THE ROLE OF HNP AS A BIOMARKER OF SEPSIS
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Introduction: Sepsis is one of the leading causes of death in the intensive care unit (ICU) with 750,000 cases annually in the United States. The incidence and mortality related to sepsis have increased over the course of several decades. Currently severe sepsis and septic shock remain a major healthcare concern, affecting millions and killing one in four. Despite improvements in overall awareness, the management of sepsis remains challenging. Improved risk stratification tools are a priority for rapid diagnosis and treatment and overall outcome. Serum biomarkers may be useful in the diagnosis and management of septic patients. However, although many septic mediators have been proposed as potential biomarkers, no "ideal" marker has been found yet. We examined human neutrophil peptide (HNP) and its role in sepsis as a potential biomarker.

Objectives: Our study aims are twofold: (a) to determine whether HNP serum concentration correlate with infection in septic patients and (b) whether their serum concentration levels can reliably be used as a biomarker in sepsis.

Methods: 20 patients who met SIRS-criteria and 10 healthy controls were included the study. The 20 patients who met SIRS-criteria were further divided into 10 septic and 10 non-septic patients. Blood samples were obtained on day 1 of the study period. These were then analyzed for HNP concentrations and cytokine concentrations. These values together with the study patient’s APACHE II scores, demographics, resuscitation data and microbiology were analyzed and compared.

Results: Both study groups (septic and nonseptic) had similar demographics including a mean age of 71.10 ± 5.174 in the septic group and 68.70 ± 3.353 in the nonseptic group, 7 males and 3 females in the septic group and 5 males and 5 females in the nonseptic group. APACHE II scores were similar (mean of 26.50 ± 1.934 in the septic group and 25.60 ± 1.327 in the nonseptic group). The serum HNP concentration was statistically lower in the septic group versus the nonseptic group, p=0.0046. Further inflammatory mediators were analyzed and found to be statistically different between the groups, namely TNF-a (p=0.01), IL-2 (p=0.04), IL-8, IL-6, IL-10 (p<0.05).