

*Originalni članci/
Original articles*

ACUTE EXOGENOUS POISONING IN
PATIENTS WITH PSYCHIATRIC DISORDERS

AKUTNA TROVANJA BOLESNIKA SA
PSIHIJATRIJSKIM POREMEĆAJIMA

Correspondence to:

Anelia Loukova, M.D., PhD

UMBALSM „Pirogov”

Totleben 21

1606 Sofia, Bulgaria

E-mail: aloukova@gmail.com

Julia Radenkova-Saeva¹, Anelia Loukova¹,

Christo Tsekov²

¹ Toxicology Clinic, Emergency University Hospital „N. I. Pirogov”,
Sofia, Bulgaria

² Division of Surgery

Key words

acute exogenous poisoning,
suicide attempt, self-poisoning,
psychiatric disorders

Ključne reči

akutno trovanje, pokušaj samoubistva,
samotrovanje, psihijatrijski poremećaj

Abstract

Objective: To present the results of an assessment of the demographics, psychological characteristics and substances involved of persons with acute exogenous poisoning admitted to our toxicological department for 1 year period. **Methods:** The study includes 257 patients with acute exogenous intoxication, hospitalized in the Toxicology Clinic, Department for adults, Emergency University Hospital „N.I.Pirogov”, Sofia, Bulgaria for the period 01.01.2013 – 31.12.2013. Demographic information and clinical variables such as gender, age, occupation, alcohol co-ingestion, living with a family member, numbers of previous suicide attempts, and underlying psychotic disorders were evaluated. Each patient was assessed by a consultant psychiatrist performing a psychiatric interview leading to a diagnosis according to DSM-IV-TR criteria. **Results:** 257 patients between the ages of 18 and 90 with acute exogenous poisoning have been observed. 86 (33.46%) were male and 171 (66.54%) female. 186 cases (72.37%) were intentional - a result of a suicide attempt, 71 (27.63 %) were due to an accident. Medicines were the leading cause of self-poisoning. A psychiatric history was known in 104 (55.91%) of suicide attempters, as depressive disorders, bipolar disorders, anxiety disorders, schizophrenia. Alcohol dependence was registered in 38 subjects (14.79%); alcohol withdrawal delirium in 4 (1.55 %); other substance - related disorder in 15 (5.84%); personality disorders in 2 (0.78%); cognitive disorders in 12 (4.67 %). **Conclusion:** There is a significant quantity of persons with attempted suicides by self-poisoning and mental disease. Patients should be offered interventions according to their specific problems.

INTRODUCTION

Mental health problems are a major cause of long-term stress and disability. About one fourth of the people in the European Region experience some type of mental health problem during their lives (1).

Suicide is a leading cause of death across the world and is often carried out as a result of despair, the cause of which is frequently attributed to a mental disorder such as depression, bipolar disorder, schizophrenia, borderline personality disorder (2,3) alcoholism or drug abuse (4,5), as well as stress factors such as financial difficulty, troubles with interpersonal relationships, and bullying (6).

Several studies found that mood disorders, followed by disorders due to substance abuse, are the psychiatric diagnoses most frequently associated with suicidal and para-sui-

cidal behaviours. Patients with primarily psychiatric complaints commonly present to emergency departments (2, 7, 8, 9, 10).

Self-poisoning in adults is an important public health problem across the world.

Deliberate self-poisoning accounts for 10% of acute medical presentations to hospital, and the rate of occurrence of self-poisoning is rising (5, 11, 12, 13,14).

Among various suicide methods, deliberate self-poisoning is typically classified as a low-lethality method, but the majority of self-harm episodes involve poisoning (10, 13, 15, 16,17).

At least half of the patients making suicidal gestures do so using prescription drugs. The most frequently involved are psychotropic medications, which are used in 80% of the cases of fatal deliberate self-poisoning and 68% of parasuicides (11,18,19).

Deliberate overdose carries a risk of significant morbidity and mortality, depending on the toxicity of the relevant drugs and the quantity ingested.

