Translated by E.V. Trushina

Research Article

https://doi.org/10.23934/2223-9022-2023-12-4-607-613

Clinical and Psychopathological Features of Mental Disorders in Patients with Poisoning by Hypotensive and Antiarrhythmic Drugs as a Result of Suicidal Acts

T.I. Dikaya[1] ✉, K.K. Ilyashenko[1, 2], G.N. Sukhodolova[1, 2], O.V. Zubareva[1], M.M. Potskhveriya[1, 3]

Department of Acute Poisoning and Somatopsychiatric Disorders
[1] N.V. Sklifosovsky Research Institute for Emergency Medicine
3, Bolshaya Sukharevskaya Sq., Moscow 129090, Russian Federation
[2] Scientific and Practical Toxicological Center of the Federal Medical and Biological Agency
3 Bldg., 7, Bolshaya Sukharevskaya Sq., Moscow 129090, Russian Federation
[3] Russian Medical Academy of Continuous Professional Education
2/1 Bldg. 1, Barrikadnaya St., Moscow 125993, Russian Federation

✉ **Contacts:** Tatiana I. Dikaya, Candidate of Medical Sciences, Psychiatrist, Senior Researcher, Department of Acute Poisoning and Somatopsychiatric Disorders, N.V. Sklifosovsky Research Institute for Emergency Medicine. Email: mishleu2012@yandex.ru

BACKGROUND Among the forms of suicidal behavior, self-poisoning is the most common one, often occurring as a result of taking various medications, the second place among them is occupied by antihypertensive and antiarrhythmic drugs. Studying the structure of mental disorders in suicide victims with poisoning by these drugs is necessary to prevent repeated suicidal acts.

AIM OF STUDY To study the clinical and psychopathological features of mental disorders in patients with acute poisoning by hypotensive and antiarrhythmic drugs as a result of suicidal acts.

MATERIAL AND METHODS The results of a psychopathological study were analyzed in 122 patients (age 15–93) with antihypertensive and antiarthymic drugs poisoning as the suicidal attempt.

RESULTS In the structure of mental disorders in patients with suicidal poisoning by hypotensive and antiarrhythmic drugs, anxiety-depressive reactions associated with stress prevailed (F43.20–43.25) — 65.6%. Endogenous mental pathology was detected in 19.7% of patients, of which endogenous depression (F32–F34) — in 13.1%, depressive — delusional states with schizophrenia (F20) — in 6.6%. Organic personality, affective psychotic and delusional disorders (F06–F07) were diagnosed in 14.7% of patients. In 45.9% of patients, acute poisoning occurred against the background of comorbid somatic pathology, in 87.5% of them — of cardiovascular genesis. Typological variants of early postsuicidal states in the studied contingent of patients are as follows: critical type of postsuicide (54.9%), manipulative (16.4%), fixed (14.8%), unspecified (13.9%); their significance for assessing repeated suicidal risk was determined.

CONCLUSION The findings of the study complement the understanding of the patterns of suicidal behavior in patients with self-poisoning, which will improve approaches to the prevention of suicide through drug poisoning.

Keywords: suicidal poisoning, hypotensive and antiarrhythmic drugs, mental disorders, post-suicidal states

For citation Dikaya TI, Ilyashenko KK, Sukhodolova GN, Zubareva OV, Potskhveriya MM. Clinical and Psychopathological Features of Mental Disorders in Patients with Poisoning by Hypotensive and Antiarrhythmic Drugs as a Result of Suicidal Acts. *Russian Sklifosovsky Journal of Emergency Medical Care*. 2023;12(4):607–613. https://doi.org/10.23934/2223-9022-2023-12-4-607-613 (in Russ.)

Conflict of interest Authors declare lack of the conflicts of interests

Acknowledgments, sponsorship The study has no sponsorship

Affiliations

Tatiana I. Dikaya	Candidate of Medical Sciences, Psychiatrist, Senior Researcher, Department of Acute Poisoning and Somatopsychiatric Disorders, N.V. Sklifosovsky Research Institute for Emergency Medicine; https://orcid.org/0000-0002-5800-5133, mishleu2012@yandex.ru; 30%, collection of material, data analysis, article writing
Kapitalina K. Ilyashenko	Doctor of Medical Sciences, Professor, Scientific Consultant, Department of Acute Poisoning and Somatopsychiatric Disorders, N.V. Sklifosovsky Research Institute for Emergency Medicine; Physician-Toxicologist, Scientific and Practical Toxicological Center of the Federal Medical and Biological Agency; https://orcid.org/0000-0001-6137-8961, toxikapa@mail.ru; 30%, research concept, text editing

