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SURGICAL PATIENTS WITH MENTAL DISORDERS

Abstract: Patients with psychiatric illnesses are more likely to have certain internal / surgical illnesses, and the perioperative period has its specificities due to possible cognitive deficits, altered mental status, and use of psychopharmaceuticals / psychoactive substances. The importance of preoperative diagnosis of psychiatric problems and their impact on postoperative outcomes have been documented in numerous studies. Psychiatric comorbidity can significantly affect the diagnosis of surgical disease and the preoperative preparation of patients, the course of surgery and anesthesia, postoperative recovery, and the daily care of these patients. Certain psychiatric conditions are at increased risk for relapse / worsening of symptoms in the perioperative period.

Key words: psychiatric patients, surgical interventions, anesthesia, addiction

Introduction

According to the World Health Organization, every 25th resident of the planet has one major surgery per year. On the other hand, it is estimated that one third of visits to general practitioners are made up by patients with psychiatric problems, while the prevalence of these patients in surgical wards is 15-50%. Organic psychosyndromes (dementia, delirium), anxiety, depression and alcoholism are among the most common diseases. Surgical patients often have previous psychiatric illnesses, and a large number of psychiatric problems can become evident in the post-operative period.

Psychiatric disorders and problems in surgical patients

Although not all psychiatric problems strictly represent psychiatric illnesses, statistics indicate a high percentage of this symptomatology in general hospitals, whi-

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ch goes undiagnosed and inadequately treated in patients. The study, which included 400 patients from the internal medicine and surgical wards, showed a prevalence of psychiatric illnesses of 30-50%. Organic psychosyndromes, depression, and alcoholism are among the most commonly cited in this study, with no significant difference between internal medicine and surgical patients. Psychiatric consultation / intervention was necessary in almost half of the subjects, and 25% of patients required continued psychiatric care after hospital discharge. (1).

A prospective study of two surgical wards in Ireland reported severe depression in 12.5% of patients, significant generalized anxiety in 19%, and mixed anxiety and high-grade depression in 8% of hospitalized patients. (2)

Number of surgical patients have previous psychiatric illnesses, and many psychiatric problems may become evident in the post-operative period. The prevalence of these symptoms in surgical patients is 15–50%, and they are often undiagnosed.

Perioperative period of patients with mental disorders

In the preoperative period, consultation with a psychiatrist first addresses issues of patient consent to the intervention. On the one hand, the patient's rationality consenting to surgery must be evaluated, especially for severe psychiatric disorders, and on the other hand, some of patients can refuse surgery due to cognitive disorders, panic or depression. Other preoperative issues most commonly include fear of surgery, anesthesia, needles and blood, which may result in a panic attack and require the intervention of a psychiatrist. Associated psychiatric illnesses and the therapy must also be evaluated as generalized anxiety disorder, depression and psychosis increase risk for relapse/worsening of symptoms in the postoperative period. Paranoid, anxious, and schizoid personality types with generally discrete illnesses may exhibit a range of behavioral disorders in a state of physical and psychological distress following surgery, which should not surprise medical staff caring for a patient.

The number of surgical patients using antidepressants in therapy is about 35%. The use of MAO inhibitors is very common, so, a rule was to exclude medications before planned general anesthesia. Nowadays, this is a pretty rare practice as studies have shown that break of therapy causes depression and delirium in number of patients, and the effect on hypotension and arrhythmias during anesthesia occurs in the similar number of cases. These patients may have a poor therapeutic approach of physicians and nurses. These patients may also have different levels of cognitive impairment or a lack of logical thinking that make difficulties in following treatment instructions. Patients with paranoid dementia may refuse surgery or postoperative care due to the mistaken belief that medical staff will want to injure them. Surgery-related stress also

affects patients with bipolar disorder and can lead to acute relapse to manic phase. Break of oral medication perioperatively refers to lithium, some antidepressants, most antipsychotics and anticonvulsants, and parenteral antipsychotics are used as a replacement.

Fear of surgery is present in many patients and preoperative anxiety in a high percentage (54%) was documented 30 years ago in a study involving 150 surgical patients. Anesthesia anxiety is present in one third of the subjects and is mostly related to the fear that the effect of the anesthetic will cease during the operation itself or that the person will not wake up from anesthesia. In the era of one-day-surgery and the use of „lighter“ anesthetics, patients may recall some events from the intraoperative period and this may require special measures in postoperative care. Some studies of elective cardiosurgery indicate that patients feel the greatest fear while waiting at hospital admission. Empathy with the patient through explanations and the provision of important information can reduce preoperative anxiety, postoperative pain, and the hospital stay period. Patients also often experience fear of needles and blood-depending infections (transfusions). A strong fear of needles and medical instruments is present in 10 to 21% of adults and can lead to weakness and short-term loss of consciousness due to a strong vasovagal reaction.

