Original Article

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Evaluation of Patients Admitted To Emergency Department Due To Drug-Related Suicide Attempt

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Abstract

Objective: Suicide is the self-injurious behavior that is intended to kill oneself and it is called as suicide attempt if not resulted with death. Although the ranking varies by countries, the drug-related suicide attempt is always in the top three methods. The aim of this study was to investigate the data of the patients admitted to emergency department (ED) due to drug-related suicide attempt.

Material and Methods: This is a retrospective, cross sectional, observational, single centered study that was conducted in a research hospital. Patients over 18 years of age admitted to ED with a drug-related suicide attempt between 01.01.2019 and 31.12.2019 were included. Age, gender, nationality, admission complaints, presence of psychiatric illness and medication usage history, drugs used for suicidal intervention, follow-up duration at ED, patient outcome, psychiatric consultation status at ED were checked.

Results: A total of 330 patients were included. Three fourth (74.8%) of the patients were female and median age was 31 (IQR 23 – 38). Ten (3%) patient were refugees. Only 51 (15.5%) of patients had a known history of psychiatric illness. Most commonly used drugs for suicidal intervention were paracetamol, NSAIDs (Non Steroid Anti-inflammatory Drugs), antibiotics and antidepressants. Suicide attempt with antipsychotic and antidepressant drugs were significantly higher at patients with positive psychiatric illness history. Median follow-up duration at ED was 375 min (IQR 221 - 642) and most of the patients (81.7%) were discharged. Number of patients consulted with psychiatrist was only 63 (19.1%).

Conclusion: Our study demonstrated that being female, young, being a migrant, having a psychiatric illness and being in the warmer months of the year were related with the increased suicide attempts. Parasetamol, NSAID and antibiotics were most commonly used drugs and suicide attempt with antidepressants and antipsychotic drugs were significantly higher in the presence of psychiatric illness history. Most of the time the clinical course of drug-related suicide attempt cases were benign and they were discharged after follow-up at ED. Frequency of consultation with a psychiatrist was very low. Suicide is a public health problem and it is estimated that an ED admission related to self-injury is the highest risk factor for a future completed suicide. Therefore, all patients admitted to ED due to suicide attempt must be consulted with the psychiatrist for further evaluation in terms of risk of future suicidal behavior and implementation of targeted treatment approaches.

Key words: Suicide, drug-related, toxicity

Özet

Amaç: Suisit kişinin kendini öldürmek amaçlı kendine zarar vermesi davranışıdır ve eğer ölümle sonuçlanmazsa buna suisit girişimi denir. Sıralama ülkeden ülkeye değişse de ilaçla intihar her zaman en sık kullanılan ilk üç yöntem arasındadır. Bu çalışmanın amacı acil servise (AS) ilaçla intihar girişimi nedeniyle başvurmuş hastaların verilerini incelemektir.

Gereç ve yöntem: Bu çalışma bir araştırma hastanesinde yapılmış retrospektif, kesitsel, gözlemsel, tek merkezli bir çalışmadır. 01.01.2019 ve 31.12.2019 tarihlerinde 18 yaş üstü ilaçla intihar girişimi nedeniyle acil servise başvuran hastalar dahil edilmiştir. Yaş, cinsiyet, başvuru şikayeti, psikiyatrik hastalık ve ilaç kullanım öyküsü, suisit amaçlı kullanılan ilaçlar, AS'de takip süresi, hasta sonlanımı, AS'de psikiyatri konsültasyonu istenip istenmediği incelenmiştir.

Bulgular: Toplam 330 hasta dahil edilmiştir. Hastaların dörtte üçü (74.8%) kadındır ve medyan yaş 31 (IQR 23 – 38)'dir. On (3%) hasta göçmendir. Hastaların sadece 51 (15.5%)'inde bilinen psikiyatrik hastalık öyküsü vardır. İntihar girişimi amaçlı en sık kullanılan ilaçlar parasetamol, NSAIDler (Non Steroid Anti-inflamatuar İlaçlar), antibiyotikler ve antidepresanlardır. Antidepresan ve antipsikotikler ile intihar girişimi psikiyatrik hastalık öyküsü pozitif olanlarda belirgin olarak yüksektir. AS'de medyan takip süresi 375 dkdır IQR 221 - 642) ve hastaların çoğu (81.7%) taburcu olmuştur. Psikiyatri ile konsülte edilen hasta sayısı sadece 63 (19.1%)'dür.

