



## EDITORIAL

# Severe sepsis and septic shock: Everything done, everything to be done<sup>☆</sup>

## Sepsis grave y shock séptico: Todo hecho, todo por hacer

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In the last decade severe sepsis and septic shock have been the subject of intense study, and the expanding body of scientific evidence has afforded better and more in-depth understanding of this pathology. A simple PubMed search of these terms shows that in the period between 1001 and 2011, the number of published articles doubled that of the preceding decade. Severe sepsis is characterized by high mortality, particularly when associated to shock. Moreover, several epidemiological studies have reported an increase in the incidence of severe sepsis.<sup>1,2</sup> Please tag and link citations/tables/figures throughout the text accordingly. In Spain, the incidence of severe sepsis is 104 cases per 100,000 inhabitants/year, while the incidence of septic shock is 31 cases per 100,000 inhabitants/year.<sup>3</sup> The Surviving Sepsis Campaign (SSC) was launched in 2002, as an important effort to understand and adequately treat severe sepsis and septic shock. This is an international initiative, sustained by different scientific societies dedicated to critical care throughout the world, with the purpose of reducing mortality attributable to this pathology through the development and implementation of clinical practice guides.<sup>4</sup> One of the most relevant contributions of the SSC has been the “time-dependency” concept, i.e., in the same way as in other acute disease conditions, the lesser the time elapsed from the onset of damage to the adoption of treatment measures, the lesser the incidence of organ dysfunction and thus also of patient mortality. An illustrative way of referring to this would be: “Time is tissue”.<sup>4</sup> Accordingly, the SSC guide includes the recommendation to provide treatment

with the shortest delay possible once the diagnosis has been established.

It is well known that the development of management guides alone does not lead to changes in daily clinical practice.<sup>5</sup> Consequently, phase III of the SSC comprised the development of multimodal continuous education programs to ensure that up to date knowledge is conveniently transferred to the routine care of septic patients. These programs incorporated “bundles” of measures designed to objectively evaluate adherence to the treatment guides.

The Edusepsis study, carried out in 59 Spanish Intensive Care Units (ICUs), demonstrated that the application of an educational program aiming to improve adherence to the SCC guides leads to increased compliance with the treatment “bundles”, and to a decrease in mortality associated to severe sepsis/septic shock.<sup>6</sup> This project also helped the participating ICUs to improve the evaluation of their own clinical practice. An example of this is provided by the Department of Intensive Care Medicine of Donostia Hospital in Guipúzcoa, where the creation of a proprietary registry has allowed the Department to evaluate and improve the management of patients with severe sepsis and septic shock – the results obtained being reflected in the article published in the present issue of *Medicina Intensiva*.<sup>7</sup> Thanks to the work of Azkárate et al., and based on their own objective data rather than on mere impressions, it is possible to identify areas offering opportunities for improvement in the treatment of sepsis and to implement interventions designed to improve the results obtained.

At present, the intensivists of several hospitals are conducting initiatives to improve coordination in the management of sepsis, including for example the introduction of the Sepsis Code, Multidisciplinary Sepsis Units or Rapid Response Teams especially dedicated to sepsis. These initiatives imply

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a change in paradigm in which the intensivist is required to play a role outside the ICU in order to offer early treatment for these patients. In parallel to the efforts launched in each center, in the course of the present year a new intervention has been made in over 100 centers throughout Spain. The ABISS-Edusepsis study evaluates a multiple intervention designed to improve early empirical antibiotic treatment in sepsis with the purpose of reducing mortality.

We believe that only through continuous and coordinated effort will we be able to reduce mortality in septic patients and improve the quality of life of the population. Much has been done, but much also remains to be done.

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