Chronic alcohol abuse is more common in surgical, than in psychiatric and neurological patients, which would be more expected. Over 50% of patients with gastrointestinal cancer are alcohol dependent, and the same percentage of patients in traumatology departments have suffered alcohol related injuries. In addition to the serious symptoms that accompany an abstinence crisis, morbidity and mortality due to surgical infection, cardiopulmonary insufficiency and bleeding are 2 to 4 times higher in cases of chronic alcoholism. Staff should keep on mind this possibility in severe trauma patients, especially unconscious ones, as valid anamnestic data on alcohol consumption cannot be obtained in these cases. Chronic alcoholism can reduce or increase the effect of anesthesia, which depends on liver condition, the amount of alcohol consumed, and the use of drugs metabolized by the liver. Alcohol complications such as liver cirrhosis, seizures, pancreatitis, polyneuropathy and cardiomyopathy can also progress to conditions requiring surgery. More common postoperative infection is associated with poor immunity and decrease of stress hormones secretion in response to surgical trauma. Severe intraoperative hemorrhages are expected in chronic alcoholics due to coagulopathy, and frequent malnutrition leads to prolonged and complicated wound healing. Opioid addiction is less frequent than alcoholism in surgical patients, but a patient may require higher doses of medication to treat postoperative pain due to developed tolerance.

Postoperative delirium is very common, especially in elderly patients who undergo emergency surgery and/or major interventions on the gastrointestinal or cardiovascular system. The majority of studies refer to older patients in the orthope-

dics department, where delirium occurs in more than 40% cases. In cardiac surgery, the percentage varies from 2%- 30%, depending on the type of surgery and the age of the patient. Preoperative risks for the development of delirium include older age, alcohol abuse, dementia and cognitive impairment, comorbidities and the severity of acute illness. Type of anesthesia also has an impact. More often, delirium can be expected in patients who have a postoperative change in the wakefulness and sleep cycle, inadequately treated pain, or benzodiazepines use in therapy. Delirium usually occurs after 2–5 days after surgery and stops within one week. Administration of benzodiazepines for 3 days immediately after surgery to regulate the wakefulness and sleep cycles significantly reduced the onset of delirium, developed in only 5% of patients, compared with 35% in control. Geriatric consultation for elderly patients reduced the incidence of delirium from 50% to 32% and severe delirium from 29% to 12% (2, 5).

Post-traumatic stress disorder (PTSD) occurs in patients with trauma or burns, but it also in some percent after cardiac surgery and neurosurgical interventions (3). In adult traumatized patients, fully manifested PTSD develops in 18–40%, often associated with alcohol intoxication at the time of injury and severe anxiety during hospital stay. PTSD usually occurs in the first week after trauma / surgery with an increase in symptom intensity over the next 3 months, what may be important for the postoperative care of these patients. The diagnosis of PTSD is difficult in patients with postoperative delirium, and a relatively short hospital stay is a negative factor for the diagnosis of disorder.

Some of surgery interventions significantly changes the appearance of the patient and his/ her acceptance of his/her own body, especially amputation, intervention after trauma or burns, and bariatric surgery. It is reported that up to 70% of patients experience “phantom pain” originating from the missing part of the lost limb, and 50% of patients have the same problems even 5 years later. (4) Certainly such interventions are accompanied by special physical care required psychological support in the perioperative period.

Certain aspects of emergency and elective surgery in patients with mental illness

According to a study published in 2011, mentally ill patients have a more difficult access to elective surgery due to social stigma and certain cognitive deficits, behavioral disorders and impaired communication. The results indicate that 30–70% of mentally ill patients will not receive a referral from a physician for certain surgical procedures, compared to non-psychiatric patients. These procedures include hip / wrist replacement surgery, breast reconstruction, pacemaker implantation, coronary artery bypass grafting, coronary angioplasty (balloon dilation), bone marrow organ

/ stem cell transplantation. In terms of psychiatric illness, the fewest interventions were performed in patients with schizophrenia, slightly higher in patients with severe depression, bipolar disorder, and substance abuse, and the highest in patients with post-traumatic stress disorder (PTSD). Among psychiatric patients who underwent surgery, a longer hospital stay, more frequent hospitalization within 30 days after surgery, higher mortality and generally worse hospital outcomes were observed, as well as one year after discharge. (5, 7)

