

TITLE: The Role of Dysfunctional HDL in Severe Sepsis

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RESEARCH PROJECT DESCRIPTION:

Severe sepsis results in over 300,000 Emergency Department (ED) visits and 215,000 deaths annually in the US. High density lipoprotein (HDL) has antioxidant, anti-inflammatory, and antithrombotic properties and is protective in sepsis. However, recent literature has shown that HDL can become non-functional during acute inflammatory states called dysfunctional HDL (Dys-HDL). Several causes for Dys-HDL have been hypothesized which may worsen the pathologic inflammatory response in sepsis and have been demonstrated in early sepsis, making Dys-HDL an unstudied potential early marker. This project aims to: 1) determine the presence of Dys-HDL in adult patients with early severe sepsis who present to the ED (via cell free assay and HDL Inflammatory Index), and 2) examine the relationship between Dys-HDL and cumulative organ dysfunction via Sequential Organ Failure Assessment (SOFA) score.

Results of this study will help to define the role of Dys-HDL in severe sepsis. Students will receive bedside instruction in the recognition of severe sepsis in ED patients and will learn to screen and accurately identify patients with severe sepsis. Students interested in gaining experience in a clinical research study of critically ill patients are encouraged to apply, particularly those with an interest in Emergency Medicine or Critical Care. Funding is provided by a University of Florida Faculty Dean's Grant and a Society of Critical Care Medicine Vision Grant which will begin January 1, 2015.