Sonuç: Çalışmamız kadın, genç, göçmen, psikiyatrik hastalık sahibi olmanın ve yılın sıcak aylarında olmanın artmış intihar girişimi ile ilgili olduğunu göstermiştir. Prasetamol, NSAID ve antibiyotikler en sık kullanılan ilaçlardır ve antidepresan ve antipsikotikler ile intihar girişimi psikiyatrik hastalık varlığında anlamlı olarak yüksektir. Çoğu zaman ilaçla intihar girişimi vakalarının klinik seyri benindir ve AS'deki takip sonrası taburcu edilmişlerdir. Psikiyatrist ile konsültasyon sıklığı çok düşüktür. Suisit bir halk sağlığı sorunudur ve AS'e kendine zarar verme nedenli başvuruların gelecekte tamamlanmış bir intihar için en yüksek risk faktörü olduğu tahmin edilmektedir. Bu yüzden AS'e intihar girişimi ile başvuran tüm hastaların gelecekteki intihar davranışı açısından risklerin değerlendirilmesi ve hedefe yönelik tedavi yaklaşımlarının uygulanması için psikiyatrist ile konsülte edilmeleri gerekir.

Anahtar kelimeler: Suisit, ilaç-ilişkili, toksisite, psikiyatri konsültasyonu

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Introduction

Suicide is the self-injurious behavior that is intended to kill oneself and it is called as suicide attempt if not resulted with death. World Health Organization (WHO) reported, one person die due to suicide every 40 seconds and suicide is the second leading cause of death among 15-29 year olds globally[1]. According to Turkey Statistical Institute (TUIK)'s data, the suicide rate in Turkey has increased compared to the beginning of the 2000s and has 3161 people committed suicide in 2018[2]. There are indications that for each adult who died by suicide there may have been more than 20 others attempting suicide[1]. So, considering those huge numbers, suicide is an undeniably important public health problem.

Methods used in suicide differ according to their lethality which is determined by the time span between the initiation of a suicidal act and expected death, and availability of medical aid [3]. Although the ranking varies by countries, the drug-related suicide attempt is always in the top three rows[4]. Recognition of frequently used medicines for suicidal interventions will help the physician to notice and better manage the clinical scenarios that may occur due to toxicity.

The aim of this study was to investigate the data of the patients admitted to emergency department (ED) due to drug-related suicide attempt in 2019 to identify the commonly used drug groups for suicidal interventions. Thus, it is aimed to increase awareness of physicians about toxicological findings that may develop at those patients.

Material and Methods

This is a retrospective, cross sectional, observational, single centered study that was conducted in a research hospital with the approval of the local Medicine Expertise Training Board. Patients over 18 years of age admitted to ED with a drug-related suicide attempt between 01.01.2019 and 31.12.2019 were included. Suicide attempts with any other method such as hanging, firearm etc. and accidental drug misuse were excluded.

Age, gender, nationality, admission complaints, presence of psychiatric illness and medication usage history, drugs used for suicidal intervention, follow-up duration at ED, patient outcome (discharge, admission to service, admission to intensive care unit (ICU)), psychiatric consultation status at ED were checked by using the data at patient files and hospital registration system.

Statistical Analyzes

The statistical analysis was performed using the Statistical Package for the Social Sciences version 22.0 (SPSS Inc., Chicago, IL, USA). After assessing normal distribution using the Kolmogorov-Smirnov test, all variables were described in terms of mean ± standard deviation or median and interquartile range (IQR) (25–%75) and the qualitative data were expressed as case number (n) and percentages (%). Categorical variables were analyzed using the Pearson chi-squared test. A p-value of <0.05 was considered to be statistically significant.

Results

Characteristics of 330 patients whose data were available and meeting the inclusion criteria were examined. Three fourth (74.8%) of the patients were female and median age was 31 (IQR 23 – 38). Ten (3%) patient were refugees. Only 51 (15.5%) of patients had a known history of psychiatric illness. Most of the suicide attempts were done in the summer (Table 1).

