

Unconsciousness in Patients with Suicidal Attempt History in Comparison with Others

Babak Mostafazadeh*, **Abbas Aghabiklooei****, **Afsharianshishvan Tahmineh*****,
*Loghman-Hakim Poison Hospital, Department of Forensic Medicine & Clinical Toxicology, Shahid Beheshti University, M.C. Tehran, Iran, **Department of Forensic Medicine & Clinical Toxicology, Iran University of Medical Sciences, ***Private Physician, Tehran, Iran.

Abstract

One of the limitations in management of patients suffering from decreased level of consciousness due to drug poisoning is the inability to interview the patient. The aim of the present study was to compare characteristics of the two subgroups of these patients; those who had a suicidal attempt history with others.

In this case-control study, 19 patients with suicidal attempt history and 66 patients without this history were selected among patients who were admitted for drug poisoning to Loghman hospital in Tehran, Iran, in April and May 2008. When they patients were admitted, all of them had decreased level of consciousness due to unknown drug poisoning. Demographic and poisoning characteristics, past medical history and substance use history of the patients were recorded.

Suicidal attempt history had a significant association with the type of drugs used that led to poisoning ($p=0.04$). Psychological disorder history ($p<0.01$), Ingested tablet counts ($p=0.020$), time interval between drug ingestion and emergency medical service arrival ($p=0.021$), history of psychological disorders ($p<0.001$), intentional self poisoning ($p=0.001$), level of unconsciousness ($p=0.046$), no improvement in level of consciousness after primary emergency care ($p=0.02$) and need for advance emergency care ($p=0.013$) were significantly higher in patients with a suicidal attempt history than others. There was no significant difference between the two groups in terms of age ($p>0.05$). Also suicide attempt history had no significant association with gender and history of illicit substance use ($p>0.05$). According to these findings, when dealing with patients suffering from decreased level of consciousness due to unknown drug poisoning, patients with suicidal attempt history need prominently more advanced care for treatment and recovery of consciousness level than patients with no such history. Therefore, paying attention to history of suicidal attempts in these patients can help medical professionals in determining more effective treatment options for them.

For Correspondence :

Dr. Abbas Aghabiklooei

Assistant Professor of Clinical Toxicology and Forensic Medicine

Keywords: Drug Poisoning, Consciousness, Suicidal Attempt, Intentional

Introduction

Among all causes of hospitalization, drug intoxication is one of the most frequent. Drug intoxication can be of an intentional or unintentional nature. Some studies have reported that patients who are admitted to hospitals for treatment of self-poisoning are a population with a greatly increased risk of committing parasuicides or completed suicides (1-4). Although, the rate of drug intoxication in different countries show significant difference (5,6), it has been reported a significant increase hospital admissions due to drug intoxication, in all across the world, during the recent decades (7-9).

Parasuicide behaviors have been explained as all non-fatal suicidal behaviors including attempted and failed suicides, regardless of the fact that they have an intentional nature (10). However, parasuicidal behavior is one of the most significant risk factors for death, considering the fact that 30–60% of such deaths are the outcome of repeated suicidal attempts (11, 12). The annual incidence of parasuicide has been estimated between 300 and 800/100,000 among individuals in Europe, aged over 15 years, with significant inter-country differences (13). While, some researchers have proposed that over 75% of non-fatal suicidal attempts are not incorporated in the official figures and statistics (14).

Although suicide is a worldwide problem (15), most empirical information about suicidal attempts have been assigned to western countries and In order to develop a generalizable theory, it is imperative to examine other cultures as well. In other sides, although some researchers believe that a previous suicide attempt increases the risk for completed suicide at last (1,16), and repeated suicidal attempts make an greater risk (17), very rare efforts have been made to describe how variables may change after a previous attempt, specifically related to future suicide attempts. The aim of the present study was to compare the characteristics of decreased level of consciousness due to unknown self-drug poisoning between patients with suicidal attempt history and others with no such history.

Methods

This was a case-control study. The participants were patients who had been referred to emergency ward by emergency medical service (EMS) and had been admitted to Loghman referral poisoning hospital due to decreased level of consciousness with unknown ingested drug poisoning in Tehran, Iran, in April and May 2008. The samples were divided to case and control groups with attention to history of suicidal attempts, patients with a suicidal attempt history (N=19) and patients without a suicidal attempt history (N=66).

