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MANAGEMENT OF HEMODYNAMIC FAILURE IN CRITICAL CARE

Lali Patsia[1], **Levan Ratiani**[2], **Nodar Sulashvili**[3]

1. Cardiology Department, the First University Clinic, Tbilisi State Medical University, Tbilisi, Georgia
2. ICU Department, the First University Clinic, Tbilisi State Medical University, Tbilisi, Georgia
3. Pharmacology Department, the Tbilisi State Medical University, Tbilisi, Georgia

Hemodynamic monitoring in critically ill patients includes all techniques that evaluate and monitor the hemodynamic state of patients. For the basic initial monitoring, recent studies emphasized the importance of clinical signs of hypoperfusion and arterial pressure. This basic monitoring is not sufficient in patients resistant to initial treatment. Hemodynamic monitoring in critically ill patients involves a spectrum of non-invasive, minimally invasive and invasive techniques used to assess cardiovascular function, guide therapy and ensure adequate tissue oxygenation. The primary goal is to identify and manage hemodynamic instability, such as shock or heart failure, to prevent organ dysfunction and improve patient outcomes. Monitoring of cardiac output makes it possible to detect cardiovascular failure early and to apply treatment, sometimes using algorithms, which have been shown to improve the prognosis, particularly by reducing complications of high-risk patients. For more continuous monitoring, non-invasive and minimally invasive tools are insufficiently reliable and informative, as recently confirmed. The most invasive techniques, transpulmonary thermodilution and the pulmonary arterial catheter, are more suitable. Their effect on outcome is lacking, although recent studies showed their benefit in acute heart failure. For assessing tissue oxygenation, recent publications better defined the meaning of the indices derived from the partial pressure of carbon dioxide. The integration of all data by artificial intelligence is the subject of early research in critical care. Hemodynamic monitoring methods are selected based on the patient's condition, the required level of detail and the associated risks. A multimodal and patient-centred approach, integrating clinical judgment with the appropriate monitoring tools, is currently considered the most effective strategy for managing critically ill patients.

Keywords: Hemodynamic monitoring, critically ill patient.