Between 3% and 10% of self-poisoning patients eventually kill themselves and up to half of suicide victims have a history of previous deliberate self-harm (18,15,19).

Many patient consultations are common to psychiatrists and medical toxicologists, including intentional drug overdoses and adverse reactions to psychotropic medications.

OBJECTIVE

To present the results of an assessment of the demographics, psychological characteristics and substances involved of persons with acute exogenous poisoning admitted to our toxicological department for 1 year period.

METHODS

The study includes 257 patients with acute exogenous intoxication, hospitalized in the Toxicology Clinic, Department for adults, Emergency University Hospital „Pirogov“, Sofia, Bulgaria for the period 01.01.2013 – 31.12.2013.

Demographic information and clinical variables such as gender, age, occupation, alcohol co-ingestion, living with a family member, numbers of previous suicide attempts, and underlying psychotic disorders were evaluated.

Each patient was assessed by a consultant psychiatrist performing a psychiatric interview leading to a diagnosis according to DSM-IV-TR criteria (29).

Various psychological tests as Questionnaire for assessment of suicidal risk; The Hamilton Rating Scale for Depression; The Mini Mental State Examination were applied.

RESULTS

257 patients between the ages of 18 and 90 with acute exogenous poisoning have been observed. 86 – (33.46%) were male and 171 (66.54%) female.

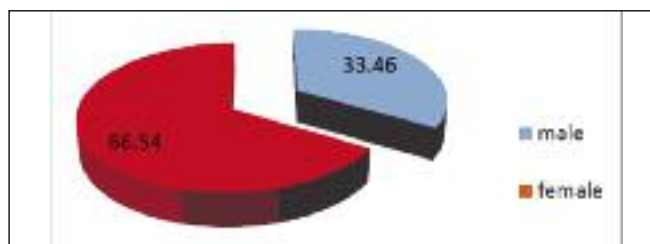


Fig. 1 Distribution by gender (relative share)

A majority of the patients in our study (145 subjects, 56.42%) combined two or more drugs, or alcohol, 112 (43.58 %) were with monotoxic intoxications.

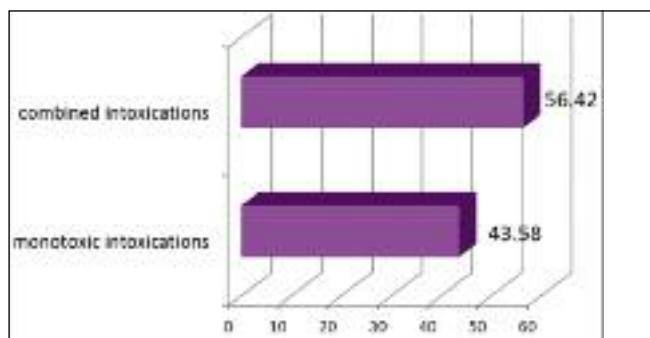


Fig. 2 Distribution according to type of intoxication (relative share)

186 cases (72.37%) were intentional - a result of a suicide attempt (deliberate self-poisoning), 71 (27.63 %) were due to an accident.

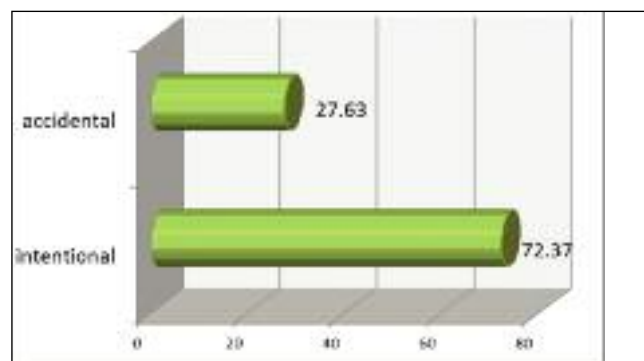


Fig. 3 Distribution according to reason for poisoning (relative share)

Furthermore, 12 (6.45 %) of the cases had a history of previous parasuicidal episodes, thus confirming the substantial to repeat such gestures.

