BIOMARKERS IN SEPSIS: THE PRESENT AND THE FUTURE

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Sepsis is a complex and potentially life-threatening condition characterized by a dysregulated host response to infection and leading to organ dysfunction. Adult sepsis is neglected, and we are still looking for an effective biomarker which can predict and diagnose sepsis. In low-middle-income countries, where access to diagnostics is difficult and cost is a considerable issue, clinicians often treat a case on an empirical basis. Clinicians often rely on different scores such as SOFA, qSOFA, SIRS, NEWS, and MEWS which are not comprehensive and have many limitations. Identifying biomarkers that can aid in the diagnosis, prognosis, and management of sepsis is an area of active research. WBC count and C-reactive protein are probably the most used markers to predict sepsis. Although not a new biomarker, procalcitonin, serum albumin and lactate have gained significant attention for their role in guiding antibiotic therapy in sepsis. Its levels correlate with the severity of infection and response to treatment. Inflammatory cytokines such as interleukin-6 (IL-6), interleukin-8 (IL-8), interleukin-10 (IL-10), and tumour necrosis factor-alpha (TNF-alpha) play crucial roles in the immune response during sepsis. Monitoring their levels may provide insights into the inflammatory state and prognosis of septic patients. Heparin-binding protein 1 (hbp-1), serum calprotectin, Micro-RNAs (miRNAs), presepsin, endothelial markers, sepsis index (SI) and others are on the pipeline with promises. It's important to note that while these biomarkers hold promise, further validation and standardization are needed before their widespread clinical use in the management of sepsis. The cost of those markers, access for impoverished populations, requirement of logistics will be the other challenging factors.

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