

Role of adjuvant in sepsis management

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Abstract

Sepsis is the primary cause of death from infection, especially if not recognized and treated promptly. Sepsis is a syndrome shaped by pathogen factors and host factors with characteristics that evolve over time. In India, 28 day mortality in sepsis has been reported at 65%, which is higher than reported in western literature (35% to 40%). Pathophysiology of sepsis is characterized by microvascular dysfunction leading to hypoperfusion/hypoxia which in turn causes organ dysfunction. Cytokine storm induced by inflammation due to bacterial infection plays important role in pathophysiology of sepsis induced ischemic organ injury. Despite advanced treatment strategies in sepsis management, mortality remains high. Adjuvant therapies which targets immunological response induced by inflammatory process in sepsis address the gaps existing in current sepsis management strategies. Ulinastatin is serine protease inhibitor exists naturally in human body. During stress antecedent (α TI) is influenced by activated neutrophil elastase, changing in to Ulinastatin. Ulinastatin was first innovated by Japanese company Mochida and currently available in 5 countries including India. Ulinastatin is Endogenous Cytokine Inhibitor which has effect on various proteases. Ulinastatin reduces proinflammatory cytokines like TNF- α and Interleukin-6 and increases anti-inflammatory cytokines like Interleukin-10. It Suppresses the activity of neutrophil Elastase and prevents progression to MOD's in Sepsis and also reduces New onset organ-dysfunction. Ulinastatin reduces overall mortality in sepsis. Multicentre Randomized Controlled Trial in severe sepsis conducted in India showed 13% absolute reduction (significant) in 28 days all-cause mortality and 26% absolute reduction(significant) in new onset organ dysfunction. Similar results obtained in clinical studies conducted by Javeri et al, Mehta etal and Bashir et al. Choudhary et al showed that early Ulinastatin therapy has even better results in sepsis patients.