The following data were recorded for all patients: age, gender, basic EMS visit information (vital signs, level of consciousness and time interval between drug ingestion and EMS arrival (EMS response time interval), past medical history (psychological disorders and substance abuse history), poisoning characteristics (drug groups, the route of drug use, tablet counts and intentional or

unintentional nature of drug poisoning), ICU admission requirement and primary treatment outcome (improved or unimproved consciousness). Drugs which led to poisoning were categorized to four groups: Illicit drugs (mainly opioids), Non-illicit opioid drug (Tramadol), Non-illicit opioid agonist-antagonist drug (Methadone) and Non-illicit/non-opioid drugs. Whereas, in Iran, Tramadol, as a non-illicit opioid drug, is an accessible opioid drug that is used commonly to mitigate pain and Methadone, as a non-illicit opioid agonist-antagonist drug, is used frequently in methadone maintenance therapy for substance abusers, and drug intoxication is also common with both of these drugs, therefore, they were considered as two separate groups, alongside the illicit and non-illicit/non-opioid drugs. Statistical analysis was done by software, SPSS for windows version 13. Quantitative variables described by using range and mean (standard deviation) indices, and qualitative variables by using prevalence tables. For comparison between the two groups, we used Chi-Square and Mann-Whitney U Test. A P value of less than 0.05 was considered to be significant.

Results

Out of the total population, 66 (78%) patients were male. The range and mean (SD) of the patients' age was 19-72 and 32.9 ± 9.4 years, respectively. The range of the number of ingested tablet among all patients was 10-70 and mean (SD) stood at 32 ± 13 .

Table 1 shows the drug type ingested by patients in each group. The most common cause of poisoning in patients with suicidal attempt history was non-illicit/non-opioid drugs (47%), whereas the patients in the other group were mainly poisoned due to use of illicit drugs (39%).

Table 1. Ingested drug types in patients with and without suicidal attempt history

		With suicidal attempt history (N=19)	Without suicidal attempt history (N=66)	P value
		Frequency (%)	Frequency (%)	
Drug groups	Illicit drugs	4 (21)	26 (39)	0.041
	Non-illicit opioid drug (Tramadol)	6 (32)	10 (15)	
	Non-illicit opioid agonist-antagonist drug (Methadone)	0 (0)	11 (13)	
	Non-illicit/non-opioid drugs	9 (47)	19 (29)	

Chi-Square Test

Table 2 presents a comparison of several variables between the two groups. There were no significant difference in age, gender, substance abuse history, MBP (Mean Blood Pressure), HR (Heart Rate), T (Temperature), RR (Respiratory Rate) between the patients in the groups ($p>0.05$). Ingested tablet counts ($p=0.020$), EMS response time interval ($p=0.021$), history of psychological disorders ($p<0.001$), intentional self poisoning ($p=0.001$), level of unconsciousness ($p=0.046$), no improvement in level of consciousness after primary emergency care ($p=0.02$) and need for advance emergency care ($p=0.013$) were significantly higher in patients with suicidal attempt history than patients in the other group.

Table 2. Comparison of various variables between patients with and without suicide history

	With suicidal attempt history (N=19)	Without suicidal attempt history (N=66)	
	Mean (SD)/ Frequency (%)	Mean (SD)/ Frequency (%)	
Sex (male)	14 (74)	52 (79)	0.638*
Psychological disorders history	19 (100)	14 (21)	<0.001*
History of illicit drugs use	8 (42)	40 (61)	0.152*
Intentional self poisoning	19 (100)	39 (59)	0.001*
Unconsciousness (lower)	11 (58)	53 (80)	0.046*
Need for advance emergency care	7 (37)	8 (12)	0.013*
Unimproved consciousness	10 (53)	17 (26)	0.027*
Age (years)	33.7 (10.1)	32.7 (9.2)	0.728**
MBP (mmHg)	78 (12)	83 (12)	0.168**
HR (ppm)	89 (20)	82 (20)	0.171**
T (°C)	37.0 (0.3)	37.0 (0.2)	0.808**
RR	12 (2)	12 (3)	0.424**
Ingested tablet counts	40 (14)	30 (12)	0.020**
Drug ingestion-EMS arrival time interval (hours)	4.1 (2.1)	2.8 (1.9)	0.024**

* Chi-Square Test, ** Mann-Whitney U Test;

MBP: Mean Blood Pressure, HR: Heart rates, T: Temperature, RR: Respiratory rates

Discussion

According to the findings of this study, the commonest drugs used by the patients that led to decreased levels of consciousness were non-illicit/non-opioid drugs in half of the patients with suicidal attempt history, whereas illicit drugs were the common drug used in more than one third of the patients without such a history. Not surprisingly, a positive history of psychological disorders and intentional poisoning were considerably higher in patients with suicidal attempt history than the other patients. However, positive history of suicidal attempt was associated with more severe and more resistant decreased levels of consciousness, higher need for advanced life supports, larger number of ingested tablets and higher EMS response time interval. There were no meaningful differences in age and sex between the two groups.

