

## **Abstract**

**BACKGROUND:** The occurrence of heel decubitus ulcers in critically ill patients is a global problem. Comorbidities, distal perfusion abnormalities, multiple organ failure, pharmacotherapy and immobilisation associated with mechanical ventilation and affect the quality of microperfusion in the heel area. The presence of frictional force, shear and simple pressure contributes directly to local tissue hypoxia and secondary tissue destruction in the heel margin.

**Aim:** The main aim of this study was to assess the impact of selected risk factors for heel decubitus ulcers in patients treated in an intensive care setting

**Research material and methods:** A prospective-observational study using controlled observation and estimation methods. An analysis of the literature discussing the incidence of pressure ulcers in critically ill patients was carried out. Based on the data, a research protocol was drawn up, consisting of three parts, A, B and C. Parts A and C were designed for the first-stage assessment (phase I), while parts B and C were tools for the second-stage study.

**Results:** A correlation was found between the CRP value and the incidence of heel decubitus ulcers in critically ill patients. Infusion of catecholamines determines the high risk of pressure sores in the critically ill group ( $p < 0.001$ ). Distal perfusion dysfunction assessed by the ankle-arm index (ABI - PAD) significantly influences the high risk of heel decubitus ulcers in critically ill patients ( $p = 0.026$ ). The effect of NRS 2002 score on the incidence in the study group was not confirmed ( $p = 0.964$ )

**Conclusions:** Critically ill patients represent a high-risk group for heel decubitus ulcers. Distal perfusion disorders, invasive therapeutic techniques, and specific pharmacotherapy determine the high risk of pressure sores. Prevention implemented at an early stage makes it possible to reduce the complications of deep tissue destruction, even in the face of the patient's critical condition, and life-saving procedures implemented.

**Keywords:** Intensive care, heel decubitus ulcers, critically ill patient, ankle-arm ratio.