Medicines were the leading cause of self-poisoning. 178 patients (69.3%) had taken various medicines. 92 (35.8 %) of the patients were intoxicated by hypnotics (benzodiazepines were the most frequently used drugs), neuroleptics, atypical antipsychotics, antiepileptics, antidepressants, 44 (17.12 %) - by cardiovascular medicines, 42 (16.34 %) - by other medicines - NSAIDs, antihyperglycaemics, antibiotics, etc.; In 20 (7.78 %) other patients we documented different domestic products, pesticides etc.; in 44 (17.12 %) – alcohol; in 15 (5.83 %) – illegal psychoactive substances.

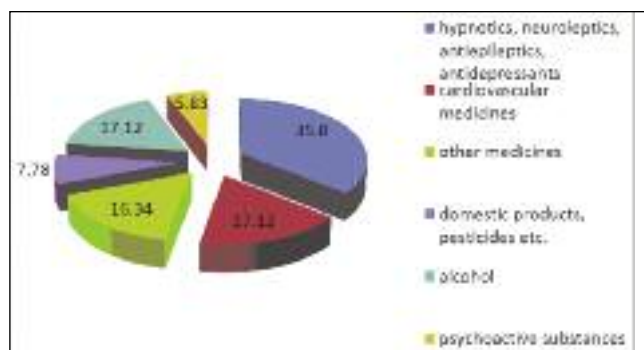


Fig. 4 Distribution of poisoning according to type of xenobiotics (relative share)

The most important motives for suicide attempt in 58 (31.18%) of the patients with deliberate self-poisoning were existential crisis or severe physical illness (cardiovascular disturbances, oncological diseases, acquired immunodeficiency, diabetes mellitus), as well as conflicts with parents or husband / wife, separation problems, loneliness.

The majority (55.91%) of our patients had a history of a previously diagnosed psychiatric disorder. A psychiatric history was known in 104 (55.91%) suicide attempters.

Recurrent depressive disorder – in 10 of them (5.38%); depressive episode – in 28 (15.05 %); bipolar affective disorders – 19 (19.21%); anxiety disorders – 22 (11.83 %); schizophrenia - 25 (13.44%). Alcohol dependence was registered in 38 subjects (14.79%); withdrawal state with delirium in 4(1.55 %); psychoactive substances use disorders in 15 (5.84%); personality disorders in 2 (0.78%); organic mental disorders in 12 (4.67 %).

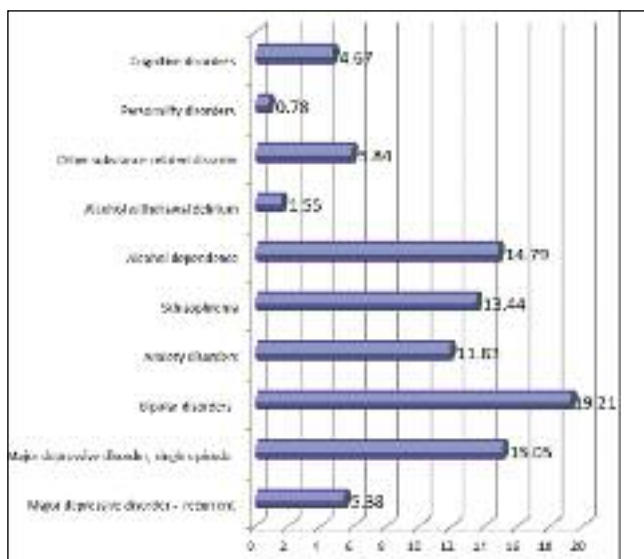


Fig. 5 Distribution according to type of mental disorders (relative share)

DISCUSSION

Women prevail of our study, which is in line with the findings of numerous studies confirming the prevalence of females in the ambit of parasuicidal behaviours (21, 22). Among deliberate self-poisoning patients, female patients are more common but male patients show more severe poisoning (23, 3, 22). Female prevailed over the male, but males tend to make more severe attempts with the intention of completing it. Though depression was a major culprit, social or family problems were found to be the most frequent cause of suicide attempts (3). A number of factors may have contributed to these gender differences (24). First, men who are depressed are more likely to have comorbid alcohol and substance abuse problems, compared with women, which places men at higher risk. Second, unlike men, who are less likely to seek and accept help or treatment, women are less impulsive, more socially embedded, and more willing to seek help (8, 24).

