

13. ABSTRACT

Title: The impact of selected inflammatory parameters on the occurrence of delirium, sleep disorders, and Post Intensive Care Syndrome (PICS) in the Intensive Care Unit patients.

Introduction: Mayhem, which can also be referred to as delirium, sleep disturbances, and Post Intensive Care Syndrome (PICS), are common and serious complications that can arise in patients hospitalized in the Intensive Care Unit (ICU). Delirium, defined as acute brain dysfunction, affects 30-80% of ICU patients and is associated with more extended hospital stays, a higher risk of mortality, and potential permanent cognitive deficits. Sleep disorders, including sleep fragmentation, decreased sleep quality, and altered sleep patterns, are also prevalent among ICU patients. The presence of these disturbances can negatively impact recovery and delay the return to normal functioning. Additionally, Post Intensive Care Syndrome, characterized by mental, cognitive, and physical impairments, significantly reduces the quality of life for patients treated in the ICU.

Aim of study: The aim of this study was to analyze the influence of selected inflammatory parameters on the occurrence of delirium, sleep disorders and Post Intensive Care Syndrome in Intensive Care Unit patients.

Materials and methods: The study involved a total of 267 patients who were hospitalized in the Department of Anesthesiology and Intensive Care at Copernicus Hospital Ltd. in Gdansk and met the inclusion criteria. The work was organized to collect essential data, including the levels of C-reactive protein, procalcitonin, and interleukin 6 from patients in the ICU. To be included in the study, patients had to have a minimum hospitalization duration of 48 hours. In the next phase, standardized diagnostic questionnaires—the Confusion Assessment Method-Intensive Care Unit (CAM-ICU) scale, the Athens Insomnia Scale (AIS), and the Post Intensive Care Syndrome Questionnaire (PICSQ)—were used to gather data on delirium, sleep disorders, and post-intensive care syndrome. The results obtained were analyzed statistically and are presented in this paper using tables and histograms.

Results: The study revealed that patients hospitalized in the ICU experienced delirium, sleep disorders, and post-intensive care syndrome. Additionally, there was a positive correlation between increased levels of specific inflammatory parameters and the development of delirium, sleep disorders, and cognitive and mental issues.

Conclusions: (1) Delirium is commonly observed in patients in the Intensive Care Unit (ICU) during the first few days of hospitalization. (2) This delirium can prolong the length of stay in the ICU and increase the risk of complications and mortality. (3) Elevated levels of C-reactive

protein, procalcitonin, and interleukin 6 are significantly associated with the occurrence of delirium. (4) Hospitalization in the ICU is strongly linked to sleep disturbances, particularly insomnia. (5) Increases in inflammatory markers, such as C-reactive protein, procalcitonin, and interleukin 6, are also strongly correlated with sleep disorders, specifically insomnia. (6) A stay in the ICU is a predictor of developing Post Intensive Care Syndrome (PICS). (7) High levels of interleukin 6 on days 2 and 4 of ICU hospitalization are associated with a heightened risk of developing PICS, particularly in cognitive and mental domains. (8) Elevated levels of the inflammatory markers tested are strongly correlated with an extended duration of hospitalization in the ICU.

Keywords: Inflammatory parameters; delirium; sleep disorders; post intensive care syndrome (PICS); intensive care unit.