Sleep Disorders in Critically Ill Patients

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Abstract

Sleep disorders in intensive care units (ICUs) represent an important clinical problem with a potential impact on morbidity and mortality in critically ill patients. Sleep in the ICU is characterized by marked fragmentation, a predominance of lighter sleep stages, and a reduction or almost complete absence of deep N3 sleep and rapid eye movement (REM) sleep. The most common disturbances include reduced total sleep time, acute insomnia, circadian rhythm disorders caused by the loss of usual environmental time cues, and sleep-related breathing disorders, such as obstructive and central sleep apnea. Hypersomnia, parasomnias, and sleep-related movement disorders may also occur. Cumulative sleep deprivation is an important factor contributing to the development of delirium. The etiology is multifactorial. Environmental factors, including noise, artificial lighting, and frequent medical interventions, interact with the physiological stress of the underlying illness and the patient's premorbid condition. Pharmacotherapy, particularly benzodiazepines, opioids, propofol, and corticosteroids, may further disrupt sleep architecture by suppressing REM sleep and increasing sleep fragmentation. Patient–ventilator asynchrony during mechanical ventilation also contributes to frequent awakenings. Consequences of sleep deprivation include cardiovascular, respiratory, and immune dysfunction, metabolic and hormonal imbalance, cognitive impairment, anxiety, and an increased risk of post-traumatic stress disorder. Sleep assessment is challenging because of the patient's clinical condition, medication effects, and ICU-related factors. Although polysomnography remains the gold standard for objective sleep assessment, other methods are more commonly used in clinical practice, including actigraphy, the bispectral index (BIS), staff assessments, and the Richards–Campbell Sleep Questionnaire. The Confusion Assessment Method for the ICU (CAM-ICU) is used to assess delirium.

Keywords: sleep disorders; critically ill patients; intensive care unit; sleep deprivation; delirium; circadian rhythm; mechanical ventilation; polysomnography

2026. Čubra M.
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Poremećaji spavanja u kritično bolesnih pacijenata

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Sažetak

Poremećaji spavanja u jedinicama intenzivnog liječenja (JIL) predstavljaju važan klinički problem s mogućim utjecajem na morbiditet i mortalitet kritično bolesnih pacijenata. Spavanje u JIL-u obilježeno je izraženom fragmentacijom, prevladavanjem plićih stadija spavanja te smanjenjem ili gotovo potpunim izostankom dubokog N3 spavanja i REM spavanja. Najčešći poremećaji uključuju skraćeno ukupno vrijeme spavanja, akutnu nesanicu, poremećaje cirkadijanog ritma zbog gubitka uobičajenih vremenskih signala te poremećaje disanja tijekom spavanja, poput opstruktivne i centralne apneje u spavanju. Mogu se javiti i hipersomnija, parasomnije te poremećaji pokreta povezani sa spavanjem. Kumulativna deprivacija spavanja važan je čimbenik koji pridonosi razvoju delirija. Etiologija je multifaktorijalna. Okolišni čimbenici, uključujući buku, umjetnu rasvjetu i učestale medicinske intervencije, djeluju zajedno s fiziološkim stresom uzrokovanim osnovnom bolešću i premorbidnim stanjem bolesnika. Farmakoterapija, osobito benzodiazepini, opioidi, propofol i kortikosteroidi, može dodatno narušiti arhitekturu spavanja supresijom REM spavanja i povećanjem fragmentacije. Neusklađenost bolesnika i respiratora tijekom mehaničke ventilacije također pridonosi učestalim buđenjima. Posljedice deprivacije spavanja uključuju kardiovaskularnu, respiratornu i imunološku disfunkciju, metaboličku i hormonsku neravnotežu, kognitivno oštećenje, anksioznost i povećan rizik od posttraumatskog stresnog poremećaja. Procjena spavanja otežana je zbog kliničkog stanja bolesnika, učinaka lijekova i uvjeta u JIL-u. Iako polisomnografija ostaje zlatni standard objektivne procjene spavanja, u kliničkoj se praksi češće koriste druge metode, uključujući aktigrafiju, bispektralni indeks (BIS), procjene medicinskog osoblja i Richards–Campbellov upitnik o spavanju. Za procjenu delirija koristi se metoda CAM-ICU.

Ključne riječi: poremećaji spavanja; kritično bolesni pacijenti; jedinica intenzivnog liječenja; deprivacija spavanja; delirij; cirkadijani ritam; mehanička ventilacija; polisomnografija

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