A majority of the patients in our study - 56.42% combine two or more drugs, or alcohol, probably seeking a cumulative effect. The use of more than one substance was common in deliberate self-poisoning (14).

We found that the majority of cases - 72.37% were intentional, a result of a suicide attempt - deliberate self-poisoning, 27.63 % were due to an accident.

Deliberate self-poisoning variably accounts for 0.5 to 2% of all admissions to

Emergency Departments (25, 26). Patients may have associated complex medical and mental health problems and the deliberate self-poisoning episodes may result in a high degree of resource use and consequently cost to the health service and the community (17).

Furthermore, 6.45 % of our patients had a history of previous parasuicidal episodes, thus confirming the substantial to repeat such gestures (26).

The presented our data, concerning *distribution of poisoning according to type of xenobiotics*, agree in indicating that the drugs most frequently used for parasuicidal acts are those used to treat psychiatric disorders (7, 15, 27). The benzodiazepines were the most frequently used drugs. These findings confirm the previously observed large-scale use of the benzodiazepines for parasuicidal purposes (11, 12).

Over the last few decades, there has been a considerable change in the types of drugs more frequently responsible for self-poisoning: barbiturates were the principal cause in the 1960s but, since the 1980s, the benzodiazepines have been the most frequently involved (13, 28).

There are numerous published data showing that the presence of clinically relevant organic diseases is associated with a high parasuicidal and suicidal risk De Leo et al.(8) have pointed out that about half of the people who commit parasuicidal acts have a chronic organic disease. Forty-five percent of the subjects with a chronic disease consider it one of the factors precipitating their parasuicidal gesture, and 22% the determining factor (2, 7, 8, 9, 18). In line with these observations, our results indicate that many of the subjects making parasuicidal gestures had severe physical disease, debilitating surgical diseases or other existential crisis as conflicts with parents or husband / wife, separation problems, loneliness.

The majority (55.91%) of our patients - suicide attempters had a history of a previously diagnosed psychiatric disorder. These findings are in line with the published data, according to which 70–90% of the subjects making parasuicidal gestures have a history of repeated contacts with psychiatric services.

Much of the published data agree that schizophrenia is associated with a high risk of suicide (9). 13.44% of the patients in our sample were schizophrenic.

About 40% of the subjects being treated for a disorder due to alcohol dependence have a history of parasuicidal episodes, and about 5% of the subjects with such a disorder commit suicide (10, 29). Our results seem to be consistent with those of published studies, showing a clear association between alcohol dependence and parasuicidal and suicidal behaviours (5, 30).

Furthermore, various data indicate that substance abuse is also related to a high incidence of suicidal and parasuicidal behaviours (31). We found that 5.83% of the patients in our sample have taken illegal psychoactive substances. Like alcohol, substances of abuse can facilitate parasuicidal gestures in various ways: they can be used because of their own self-injuring effects, as a means of self-disinhibition, or in order to increase the lethal nature of pharmaceutical drugs and alcohol.

CONCLUSION

There is a significant quantity of poisoned patients with mental disease. Our study indicated that the patients with parasuicide poisoning have a number of characteristic features, including the presence of psychiatric disorders, organic diseases, alcohol or drug dependence/abuse, and significant psycho-relational disturbances. We found that the benzodiazepines are the most frequently used by people making suicide attempt.

Patients engaging in deliberate self-poisoning often repeat the acts and are at increased risk of dying by suicide. It is therefore necessary to establish a therapeutic programme for such patients that covers both the acute situation and long - term prevention. Patients should be offered interventions according to their specific problems. The use of drugs associated with significant toxicity should be avoided in older patients at risk of self-harm.

