented and it seems that some simple clinical parameters could help emergency physicians to detect early the population with the highest risk of deterioration<sup>10,11</sup>. The second has

been less well studied and promising results from different trials on PCT-guided therapy have been discarded<sup>13,14</sup>. This step can be complex and full of surprises<sup>1,15</sup>.

**Conflicting interests:** The author declares no conflict of interest in relation to this article.

**Financing:** The author declares the non-existence of funding in relation to this article.

**Ethical responsibilities:** All authors have confirmed the maintenance of confidentiality and respect for patients' rights in the author's responsibilities document, publication agreement, and assignment of rights to EMERGENCIAS.

**Article commissioned and reviewed internally by the Editorial Committee.**

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**Contribution of the author:** The author has confirmed his authorship in the document of responsibilities of the author, agreement of publication and cession of rights to EMERGENCIAS.

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**Article information:** Received: 27-12-2019. Accepted: 28-12-2019. Online: 21-1-2020.

**Editor in charge:** Óscar Miró.

**Note from the editor:** The article was submitted in English by the author and was evaluated and accepted in English. This version has been translated into Spanish by the EMERGENCIAS editorial team.

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