

New and Traditional Biomarkers for Sepsis Diagnosis, Prognosis and Management

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Abstract

Background: Sepsis is a life-threatening condition that demands early diagnosis for effective treatment. Early diagnosis of sepsis with better markers would allow early treatment, imperative in reducing mortality and morbidity. Although numerous parameters and methods have been proposed, none fulfills all the requirements. Early detection through reliable biomarkers is crucial to reduce mortality and morbidity. An ideal method or marker of infection should be cheap, easy to measure, be highly specific and sensitive, allowing early diagnosis of sepsis, and should correlate with the severity of infection and help gauge the efficacy of the therapeutic measures.

Aims: The study aims to evaluate the current sepsis biomarkers to determine their diagnostic, prognostic, and therapeutic relevance.

Study Design: This is a narrative review of clinical trials, meta-analyses, randomized control trials and systematic reviews focusing on sepsis biomarkers.

Methods: We reviewed over 50 peer-reviewed articles on sepsis biomarkers, including studies assessing their application in clinical practice.

Results: Markers of sepsis capable of predicting the immune status of patients with sepsis may help the target population most likely to benefit from such therapies. Humoral and cellular elements of the immune response are activated

during the immune response and induce numerous mediators and inflammatory-related molecules as cytokines, chemokines, acute phase protein and various other metabolites. Many biomarkers have been investigated, and some are now used in clinical settings to guide decision-making.

Conclusion: Sepsis is a very heterogeneous disease and there is still a long way to go on finding the ideal biomarkers, because most of these biomarkers did not pass all the steps to be introduced into clinical practice.

Keywords: Sepsis, biomarkers of sepsis, diagnosis, prognosis, therapeutic monitoring.