POINT OF VIEW

New definition of sepsis and septic shock: What does it give us?

Nueva definición de sepsis y shock séptico: ¿qué nos ofrece?

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Received 9 March 2016; accepted 29 March 2016
Available online 30 May 2016

A few days ago, new definitions of sepsis and septic shock were launched as a result of a consensus of 19 experts SCCM (Society of Critical Care Medicine) and ESICM (European Society of Intensive Care Medicine). 1

Perhaps the greatest contribution of this expert opinion consensus has been to recognize sepsis as a difficult to characterize syndromic condition, with cellular metabolic disorder as a lead condition along with the development of organ failure. However, as the most important feature, the new definition excludes the concept of SIRS (Systemic Inflammatory Response Syndrome) since this term is being considered of not useful anymore. The authors supported this decision mainly based on a retrospective study conducted in Australia and New Zealand 2 in which it was observed (glass half-empty approach) that 1 out of 8 patients (12.5%) with sepsis and multiorgan failure (MOF) did not have at least 2 SIRS criteria. However, these results (glass half-full approach) could be reinterpreted as 7 out of 8 patients (87.5%) did present positive SIRS criteria.

Furthermore, the authors, in the paper on new sepsis definitions, affirmed that SIRS does not represent a dysregulated systemic response compromising host survival for the diagnosis of sepsis anymore. The concept of SIRS, such as expressed by Bone et al. 3 is a clear one and refers to non-specific inflammatory response of the host to an injury. The theory of “CHAOS” proposed by Bone (Fig. 1) masterfully develops the different interactions between the pro and anti-inflammatory response of the host taking into account a translational view, which has elucidated the different phases or states of patients with sepsis. Moreover, several studies have found a direct association between SIRS severity and clinical progression. Rangel-Frausto et al. 4 showed that mortality significantly increased from 7% to 17% based on the number of SIRS criteria (from two to four respectively). Interestingly, Napolitano et al. 5 observed in trauma patients the relative risk (RR) of mortality increased from 3.46 (interquartile range [IQR = 1.48−8.11], p = 0.004) with a SIRS score = 2−6.88 [1.81−22.8], p = 0.004 for SIRS = 4. In addition, Barie and Hydo 6 reported that the change in SIRS score within the first 24 h of treatment was significantly associated with mortality (Fig. 2).

Moreover, to define sepsis based on organ dysfunction may have serious limitations. The SOFA score was designed to estimate more objectively organ dysfunction associated with sepsis 7 and its use is common in intensive care units (ICUs), but not in other health care settings, 8 where a more
New definition of sepsis and septic shock

As definitions inadequately mediated SIRS concept.

>90 Glasgow defined, it, far large criterion the Mortality rate, % criteria of 20 25 based 9 definitions vs 20 22 altered SIRS score variation (day 2 - day 1) of Sepsis (SIRS). This is something that might be applicable only within the first hours of resuscitation to identify patient’s response but not to define a clinical state. It is true that different recent clinical trials have shown an unexpected low mortality in some patients with septic shock. However, there is a lack of timing with this very important change in the concept. For instance, if a patient has a sustained high lactate level, would this define a terminal event after a failure in resuscitation instead?

In summary, we consider that new definitions must foster to adequately characterize identification, management and stratification with an integrative clinical and pathophysiological approach. We wonder, after a careful review of the new definitions, if they are just a confusing episode of research or they bring anything truly needed to improve current clinical practice.

Conflict of interest

The authors declare no conflict of interest.

References