Sažetak

Cilj ovog rada bio je da prikaže jednogodišnje rezultate uticaja demografskih i psiholoških karakteristika, kao i supstanci koje su bile uzrok akutnih trovanja bolesnika primljenih u toksikološku jedinicu. **Metode:** U ispitivanje je uključeno 257 akutno otrovanih bolesnika, hospitalizovanih u Toksikološkoj klinici univerzitetske bolnice „N.I.Pirogov”, Sofija, Bugarska u periodu od 01.01.2013 – 31.12.2013.godine. Procenjivani su demografski i klinički podaci kao što su pol, godine života, zanimanje, koingestija alkohola, život u zajednici, broj prethodnih pokušaja samoubistva kao i osnovni psihički poremećaj. Svaki bolesnik bio je pregledan od strane psihijatra korišćenjem razgovora za postavljanje dijagnoze u skladu sa DSM-IV-TR kriterijumima. **Rezultati:** Posmatrano je 257 akutno otrovanih bolesnika između 18 i 90 godina života. Od ukupnog broja 86 bolesnika (33.46%) bili su muškarci, a 171 (66.54%) bile su žene. U 186 slučajeva (72.37%) kao razlog trovanja navodi se pokušaj samoubistva dok se u 71 slučaju (27.63 %) radilo o nenamernom trovanju. Vodeći uzrok samotrovanja bili su lekovi. U 104 slučaja pokušaja samoubistva(55.91%) bili su bolesnici sa poznatom istorijom psihijatrijskih oboljenja kao što su depresija, bipolarni poremećaj, šizofrenija. Zavisnost od alkohola registrovana je kod 38 (14.79%); alkoholni delirijum kod 4 (1.55 %); poremećaji u vezi sa drugim supstancama kod 15(5.84%); poremećaj ličnosti kod 2 (0.78%) i kognitivni poremećaji kod 12 bolesnika (4.67%)

Zaključak: Postoji značajan broj osoba sa psihijatrijskim poremećajem koje su pokušale samoubistvo. Pacijentima treba ponuditi pomoć u skladu sa njihovim specifičnim problemima.