Table 1. Characteristics of drug-related suicide attempted patients

Variable	Number (freguency)
Gender	
Female	247 (74.8%)
Male	83 (25.2%)
Age	31 (IQR 23 – 38)
Nationalıty	
Turkish	320 (97%)
Others	10 (3%)
Presence of psychiatric illness history	
Not known	279 (84.5%)
Yes	51 (15.5)
Seasonal frequency of suicide attempts	
Winter	85 (25.8%)
Autumn	69 (21%)
Summer	110 (33.3%)
Spring	65 (19.8%)

Most commonly used drugs for suicidal intervention were paracetamol, NSAIDs (Non Steroid Anti-inflammatory Drugs), antibiotics and antidepressants. Suicide attempt with anti-diabetic and cardiovascular system drugs (such as beta blockers, antihypertensive drugs) were rare (Table 2). It was observed that most patients had multiple drug intake and frequently used drugs such as paracetamol and NSAIDs commonly involved in these combinations. SSRIs (Selective Serotonin Reuptake Inhibitors) were most commonly used antidepressant drugs for suicidal interventions. Also suicide attempt with antipsychotic and antidepressant drugs were significantly higher at patients with positive psychiatric illness history (p <.001 for all circumstances) (Table 3).

Median follow-up duration at ED was 375 min (IQR 221 - 642) and most of the patients (81.7%) were discharged.

Table 2. Drugs used for suicidal intervention

Drug group	n	%
Paracetamol	**64**	**19.4**
Paracetamol + NSAID	25	
Paracetamol + antibiotics	15	
Paracetamol + any other drugs	14	
NSAID	**89**	**27**
NSAID + antibiotics	27	
NSAID + any other drugs	51	
Antibiotics	**67**	**20.3**
Antibiotics + paracetamol + NSAID	7	
GIS drugs	**33**	**10**
Cardıovascular system drugs	**17**	**5.2**
Anti-diabetic drugs	**3**	**.9**
Vitamin and iron supplements	**25**	**7.6**
Antipsychotic drugs	**39**	**11.8**
Antidepressant drugs	**74**	**22.4**
Antidepressant + antipsychotic drugs	12	
Others	**142**	**43**

*Abbreviation: NSAID: non-steroid anti-inflammatory drug, n: number

Table 3. Relation between suicide intervention with antipsychotic and antidepressant drugs and presence of psychiatric illness history (as number and frequency)

Presence of psychiatric illness history	Suicide attempt with Antipsychotic	P value	Suicide attempt with Antidepressants	P value
Unknown	22 (7.9%)	**<.001**	47 (16.8%)	**<.001**
Yes	17 (33.3%)		26 (51%)	

Table 4. Variables related to ED process of the drug-related suicide attempt cases

Variable	Median (ınterquartile range 25 -75) or number (frequency)
Follow-up duration at ED	375 min (IQR 221 - 642)
Psychiatric consultation status	
Yes	63 (19.1%)
No	267 (80.9)
Outcome	
Discharged	266 (81.7%)
Service admission	17 (4.7%)
Intensive care unit admission	46 (13.7%)
Applied active charcoal	160 (48.5%)
Applied gastric lavage	18 (5.5%)
Period between the drug intake and ED application	96.5 min (IQR 60 – 180)

Seventeen (4.7%) patient admitted to service and 46 (13.7%) patient admitted to intensive care unit. Nearly half of the patients applied active charcoal but only 18 (5.5%) applied gastric lavage. We also analyzed the period between the drug intake and ED admission. Median time of this duration was 96.5 min (IQR 60 – 180). Number of patients consulted with psychiatrist was only 63 (19.1%) (Table 4).

Discussion

Life time prevalence of suicide attempts is 3% and admission of patients due to drug-related suicide attempt to the EDs is a common entity[5]. Studies demonstrated that in most countries, the risk of nonfatal suicidal behavior is higher among young people, women, and socially disadvantaged people[3]. At different studies about the drug-related suicide attempt from different parts of the Turkey, similarly with our results, more than 70% of the patients were female [6, 7]. Pereira et al mentioned about a new developmental phase called emerging adulthood in their study, at which young people gain important social and professional identities in matters such as marriage, financial independence from their parents and the formation of a family. It was emphasized that if the young adults could not cope with the problems they faced during this period they might consider suicide as a solution to these problems[8]. This may explain, as in our study, why suicide attempts are more common among young adults.