Galina N. Sukhodolova	Doctor of Medical Sciences, Professor, Senior Researcher, Department of Acute Poisoning and Somatopsychiatric Disorders, N.V. Sklifosovsky Research Institute for Emergency Medicine; Physician-Toxicologist, Scientific and Practical Toxicological Center of the Federal Medical and Biological Agency; https://orcid.org/0000-0001-7838-4612, sukhodol56@mail.ru; 20%, collection and systematization of material
Olga V. Zubareva	Candidate of Medical Sciences, Leading Researcher, Department of Acute Poisoning and Somatopsychiatric Disorders, N.V. Sklifosovsky Research Institute for Emergency Medicine; https://orcid.org/0000-0002-6513-5884, olgazubareva@yandex.ru; 10%, material collection, text editing
Michail M. Potskhveriya	Doctor of Medical Sciences, Head, Department of Acute Poisoning and Somatopsychiatric Disorders, N.V. Sklifosovsky Research Institute for Emergency Medicine; Professor, Department of Clinical Toxicology, Russian Medical Academy of Continuous Professional Education; https://orcid.org/0000-0003-0117-8663, potskhveriyamm@sklif.mos.ru; 10%: approval of the material and structure of the article, text editing

INTRODUCTION

Suicidal behavior is a major health problem worldwide. Self-poisoning is the most common among its forms [1]. In terms of mortality, suicides due to self-poisoning are in second or third place, second only to self-hanging, while the share of drug poisoning accounts for more than 65% of all cases of fatal suicides; this trend is explained by easy availability of various chemicals, in particular drugs [2]. According to domestic authors [3], drugs that affect the cardiovascular system are in second place in Russia for the purpose of suicide; and inferior in frequency of use only to psychotropic drugs which consistently predominate in suicidal poisonings. Thus, studies conducted in various regions of this country give very similar indicators reflecting the frequency of occurrence of suicidal self-poisoning by antihypertensive and antiarrhythmic drugs (AAD) in the structure of all suicidal poisonings: Nizhny Novgorod - 12.6% [4], Tyumen - 13.5% [5]. The main place among them is occupied by drugs belonging to the groups of β-blockers, slow calcium channel blockers, and angiotensin-converting enzyme inhibitors. According to some authors, taking β-blockers, especially in combination with cholesterol-lowering drugs, increases the risk of developing depressive disorders [6]. In terms of self-poisoning problem as a form of suicidal behavior, primary care physicians have to take into account these risk mechanisms.

Every year, the Department of Acute Poisonings and Somatopsychiatric Disorders of the N.V. Sklifosovsky Research Institute for Emergency Medicine admits more than 3,000 patients with poisoning for the purpose of suicide, of whom from 7.8 to 9.4% use drugs affecting the cardiovascular system [7]. Their use in situations of suicidal behavior is determined by easy availability in pharmacies, low cost, and the widespread prevalence of cardiovascular diseases among the general population [8].

Moreover, medical practice and literature data make it possible to highlight points in which suicidal behavior and diseases of the circulatory system may have common ground. Thus, anxiety of varying severity is determined in 90% of patients with hypertension, while in women these disorders are more pronounced. Anxiety in patients with coronary heart disease is usually higher than in patients with hypertension [9], and is directly dependent on the severity of coronary heart disease and hypertension [10]. Depression, usually in combination with anxiety, is recorded with high frequency in people who have suffered myocardial infarction (25–67%), and stroke (25–33%) [11, 12]. The development of depression in these conditions can be due to psychological, somatic, and social reasons (decreased ability for self-care, changes in social and financial situation), as well as symptoms of organic brain damage that develop as part of the

vascular disease. Emotional disorders with the dominant depressive orientation create a favorable background for suicidal activity.

The study of clinical and psychopathological features of mental disorders in suicide victims with acute poisoning by AAD is of interest not only for psychiatrists, but also for toxicologists and resuscitators, since psychopathological symptoms often influence the course of poisoning.

Aim: to study the clinical and psychopathological features of mental disorders in patients with acute AAD poisoning as a result of suicidal acts.