In agreement with the findings of the present study, previous studies have shown that suicidal attempts have multiple associated comorbidities, including mood disorders (18,19). In other sides, some markers such as tablet count and coma score have been defined as indicators of increased severity of self-poisoning episodes, poison exposure and the potential physical harm. For instance, it has been indicated that an increase in ingested dose of tablets was highly associated with worse subsequent outcomes in self drug poisoning patients (20).

In this study, women accounted for less than one third of samples in both groups, which is contradictory to the findings of several other studies that confirm the prevalence of females in the presentation of self-harm behaviors (21-24). Some of the differences can be traced in different characteristics of samples and type of suicidal gestures in various studies. Although, the higher rate of females to male have been shown in all type of suicidal attempts, this fact has also been demonstrated that females mostly do the less corporal impact self-harm gestures, regardless of whether the meaning is really suicidal or not (25,26). Whereas, our samples were recruited among patients who had decreased level of consciousness due to unknown drug poisoning and general conditions of them were critical, female may choose this high risk type of suicidal attempts less than other types. The smaller number of females in the present study in comparison with previous mentioned studies can be explained by these reasons. Although the findings of this study indicate that having a suicide attempt history for an individual is accompanied with higher rates of intentional drug poisoning than others, evidences of previous studies have shown different associations between future suicide attempts and a suicide attempt history. In accordance with the "trait" hypothesis, regardless of the fact that a previous suicidal attempt has been made or not, people are at an equal risk for a future suicide, whereas risk for the past and the future suicidal gestures is not constantly equal, according to the "crescendo" hypothesis, however, once a suicide attempt is made, the risk for future suicides becomes greater (27). Nevertheless, most of the researchers believed that following a suicidal attempt, the mechanisms that are normally present and active to prevent the individuals from making attempts become less effective because of habituation. Also, it has been demonstrated that the suicidal act itself might have negative effects on the individuals and their surrounding environment, which can advance future suicidal gestures (28). In contrast to patients without a suicide attempt, among which illicit drugs were the commonest causes of poisoning, non-illicit/non-opioid drugs was the commonest cause of poisoning in patients with a suicide attempt history. Common use of routine drugs as a suicide attempt tool has been

reported in previous studies as well. Previously, it has been shown that at least half of the self-poisoning individuals do so by using prescription drugs (29) and the drugs used to treat psychiatric disorders are the most frequently used drugs for suicidal attempts, too (26,30).

One the limitation of the present study is its small sample size. In addition, information pertaining to past medical history was obtained and completed from interviews with the patients. Therefore, recall bias can be another limitation. Among other weaknesses of this study are limited personal information about patients, lack of data on their socio-economic status and short-term follow-up of treatment results.

Conclusion

According to these findings, when dealing with patients suffering from decreased level of consciousness due to unknown drug poisoning, patients with suicidal attempt history need prominently more advanced care for treatment and recovery of consciousness level than patients with no such history. Therefore, paying attention to history of suicidal attempts in these patients can help medical professionals in determining more effective treatment options for them.

References

1. Alsen M, Ekedahl A, Lowenhielm P et al. Medicine self-poisoning and the sources of the drugs in Lund, Sweden. *Acta Psychiatr Scand* 1994; 89:255–61.
2. Batt A, Tron I, Depoivre C, Trehony A. Suicide attempts in Brittany (France). Distribution at the regional level. *Encephale*.1993; 19:619–25.
3. Bille-Brahe U. The role of sex and age in suicidal behaviour. *Acta Psychiatr Scand* 1993;71:21–7.
4. Buckley NA; Dawson AH; Whyte IM, et al. 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.
5. Carter G, Reith D.M. Whyte I.M. McPherson M. Repeated self-poisoning: increasing severity of self-harm as a predictor of subsequent suicide. *Br J Psychiatry* 2005; 186: 253-257.
6. De Leo D, Pavan L. Suicidio. In: Cassano GB, Pancheri P, Pavan L.(eds.). *Trattato italiano di psichiatria*. Milano: Masson; 1999; pp 1217–39.
7. Diekstra RF. Suicide and suicide attempts in the European Economic Community: an analysis of trends, with special emphasis upon trends among the young. *Suicide Life Threat Behav* 1985; 15:27–42.
8. Diekstra RF. The epidemiology of suicide and parasuicide. *Acta Psychiatr Scand Suppl*. 1993; 371:9–20.
9. Dimakopoulou A, Rontos I, Spyropoulos I, Papamichael E. Preliminary observations during the first year of running of Psychiatric Consultation Services in the Regional General Hospital of Nikea “Damon Vasiliou”. *Encephalos* 1989; 26:168–172.
10. Eagles, J. M., Klein, S., Gray, N. M., et al (2001) Role of psychiatrists in the prediction and prevention of suicide: a perspective from north-east Scotland. *Br J Psychiatry* 178, 494 -496.

