P9 THE ROLE OF PROCALCITONIN IN SEPSIS

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Purpose of Study This study will discuss the pathogenesis of sepsis, procalcitonin as a diagnostic prognostic marker for sepsis, other biomarkers of sepsis and sepsis treatment.

Methods Used as required.

Summary of Results Sepsis is a systemic immune response to infection by microbial organisms. Its complications are one of the leading causes of mortality. Mortality rate in

sepsis remains high despite the current advances in medical science. Serum biomarkers like procalcitonin may aid in the early diagnosis of sepsis and therapeutic intervention. Procalcitonin belongs to a class of molecules, called “hormokines,” given the hormonal origin of the protein and the inflammation-related functions of its propeptides. Procalcitonin is a potent amplifier of the inflammatory cascade. It has shown that it induces pro-inflammatory like effects on leukocytes (increased the expression of surface markers), increases leukocyte-derived cytokines and also augments nitric oxide. Procalcitonin was found to be a more accurate diagnostic parameter for sepsis. A systemic review and meta-analysis revealed that procalcitonin has a mean sensitivity of 77% and specificity of 79%. Elevated level of procalcitonin was found to be a better predictor of mortality and identify patients at higher risk of adverse outcomes. Procalcitonin is found to be superior to C-reactive protein, TNF- α , Interleukins and Lactate levels in terms of accuracy at identifying sepsis and assessing the severity of sepsis. Implementation of a procalcitonin-guided antibiotic therapy in clinical setting was associated with a reduced duration of antibiotic therapy in septic patients without compromising clinical or economical outcomes.

Conclusions Procalcitonin has been proved to be more reliable biomarker in diagnosing sepsis and predicting clinical outcome. Integrating use of procalcitonin in the early golden hours of sepsis diagnosis and antibiotic stewardship program would be beneficial.

This review identified the association of procalcitonin and sepsis. There is still a need for better understanding of how procalcitonin fits in the immune response, therefore further studies should be towards exploring the immunological role of procalcitonin in sepsis.