MATERIAL AND METHODS

We carried out an analysis of the psychopathological examination of 122 patients aged 15–93 years with AAD poisoning for the purpose of suicide, who were treated in the Department of Acute Poisoning and Somatopsychiatric Disorders of the N.V. Sklifosovsky Research Institute for Emergency Medicine in the period 2018–2021. Of these, data of 62 patients (50.8%) obtained by random sampling from the EMIAS database were used retrospectively. In other cases, the examination of patients was prospective. During their hospital stay, the clinical and psychopathological method was repeatedly used to examine the patients. The vast majority (88 patients; 72.1%) were aged from 15 to 59 years, of which more than a third (34%) were aged 40–49 years, and 34 victims (27.9%) were over 60 years old. Women predominated in all age groups, their share was 73.8%.

RESULTS AND DISCUSSION

The analysis of the results obtained from examining this group of patients showed that 65.6% of 122 patients with intentional poisoning by AAD had anxiety and depressive disorders as part of the reaction to stress and deadaptation (F43.20–43.25) according to ICD-10 (1998). Of these, in 52.5%, reactive depression developed against the background of psychopathic personality disorder with a predominance of hysterical, anancastic and excitable range, and in 25% - against the background of an organic brain disease of vascular origin. 19.7% of patients had endogenous mental pathology, of which 13.1% suffered from endogenous depression (F32–F34), 6.6% - from depressive and delusional states of schizophrenia (F20). Organic personality, affective psychotic and delusional disorders according to ICD-10 (F06–F07) were diagnosed in 14.7% of victims. At the time of self-poisoning, 35.2% of patients were intoxicated. 12.3% of patients suffered from chronic alcoholism, of which in 66.7% the somatogenic period of AAD poisoning was complicated by severe alcohol withdrawal syndrome with the development of alcoholic delirium.

10.6% of elderly and senile patients had transient episodes of confusion with false recognitions, delusional interpretation of the environment and motor restlessness.

More than half of the patients - 59% - used β-blockers in various forms (mono-, and combined poisoning) for the purpose of self-poisoning, which, as mentioned above, increase the risk of developing depressive conditions and suicide. Taking calcium channel antagonists for suicidal purposes was typical for 30.3% of patients, and angiotensin-converting enzyme inhibitors - for 10.7%. When comparing subgroups of patients using AAD with different mechanisms of action according to sociodemographic characteristics, and clinical and psychopathological features, no statistically significant differences were found.

Suicidal attempts with AAD poisoning in 70.5% of patients were preceded by psychotraumatic situations, the most frequent of which were quarrels and conflicts with family members - 50%; disappointment in relationships and separation from the partner - 22.1%; social “abandonment”, deterioration of health and problems with self-care among elderly and senile people - 15.1%; significant financial problems - 8.1%; death of the loved one - 4.7%. In 16.4% of cases, the suicide attempt with AAD poisoning was clearly demonstrative in nature. For delusional reasons, AAD self-poisoning was committed by 9% of patients with psychotic depression as part of schizophrenia and organic brain disease. The overwhelming majority of patients with AAD self-poisoning - 91.8% - made a primary suicide attempt.

Concomitant somatic pathology was noted in 45.9% of patients, of which 87.5% of patients suffered from cardiovascular diseases (hypertension, cerebral atherosclerosis, history of cerebrovascular accidents, coronary heart disease). Along with this, the following disorders were found: diabetes mellitus, stomach and duodenal ulcers, bronchial asthma. In some cases, they were combined with cardiovascular pathology.

When analyzing anamnestic information in 36% of patients with AAD self-poisoning against the background of arterial hypertension and coronary heart disease with a long-term course, it was established that long before the suicide attempt by poisoning, manifestations of emotionally labile, cerebro-asthenic and anxiety-depressive syndromes were noted. They were characterized by the development of asthenic-depressive and reactive anxiety-depressive states with a dysthymic tinge, leading to short-term, inadequately strong emotional reactions in relation to the stimuli that caused them, accompanied by suicidal statements. There was a sharpening or emergence of pathocharacterological and/or neurotic personality traits and the development of protracted depressive states. Noteworthy is the fact that 8.2% of patients had indications in their medical documentation of previous suicide attempts by poisoning. Features of the medical history of the examined patients confirm the presence of a connection between depressive states, suicidal behavior and diseases of the circulatory system, which is consistent with literature data on this problem. Thus, in the suicidological aspect, our attention was drawn to the work of domestic psychiatrists [13], which showed that every tenth patient hospitalized in a cardiology hospital with chronic coronary heart disease has depression, anti-vital experiences, passive or active suicidal thoughts. Considering the fact that depression and cardiovascular disease are in a reciprocal relationship [14], when each of these diseases aggravates the course of the other, we think it is important to emphasize the need for a more attentive attitude to changes in behavior, appearance, and the personal life of patients with cardiovascular pathology and mood disorders, which may indicate an increased risk of suicide. This, in turn, will help relatives, therapists and cardiologists in a timely manner to attract specialists in the field of mental health (psychiatrists, psychotherapists, psychologists) when providing medical care to this contingent of patients, both receiving outpatient and inpatient treatment. It should be noted that only in 18.2% of the studied cases, patients with intentional AAD poisoning and concomitant cardiovascular pathology, with a history of anxiety-depressive symptoms, had previously sought help from psychiatrists or psychotherapists.

