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Delirium represents a complex neurobehavioral syndrome characterized by dysregulation of neuronal activity caused by systemic disturbances (1). It is frequent complication after cardiac surgery, especially in ICU (intensive care units). Long and complex cardiac surgery procedures with cardiopulmonary bypass, aortic clamp, heart and blood vessels manipulations, micro and macro emboli production, systemic inflammatory response, hemodynamic instability, cerebral hypoperfusion, oxygen desaturation, and postoperative complications place the patient at high risk of delirium development (2).

The incidence of postoperative delirium varies between 11.2% to 52% (3-6). High incidence of hypoactive delirium, often fluctuating course of the disease, absence of the active screening for the delirium presence and overlapping symptoms of delirium and dementia sometimes make the recognition of delirium extremely difficult (5).

It seems that delirium develops as a result of the complex interactions between factors related to patient vulnerability (predisposing factors) and perioperative insults (precipitating factors). The most important predisposing risk factors are age, depression, cognitive impairment, history of stroke, diabetes mellitus and atrial fibrillation. The precipitating risk factors are type and duration of surgery, prolonged intubation and mechanical ventilation, perioperative red blood cell transfusion, elevated inflammatory biomarkers, plasma cortisol level, postoperative complications. The fast-track weaning protocols and dexmedetomidine sedation may lower the rate of postoperative delirium (7). Among patients who develop delirium older age, perioperative stroke, longer time of surgery, and elevated C-reactive protein are predictive of prolonged delirium (4).

Recently, many anesthesiologic and surgical modifications has been made to prevent the delirium development (8). Intraoperatively, controlling of depth of anesthesia (bispectral index) (9), assessment of regional cerebral tissue oxygen saturation (near-infrared spectroscopy) (10), continuous monitoring of

mixed venous oxygen saturation (11), controlling mean arterial pressure using cerebral autoregulation monitoring (12), or transcranial doppler technic (13) could diminish cerebral alterations and delirium occurrence. During the ICU stay many measures are implemented as a standard clinical practice in order to prevent delirium or diminished potentially harmful consequences if delirium occurs (8).

Despite the improvements in prevention and therapy, the prevalence of delirium remains high, affecting mortality, morbidity functional recovery, cognitive decline and quality of life (14).

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