

Optimization of Cardiovascular Dynamics in Critical Care Medicine and Anesthesiology

Cardiovascular dynamics represent the governing principles of the cardiovascular system, i.e., the heart and the extensive branched system of vessels containing blood, whose primary function is the transport of oxygen, nutrients and other substances and heat throughout the body. The study of cardiovascular dynamics is a classical area of modern medicine; however, their physical and mechanical aspects are not fully understood, and their application in clinical practice is suboptimal.

Signa Vitae is pleased to introduce a special issue dedicated to optimization of cardiovascular dynamics in Critical Care Medicine and Anesthesiology. We invite physicians-scientists, clinicians, and researchers to submit their clinical, basic, experimental, or translational work, i.e., original research studies, narrative reviews, and/or systematic reviews and meta-analyses, in all aspects of cardiovascular dynamics including, but not limited to, hemodynamic monitoring; volume conditions of the cardiovascular system; venous return; heart-lung interactions; cardiac output; ventriculo-arterial coupling; hemodynamic coherence and microcirculation; adequacy of organ perfusion; oxygen transport to tissue; shock; advanced hemodynamic support; organ protection; assessment of responsiveness to fluids, vasoactive drugs/inotropes/vasodilators, and blood/blood components; and individualized, physiology-guided management.

The nature of critical illness or major surgery and the significant costs required to treat these patients challenge both health care providers and health systems. It is our hope that this content helps critical care physicians and anesthesiologists navigate the complexities of cardiovascular dynamics as we strive to improve outcomes for our patient populations.

Keywords: Critical Care Medicine; Anesthesiology; Cardiovascular Dynamics; Hemodynamics

Special issue title

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Associazione Italiana per lo Studio del Dolore
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