In order to clarify the understanding of the mechanisms of suicidal behavior in patients with AAD self-poisoning, and the development of measures to prevent repeated suicidal acts using the clinical and psychopathological method, the analysis of post-suicidal states in victims was carried out.

The relevance of the suicidal conflict for the patient, the attitude of suicidal people towards the completed suicide attempt, and the presence of suicidal manifestations in the post-suicidal period have traditionally been considered as characteristics of the post-suicidal period [15]. The assessment of the patients' attitudes towards suicide attempts was performed in the early post-suicidal period, that is, during the first 2–10 days after self-poisoning, depending on the severity of the somatic condition of the patients. Based on the identified differences in the course of the early post-suicidal state, all the patients with intentional AAD self-poisoning were divided into 4 groups: the 1st group included patients with a critical type of post-suicide (54.9%), the 2nd - with manipulative (16.4%), the 3rd group included patients with a fixed type of post-suicide (14.8%), and 4th - with an unspecified type of early post-suicide (13.9%).

In patients of Group 1, the attitude towards the suicide attempt in the early post-suicide period was clearly negative: they presented complaints with asthenic content, describing persistent symptoms of mild depression, willingly reported the reasons for suicide, sought help and sympathy, actively regretting the suicide attempt. A loss of relevance of the suicidal conflict and tension, as well as a significant decrease in the depth or reduction of

depressive symptoms were noted. The patients complained of feeling shame for the suicidal act and fear of the possibility of death as a result of poisoning, and were fixated on their somatic condition. The critical type of post-suicidal states - the most common among the studied cohort of patients - was observed in victims with psychogenically provoked anxiety-depressive symptoms as part of adjustment disorder and cyclothymia, including in patients with comorbid cardiovascular somatic pathology. The suicidal act in the form of AAD poisoning in patients of Group 1 led to an effect that terminated depressive symptoms, the emergence of a critical attitude towards the act and an understanding of the real situation, which allowed psychiatrists to assess the risk of repeated suicide in the near future as minimal. Many psychiatrists pointed out in their works the low probability of repeated suicide in patients with the critical type of post-suicidal conditions [16–18].

Patients of Group 2 with the manipulative type of post-suicidal states were characterized by a distinctly rent-seeking attitude towards self-poisoning. Suicide victims tried to extract some benefit for themselves from the very fact of the suicide attempt or its consequences, to influence the behavior of people significant to them, using overt or disguised suicidal blackmail. In half of the cases, they demonstrated intact suicidal thoughts, which were disharmonious with the desire to communicate with others, the absence of signs of positive (sadness, anxiety) and negative (apathy, depersonalization) affectivity, as well as somatic signs of depression. The group with the manipulative type of post-suicide consisted of patients with anxiety-depressive states due to personality disorders and organic mental pathology.

The most dangerous type of the early post-suicidal state in terms of repeated suicide, the suicidal-fixed type, was observed in patients of Group 3. They retained true suicidal thoughts and had a stable positive attitude toward the suicide attempt with regret that they “did not complete their plan”. These were patients with endogenous depression as part of affective pathology, schizophrenia and organic brain disease.

In patients of Group 4, it was difficult to qualify the type of post-suicide due to vague and contradictory data. Of these, 7.4% of the patients had amnesia at the time of the suicide attempt due to the development of exogenous mental disorders, 6.6% of the patients tried to hide the very fact of the suicide attempt, passing it off as an accident. According to medical documentation, the patients with intentional AAD self-poisoning of Group 4 were diagnosed with personality disorders and psychotic states as part of an organic brain disease, endogenous mental pathology (pseudopsychopathic schizophrenia).