REFERENCES

- Zsuzsanna J, Tsouros Agis. Health 2020 – achieving health and development in today's Europe, Bulgarian journal of public health Vol.6 №2, 2014, 3-15.
- Paris, J (June 2002). "Chronic suicidality among patients with borderline personality disorder". Psychiatric services (Washington, D.C.) 53 (6): 738–42.
- Radenkova-Saeva JV, Vanev PI., Suicidal Self-Poisoning – One Year Epidemiological Study, Clinical toxicology, 47, 2009, №5, 505.
- Hawton K, Fagg J, Mc Keeton SP: Alcoholism, alcohol and attempted suicide, Alcohol Alcohol 1989, 24:3-9.
- Hawton K, van Heeringen K (April 2009). "Suicide". Lancet 373 (9672): 1372–81.
- Bottino, SM; Bottino, CM; Regina, CG; Correia, AV; Ribeiro, WS (March 2015). "Cyberbullying and adolescent mental health: systematic review", Cadernos de saude publica 31 (3): 463–75.
- Bay YM, Liu CY, Lin CC: Risk factors for parasuicide among psychiatric inpatients, Psychiatric Serv 1997, 48(9):1201-3
- Bland RC, Newman SC, Orn H. Help-seeking for psychiatric disorders. Can J Psychiatry, 1997; 42:935–42.
- Heila H, Isometsa ET, Henriksson MM, et al.: Suicide and schizophrenia: a nationwide psychological autopsy study on age and sex specific clinical characteristics of 92 suicide victims with schizophrenia. Am J Psychiatry. 1997 Sep; 154 (9):1235-42.
- Kessler RC, Borges G, Walters EE: Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Study, Arch Gen Psychiatry, 1999, 56:617-26.
- Alsen M, Ekedahl A, Lowenhielm P, et al.: Medicine self-poisoning and the sources of the drugs in Lund, Sweden. Acta Psychiatr Scand 1994, 89(4):255-61.
- Chan TY, Critchey JA, Chan MT, Yu CM: Drug overdose and other poisoning in Hong Kong- the Prince of Wales Hospital (Shatin) experience, Hum Exp Toxicol 1994, 13(7):512-5.
- Quigley N, Galloway R, Kelly C: Changes in the pattern of deliberate self-poisoning presenting at Craigavon Area Hospital: 1976, 1986 and 1991, Ulster Med J 1994, 63(2):155-61.
- Rahman A, C. Martin, A. Graudins, and R. Chapman, Deliberate Self-Poisoning Presenting to an Emergency Medicine Network in South-East Melbourne: A Descriptive Study, Emergency Medicine International, Volume 2014 (2014).
- Maris RW, Berman AL, Silverman MM: Comprehensive textbook of suicidology. New York: The Guilford Press; 2000.
- NHS Centre for Reviews and Dissemination, Deliberate self-harm. Eff Health Care Bull. 1998; 4:1–12.
- Sinclair J. M. A., A. Gray, and K. Hawton, "Systematic review of resource utilization in the hospital management of deliberate self-harm," Psychological Medicine, vol. 36, no. 12, pp. 1681–1693, 2006.
- De Leo D, Pavan L: Suicidio. In Trattato italiano di psichiatria. Edited by Cassano GB, Pancheri P, Pavan L. Milano: Masson; 1999:1217-39.
- Michel K, Waeber V, Valach L, Arestegui G, Spuhler T: A comparison of the drugs taken in fatal and nonfatal self-poisoning. Acta Psychiatr Scand 1994, 90(3):184-9.
- World Health Organization. The ICD-10 classification of mental and behavioural. Diagnostic criteria for research. Geneva: World Health Organization; 1992.
- Chen VC, Chou JY, Lai TJ, Lee CT, Suicide and unemployment rate in Taiwan, a population-based study, 1978–2006. Soc Psychiatry, Psychiatr. Epidemiol., 2010; 45:447–52.
- Yang CC, Wu JF, Ong HC, Hung SC, Kuo YP, Sa CH, et al., Taiwan National Poison Center: epidemiologic data 1985–1993. J Toxicol, Clin Toxicol. 1996; 34: 651–63.
- Buckley NA, Dawson AH, Whyte IM, Hazell P, Meza A, Britt H., An analysis of age and gender influences on the relative risk for suicide and psychotropic drug self-poisoning, Acta Psychiatr Scand. 1996 ; 93:168–71.
- Murphy GE. Why women are less likely than men to commit suicide. Compr Psychiatry. 1998; 39: 165–75.
- Routley V., K. Ashby, and J. Lough, "Adult poisoning overview—Victoria," Hazard, vol. 39, pp. 1–17, 1999.
- Taylor D. M., P. A. Cameron, and D. Eddy, "Recurrent overdose: patient characteristics, habits, and outcomes," Journal of Accident and Emergency Medicine, vol. 15, no. 4, pp. 257–261, 1998.
- Welch SS: A review of the literature on the epidemiology of parasuicide in the general population. Psychiatr Serv 2001, 52(3):368-75.
- Travaglia A: Benzodiazepine: il mito. In Intossicazioni volontarie e accidentali da psicofarmaci. Edited by Moranti C, Davanzo F. Torino: Centro Scientifico Editore; 2004:53-76.
- Rosow I, Amudsen A: Alcohol abuse and suicide: a 40 year prospective study of Norwegian conscripts. Addiction 1995, 90:685-91.
- Suokas J, Lonnqvist J: Suicide attempts in which alcohol is involved, Acta Psychiatr Scand 1995, 91:36-40.
- Roy A: Characteristics of cocaine-dependent patients who attempt suicide, Am J Psychiatry 2001, 158:1215-19.