

The Cumulative Effects of Multiple Organ Failure, More Commonly Referred to as Multiple Organ Dysfunction Syndrome, also Requires Advanced Care

Deborah Lee*

Department of Clinical Assistant Professor, University of Michigan, School of Nursing, United States

Corresponding Author*

Deborah Lee

Department of Clinical Assistant Professor,

University of Michigan, School of Nursing, United States

E-mail: deborahlee011@edu.us

Copyright: © 2021 Manal Saeed. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received 02 Dec, 2021; **Accepted** 16 Dec 2021; **Published** 23 Dec 2021

Introduction

Intensive care medicine, also called critical care medicine, is a medical specialty that deals with seriously or critically ill patients who have, are at risk of, or are recovering from conditions that may be life-threatening. It includes providing life support, invasive monitoring techniques, resuscitation, and end-of-life care. Doctors in this specialty are often called intensive care physicians, critical care physicians or intensivists. Intensive care relies on multidisciplinary teams composed of many different health professionals. Such teams often include doctors, nurses, physical therapists, respiratory therapists, and pharmacists, among others. They usually work together in intensive care units (ICUs) within a hospital. Patients are admitted to the intensive care unit if their medical needs are greater than what the general hospital ward can provide. Indications for the ICU include blood pressure support for cardiovascular instability (hypertension/hypotension), sepsis, post-cardiac arrest syndrome or certain cardiac arrhythmias. Other ICU needs include airway or ventilator support due to respiratory compromise. The cumulative effects of multiple organ failure, more commonly referred to as multiple organ dysfunction syndrome, also requires advanced care. Patients may also be admitted to the ICU for close monitoring or intensive needs following a major surgery.

There are two common ICU structures: closed and open. In a closed unit, the intensivist takes on the primary role for all patients in the unit. In an open ICU, the primary physician, who may or may not be an intensivist, can differ for each patient. There is increasingly strong evidence that closed units provide better patient outcomes. Patient management in intensive care differs between countries. Open units are the most common structure in the United States, but closed units are often found at large academic centers. Intermediate structures that fall between open and closed units also exist.

Procedures and treatments

Intensive care usually takes a system-by-system approach to treatment. In alphabetical order, the nine key systems considered in the intensive care setting are: cardiovascular system, central nervous system, endocrine system, gastro-intestinal tract (and nutritional condition), hematology, integumentary system, microbiology (including sepsis status), renal (and metabolic), and respiratory system. As such, the nine key systems are each considered on an observation-intervention-impression basis to produce a daily plan. The condition results from infection, injury (accident, surgery), hypoperfusion and hypermetabolism. The primary cause triggers an uncontrolled inflammatory response.

Sepsis is the most common cause of multiple organ dysfunction syndrome and may result in septic shock. In the absence of infection, a sepsis-like disorder is termed systemic inflammatory response syndrome (SIRS). Both SIRS and sepsis could ultimately progress to multiple organ dysfunction syndrome. However, in one-third of the patients no primary focus can be found. Currently, investigators are looking into genetic targets for possible gene therapy to prevent the progression to multiple organ dysfunction syndrome. Some authors have conjectured that the inactivation of the transcription factors NF- κ B and AP-1 would be appropriate targets in preventing sepsis and SIRS. These two genes are pro-inflammatory. However, they are essential components of a normal healthy immune response, so there is risk of increasing vulnerability to infection, which can also cause clinical deterioration.