

View Abstract

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TITLE: IL-7 INCREASES T CELL FUNCTION IN SEPTIC PATIENTS (SPIES)

PRESENTATION TYPE: Oral or Poster

PREFERRED TOPIC: Sepsis

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ABSTRACT BODY:

Introduction: A hallmark of sepsis and a likely major pathophysiologic abnormality is impaired lymphocyte function that may inhibit patients' ability to eradicate the primary infection and render them more susceptible to secondary hospital acquired infections. IL-7 is a pluripotent cytokine that not only prevents sepsis-induced cell death by also increases lymphocyte activation and function.

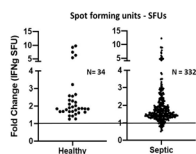
Methods: A single blood sample was collected from 34 healthy controls while serial samples were collected from 112 septic patients. Diluted whole blood ELISpot IFN γ was performed with and without the *ex vivo* addition of IL-7 (5 ng/ml). The number of IFN γ producing lymphocytes - (spot forming units (SFUs)) and the amount of IFN γ produced by each lymphocyte (spot size, SZ) were determined. Serial septic patient samples were combined for single analysis.

Results: IL-7 was effective in increasing the number of SFUs in both controls (100%) and septic patients (85%); mean fold increase with IL-7 equals 2.77 (CI 2.0-3.5) vs 1.94 (CI 1.8-2.1), respectively, ($p < 0.01$) respectively. (**Fig. 1**). IL-7 also increased the amount of IFN- γ produced by each lymphocyte (SZ) in both control and septic patients by approximately 20%, ($p < 0.05$).

Conclusions: Using ELISpot, we have previously demonstrated that low IFN- γ production is associated with increased sepsis mortality. Herein, we show that immune therapy with IL-7 can increase both the number of IFN- γ producing lymphocytes and the amount of IFN- γ produced by each cell. Continued monitoring (longitudinal analyses) of the subset of non-responsive patients correlated with patient outcomes will potentially allow defining mechanisms(s) that contribute to sepsis-induced immunoparalysis. Altogether, the ELISpot assay is an ideal method to both immune stratify septic patients and determine efficacy of potential adjuvant therapies.

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TABLE TITLE: (No Tables)



AWARDS:

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Submission Rules Confirmation: I confirm that I have read and complied with the submission guidelines.

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