European Journal of Internal Medicine 68 (2019) e22–e23

Contents lists available at ScienceDirect

European Journal of Internal Medicine

journal homepage: www.elsevier.com/locate/ejim

Letter to the Editor

Predictors of mortality of bloodstream infections among internal medicine patients: Mind the complexity of the septic population!

ARTICLE INFO

Keywords:
MEDS
Vitamin D
qSOFA
Prognosis
Sepsis

Sir,

We read with great interest the article by Papadimitriou-Olivgeris and colleagues [1] aiming to evaluate the predictors of mortality among internal medicine patients with bloodstream infections (BSIs). As main result, qSOFA, compared to SIRS and other severity scores, showed better performances in predicting mortality with a high negative predicting value [1].

Our research group has recently conducted a similar evaluation on a cohort of internal medicine patients affected by microbiologically identified BSIs [2]. Despite similarities among the two groups in terms of morbidity and mortality [1,2], the independent predictors of mortality were MEDS scores and vitamin D levels. On the contrary, qSOFA and other severity scores did not show good performances [2].

In our opinion, the reasons for these apparently controversial results could be manifold. First, data on septic patients admitted to internal medicine wards are few with respect to data derived from other contexts (e.g. Emergency Departments and Intensive Care Units) [3–5]. Moreover, the population of septic patients admitted to Internal Medicine wards is heterogeneous [5–8]. With this regard, we agree with the Authors on the complexity of the studied population, and the presence of several comorbidities, in particular malignancies, associated with the worst outcome [1]. All these reasons could favor the presentation variability of septic patients in terms of phenotypic characteristics, host-response, biomarkers profile, and clinical outcomes.

A recently published study by Seymour and colleagues [9] has described the presence of at least four clinical phenotypes of sepsis, which correlated with host-response patterns and prognosis. Probably, in the next future these phenotypes will be of help in understanding the heterogeneity of treatment responses.

Sepsis is a complex syndrome or rather a set of syndromes, characterized by clinical manifestations and evolution that depend on innumerable factors [10]. For this complexity – due to the set of different infections, different individual responses, variegated clinical manifestations and widely varying evolution – it is unlikely to think that a single clinical score or a single laboratory value can give a unique answer in the prognostic field. A combination of multiple predictors (clinical scores and laboratory data) could probably represent the way for a better prognostication. However, future studies are needed to determine the usefulness of sepsis phenotypes in clinical care, particularly in the context of non-ICU wards where most of septic patients are hospitalized [7].

Declaration of Competing Interest

The authors report no conflicts of interest.

Appendix A. Internal Medicine Sepsis Study Group

Stefano Carughi, Cristina d'Angelo, Maria Maddalena D'Errico, Michele Impagnatiello, Giovanna Passaro, Carla Vincenza Vallone, Vincenzo Zaccone.

References

[1] Papadimitriou-Olivgeris M, Psychogiou R, Garessus J, Camaret A, Fourre N, Kanagaratnam S, et al. Predictors of mortality of bloodstream infections among internal medicine patients in a Swiss hospital: role of quick sequential organ failure assessment. Eur J Intern Med 2019, May 22. https://doi.org/10.1016/j.ejim.2019.05.003.

[2] Mirijello A, Tosoni A, Zaccone V, Impagnatiello M, Passaro G, Vallone CV, et al. MEDS score and vitamin D status are independent predictors of mortality in a cohort of internal medicine patients with microbiological identified sepsis. Eur. Rev. Med. Pharmacol. Sci. 2019;23:4033–43.

[3] Esteban A, Frutos-Vivar F, Ferguson ND, et al. Sepsis incidence and outcome: contrasting the intensive care unit with the hospital ward. Crit. Care Med. 2007;35:1284–9.

[4] Howell MD, Shapiro NI. Surviving sepsis outside the intensive care unit. Crit. Care Med. 2007;35:1422–3.

[5] Mazzone A, Dentali F, La Regina M, Foglia E, Gambacorta M, Garagiola E, et al. Clinical features, short-term mortality, and prognostic risk factors of septic patients admitted to internal medicine units: results of an Italian multicenter prospective study. Medicine (Baltimore) 2016;95:e2124.

[6] Mazzone A, Campanini M. Septic syndrome within internal medicine units: finally we have our records!. Ital J Med 2016;10:253–4.

[7] Zaccone V, Tosoni A, Passaro G, Vallone CV, Impagnatiello M, Li Puma DD, et al. Sepsis in internal medicine wards: current knowledge, uncertainties and new approaches for management optimization. Ann. Med. 2017;49:582–92.

[8] Ghanem-Zoubi N, Bitterm an H, Laor A, Yurin V, Vardi M. The accuracy of clinical prediction of prognosis for patients admitted with sepsis to internal medicine departments. Ann. Med. 2015;47:555–60.

[9] Seymour CW, Kennedy JN, Wang S, Chang CH, Elliott CF, Xu Z, et al. Derivation, validation, and potential treatment implications of novel clinical phenotypes for sepsis. JAMA 2019, May 19. https://doi.org/10.1001/jama.2019.5791.

[10] Rusconi AM, Coen D. Using scores in septic patients. Intern. Emerg. Med. 2019;14:591–2.

https://doi.org/10.1016/j.ejim.2019.07.008
Received 4 June 2019; Accepted 13 July 2019
Available online 17 July 2019

European Journal of Internal Medicine 68 (2019) e22–e23

Alberto Tosoni[a], Giovanni Addolorato[a,b], Antonio Gasbarrini[a,b], Salvatore De Cosmo[c], Antonio Mirijello[c,*], on behalf of the Internal Medicine Sepsis Study Group[1],

[a] *Department of Internal Medicine and Hepatogastroenterology, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy*

[b] *Università Cattolica del Sacro Cuore, Rome, Italy*

[c] *Department of Medical Sciences, IRCCS Casa Sollievo della Sofferenza Hospital, San Giovanni Rotondo, Italy*

E-mail address: a.mirijello@operapadrepio.it (A. Mirijello).

* Corresponding author at: Department of Medical Sciences, IRCCS Casa Sollievo della Sofferenza Hospital, v.le Cappuccini, 71013 San Giovanni Rotondo, Italy.

[1] The authors in the Internal Medicine Sepsis Study Group are listed in Appendix A section.