Useful information on the impact of psychiatric illness and therapy on a patient's condition can be obtained by retrospective analysis of the outcomes and complications after surgical treatment in such patients. In a study conducted in Japan in 2007, certain problems in dealing with psychiatric patients were highlighted, primarily due to inadequate communication with medical staff, which made it difficult to establish a diagnosis of surgical disease, as well as postoperative complications. In addition to late diagnosis, long-term administration of psychopharmaceuticals has an effect on the perioperative period. In this group of patients, surgery is planned as if there were cardiomyopathy, liver dysfunction, hormonal or metabolic failure. Antipsychotics in therapy have been associated with motor disorders, changes in the cardiovascular, vegetative nervous and endocrine system, as well as disorders in liver function and hematological abnormalities. The most serious effects on the cardiovascular system are resistant hypotension, arrhythmias, and sudden cardiac death. Prolonged use of antipsychotics can lead to alpha adrenergic receptors bloc and decreasing peripheral vascular resistance and hypotension. In the mentioned study, 42.9% of patients had intravenous and postoperative catecholamine-resistant hypotension, with loss of normal laryngeal reflex, indicating vegetative nervous system disorders. In this study, as well as several others, no symptomatic exacerbation occurred during the termination of psychiatric therapy immediately before surgery. What type of anesthesia should be used in these patients remains an open question. In this study, general anesthesia was used for emergency patients, but the epidural for elective surgery, with or without general anesthesia. Epidural anesthesia has many advantages in these patients, because it has favorably effects on the stability of the cardiovascular system, does not lead to respiratory complications and paralytic ileus although it requires patient cooperation. (6)

Regarding substance abuse, tolerance and a different level of dependence can develop. Physical dependence is most expressed in case of the use of opioids, barbiturates, alcohol and benzodiazepines, and deaths can occur during abstinence crises due to sympathetic hyperactivity and cardiovascular instability. During the planning the type of anesthesia for these patients, it is important to prevent drug interactions, to provide anesthetics tolerance, and avoid the onset of abstinence crisis. It is important whether the abuse is acute or chronic, as well as the type of substance, to prevent drug interactions, tolerance to anesthetics, and the onset of abstinence crisis (7). Elective

procedures should be delayed in the case of acute intoxication and when symptoms of abstinence are present. With opioid dependence, any medication in this group can be given in small doses, with alcohol dependence, benzodiazepines, B complex vitamins and folates are given to prevent Wernicke-Korsakov syndrome. General anesthesia in these patients is performed by volatile anesthetics to adjust the depth of anesthesia to the patient's condition and monitor alertness. The problem with emergency surgery after trauma is the frequent intoxication of the patient, sometimes with many different substances. Acute cocaine intoxication can lead to secondary hypertension and arrhythmias perioperatively, and chronic abuse can lead to depletion of sympathomimetic neurotransmitters and hypotension. The same goes for abuse of amphetamines. It is important to know that patients taking opioid substitution therapy (methadone) have poor control of postoperative pain with lower doses of analgesics and therefore require multimodal therapy. Such therapy requires good cooperation with a psychiatrist. Tolerance to most anesthetics has been seen in substance abuse, but it is not easy to predict it. For example, in the acute abuse of opioids, barbiturates, alcohol and benzodiazepines, the dose of anesthetics should be reduced, while in chronic use of these substances the dose should be increased. Acute abuse of amphetamines and cocaine requires an increase in anesthetic dose due to strong stimulation of the sympathetic system, while chronic use of amphetamines requires a reduction in dose and unknown data for chronic cocaine use. (8, 9)

References

1. Weiser T., Regenbogen S., Thompson K., et al. An estimation of the global volume of surgery: a modelling strategy based on available data. *The Lancet Global Health*. 2008; 372: 139–44.
2. Mihaolain A., Butler J., Wood A., et al. The increased need for liaison psychiatry in surgical patients due to the high prevalence of undiagnosed anxiety and depression. *Irish Journal of Medicine Science*. 2008; 177(3): 211–5.
3. Kudoh A., Katagai H., Takazawa T. Antidepressant treatment for chronic depressed patients should not be discontinued prior to anesthesia. *Canadian Journal of Anesthesia*. 2002; 49: 132–6.
4. Koivula M., Tarkka MT., Tarkka M., et al. Fear and in-hospital social support for coronary artery bypass grafting patients on the day before surgery. *International Journal of Nursing Studies*. 2002; 39: 415–27.
5. Levenson J. Psychiatric Issues in Surgical Patients Part I: General Issues. *Primary Psychiatry*. 2007; 14(5): 35–9.
6. Klein E., Koren D., Arnon I., et al. Sleep complaints are not corroborated by objective sleep measures in post-traumatic stress disorder: a 1-year prospective study in survivors of motor vehicle crashes. *Journal of Sleep Research*. 2003; 12: 35–41.

7. Nadler-Moodie M. Psychiatric emergencies in med-surg patients: Are we prepared? *American Nurse Today*. 2010; 5(5): 23–8.
8. Li Y., Cai X., Du H., et al. Mentally ill patients less likely than others to receive certain types of surgery. *Health Affairs*. 2011; 30(7): 1307–15.
9. Ushijima C., Yamazaki K., Kouso H., et al. Surgical Treatment of Lung Cancer in Patients with Psychiatric Disorders: A Retrospective Study. *Journal of Cancer Therapy*. 2016; 7: 553–57.