No repeated suicide attempts were observed in the early post-suicide period among the representatives of the study population.

Regardless of the type of early post-suicide, all the patients with intentional AAD poisoning were in the hospital under the dynamic supervision of the psychiatrist, received psychotherapeutic assistance and psychopharmacological therapy, since the presence of any suicidal attempt in history, even of the blackmail-demonstrative nature, is one of the most important factors that increases the risk of repeated suicidal acts in the future [19, 20].

The psychopharmacological method of therapy was used after the completion of detoxification measures and stabilization of the somatic condition of the victims. For the critical type of post-suicide, psychiatric/psychotherapeutic assistance was limited to rational psychotherapy and symptomatic psychopharmacotherapy with small doses of tranquilizers; for the manipulative one it included combined psychopharmacotherapy with tranquilizers, mood stabilizers and small doses of atypical neuroleptics in combination with a complex of psychotherapeutic measures in the form of influencing the patient’s personality in order to develop a negative attitude of the victim towards suicide by destroying the response pattern that in the future could lead to repeated suicide attempts. The presence of the suicidal-fixed type of post-suicidal conditions served as a direct indication for the application of strict supervision measures in relation to the patient with the mandatory prescription of antidepressants and antipsychotics in medium doses.

The choice of the psychopharmacological drug, its doses and combinations was individualized, and depended not only on the leading psychopathological syndrome, the severity of psychomotor agitation, the depth of affective disorders, types of suicidal behavior and post-suicidal states, but also on the severity of the somatic condition of the patients, caused both by the chemical injury itself, and by the presence of chronic somatic pathology. Psychopharmacotherapy was carried out according to the principle of minimal sufficiency. The drugs of choice in the treatment of the patients with AAD self-poisoning were tranquilizers and (or) atypical antipsychotics in small and medium doses, and new generation thymoleptics.

The majority - 89.3% - of patients were discharged home under dynamic or advisory supervision of outpatient psychiatric care specialists with recommendations for maintenance psychopharmacotherapy. Only 10.7% of patients with intentional AAD poisoning were transferred to psychiatric and crisis hospitals due to the persistence of a high suicidal risk after stabilization of their somatic condition under observation and treatment by a psychiatrist. This transfer was needed by the patients with the suicidal-fixed type of early post-suicide in the clinical picture of severe endogenous depression, exacerbation of productive symptoms in schizophrenia and psychopathy in the decompensation stage with a history of repeated suicide attempts.

CONCLUSION

The study made it possible to obtain information about the clinical features and psychopathology of mental disorders in patients with intentional poisoning by antihypertensive and antiarrhythmic drugs for the purpose of suicide, including clarifying the typology of early post-suicidal states in this group of patients, and determining approaches to the tactics of their treatment. The results of the study complement the existing understanding of the patterns of suicidal behavior in patients with self-poisoning, which will improve approaches to the prevention of suicide by drug poisoning.

FINDINGS

1. It was established that mental disorders in patients with poisoning by antihypertensive and antiarrhythmic drugs as a result of suicidal acts are characterized by clinical and nosological heterogeneity: among the suicide victims, we identified individuals with reactive states associated with stress (65.6%), organic (14.7%) and endogenous mental illnesses (19.7%), both affective (13.1%) and schizophrenic (6.6%) range.
2. In patients with AAD poisoning, according to the ICD-10 classification, anxiety-depressive, psychogenically provoked conditions within the framework of adjustment disorder (F43.20–43.25) prevail (65.6%).
3. It was revealed that in 52.5% of cases, the background for the development of short-term depressive reactions with the suicide attempt by AAD poisoning was premorbid/acquired neurotic or psychopathic personality disorders, including of organic etiology.
4. Comorbid somatic pathology was identified in 45.9% of patients with suicidal attempts by AAD poisoning, and was predominantly (87.5% of cases) represented by cardiovascular diseases.
5. Typological variants of early post-suicidal states in victims of intentional poisoning by drugs acting on the cardiovascular system have been identified: the critical (54.9%), manipulative (16.4%), fixed (14.8%), and unspecified (13.9%) types of post-suicide, and their significance for assessing repeated suicide risk.

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Received on 19/12/2022
Review completed on 22/09/2023
Accepted on 26/09/2023