11. Hawton K, Harriss L, Zahl DL. Deaths from all causes in a long-term follow-up study of 11,583 deliberate self-harm patients. *Psychological Medicine* 2006; 36(3): 397–405.
12. Hawton K, Fagg J. Suicide, and other causes of death, following attempted suicide. *British Journal of Psychiatry* 1988; 152: 359 -366.
13. Hawton K. Assessment of suicide risk. *Br J Psychiatry*. 1987; 150:145–53.
14. Hawton K., Zahl D. Weatherall R. Suicide following deliberate self-harm: long-term follow-up of patients who presented to a general hospital. *British Journal of Psychiatry*, 2003; 182: 537 -542.
15. Joiner TE, Conwell Y, Fitzpatrick KK, Witte TK, Schmidt NB, Berlim MT et al., Four studies on how past and current suicidality relate even when “everything but the kitchen sink” is covaried. *J Abnormal Psychology* 2005; 114(2): 291–303.
16. Kessel N. Self-poisoning. Part I. *Br Med J*. 1965; 2:1265–1270.
17. Krug JA, Mercy LL, Dahlberg AB, Zwi EG. The first world report on violence and health. *Lancet* 2002; 360 (5): 1083–1088.
18. Maris RW, Berman AL, Silverman MM. *Comprehensive textbook of suicidology*. New York: The Guilford Press; 2000.
19. Mauri MC, Cerveri G, Volonteri LS, Fiorentini A, Colasanti A, Manfré S, Borghini R, Pannacciulli E. Parasuicide and drug self-poisoning: analysis of the epidemiological and clinical variables of the patients admitted to the Poisoning Treatment Centre (CAV), Niguarda General Hospital, Milan. *Clin Pract Epidemiol Ment Health*. 2005; 1: 5.
20. Meehan PJ, Lamb JA, Saltzman LE, O’Carroll PW. Attempted suicide among young adults: progress toward a meaningful estimate of prevalence. *Am J Psychiatry* 1992; 149:41–4.
21. Owens D, Horrocks J, House A. Fatal and non-fatal repetition of self-harm: systematic review. *British Journal of Psychiatry* 2002; 181: 193 -199.
22. Powell J, Geddes J, Hawton K, et al. Suicide in psychiatric hospital in-patients: risk factors and their predictive power. *Br J Psychiatry* 2000; 176: 266 -272.
23. Roy A. Characteristics of cocaine-dependent patients who attempt suicide. *Am J Psychiatry*. 2001; 158:1215–19.
24. Rygnestad T, Hauge L. Epidemiological, social and psychiatric aspects in self-poisoned patients. A prospective, comparative study from Trondheim, Norway (1978–1987. *Soc Psychiatry Epidemiol* 1991; 26(2):53–62.
25. Sakinofsky, I. Repetition of suicidal behaviour. In *The International Handbook of Suicide and Attempted Suicide* (eds K. Hawton & K. Van Heeringen), Chichester: Wiley 2000; pp. 385 -404.
26. Stone IC. Observation and statistics relating to suicide weapons. *J Forensic Sci*. 1987; 32:711–6.
27. Tountas C, Sotiropoulos A, Skliros SA, Kotsini V, Peppas TA, Tamvakos E, Pappas S. Voluntary self-poisoning as a cause of admission to a tertiary hospital internal medicine clinic in Piraeus, Greece within a year. *BMC Psychiatry*. 2001; 1: 4.
28. Voyiaki, S, Efstratopoulos A. Drug intoxication aiming at suicide. Recent experience from an internal medicine clinic of a general hospital in Athens. *Archives of the Hellenic Medical Society*. 1996; 13(2):136–141.
29. Welch SS. A review of the literature on the epidemiology of parasuicide in the general population. *Psychiatr Serv*. 2001; 52:368–75.
30. Zahl DL, Hawton K. Repetition of deliberate self-harm and subsequent suicide risk: Long-term follow-up study of 11,583 patients. *B J Psychiatry* 2004; 185: 70–75.