In our study ten patient were refugees. The incidence of psychiatric problems is quite high among refuges and there have been studies that reported high incidences of suicide and self-harm in this group which might be due to many reason such as experiencing severe trauma (like torture), as a consequence of the refugee process itself, or the stress of settling into a new culture [9]. Risk factors related to suicidal behaviors are very complex and seasonality and daylight exposure might have a potential role on this behavior. Agugliа et al. demonstrated that high-lethality suicide attempts peaked in the months with a higher sunlight exposure (June and July)[10]. Similarly, frequency of suicide attempts was higher in summer in our study.

Coherent with the literature because of being cheap and easily accessible, drugs most commonly used for suicide attempt were paracetamol, NSAIDs and antibiotics in our study[6]. Tandoğan et al. demonstrated that the amount of paracetamol that patient declared to intake and paracetamol blood levels were not correlated[11]. Therefore, it might be recommended to check blood paracetamol levels at every patient admitted to ED due to drug-intake. Our study demonstrated that 15.5% of our patients had a known psychiatric disease history and suicide attempt with antipsychotic and antidepressant drugs were significantly higher in those group. It can be estimated that these people attempted suicide with their own prescript drugs. It is known that past psychiatric history is a risk factor for suicide[12]. On the other hand the risk of suicidality posed by antidepressants remains in question. There is no clear evidence that treatment of depressed patients with antidepressant drugs increases the average risk of suicidality; however there may be an age-specific effect, such that antidepressants may raise the risk of suicide attempts or preparatory acts in patients aged 18 to 24 years during the first several weeks of treatment[13].

When these patients were evaluated by the toxicological point of view, it can be estimated that in most cases, poisoning progressed with mild clinical symptoms. Our data demonstrated most of the patients were discharged after an average of six hours follow-up. In our study less than half of the patients applied active charcoal and this number was less than that were in similar studies[7]. Number of gastric lavage applied patients were only 18. This might be due to duration of time between the drug intake and ED application which was longer than one hour. We also evaluated the psychiatric consultation status of patients and only one fifth of them were consulted with the psychiatrist. There are many factors increasing the risk of future suicidal behaviors such as previous suicide attempt, suicidal ideation, lethality of past attempts, hostility, subjective depressive symptoms, fewer reasons for living, comorbid borderline personality disorder, cigarette smoking, presence of family history of suicidal acts, past drug use and early parental separation[14]. Therefore, psychiatric consultation at ED is very important because better understanding of those may allow the identification of at-risk subjects and the implementation of targeted treatment approaches[15].

Conclusion

Our study demonstrated that being female, young, being a migrant, having a psychiatric illness and being in the warmer months of the year were related with the increased suicide attempts. Parasetamol, NSAID and antibiotics were most commonly used drugs and suicide attempt with antidepressants and antipsychotic drugs were significantly higher in the presence of psychiatric illness history. Most of the time the clinical course of drug-related suicide attempt cases were benign and they were discharged after follow-up at ED.

Frequency of consultation with a psychiatrist was very low. Suicide is a public health problem and it is estimated that an ED admission related to self-injury is the highest risk factor for a future completed suicide [15]. Therefore all patients admitted to ED due to suicide attempt must be consulted with the psychiatrist for further evaluation in terms of risk of future suicidal behavior and implementation of targeted treatment approaches.

References

1. World Health Organization. Programmes: Mental health. Available from: https://www.who.int/mental_health/prevention/suicide/suicideprevent/en/ Accessed 03 March 2020.
2. Türkiye İstatistik Kurumu: Temel İstatistikler, Nüfus ve Demografi, Hayati İstatistikler, İntihar sayısı ve kaba intihar hızı Avaliable from: http://tuik.gov.tr/UstMenu.do?metod=temelist Accesed 03 March 2020.
3. Zalar B, Kores Plesničar B, Zalar I, Mertik M. Suicide and Suicide Attempt Descriptors by Multimethod Approach. Psychiatr Danub. 2018;30(3):317-322.
4. Geyik FD, Töre Altun G, Çitak N, Akarsu Ayazoğlu T, Gül YG, Toptaş M. Evaluation of Patients Hospitalized in Intensive Care Unit Due to Drug-Related Suicide Attempt and Access to Drugs: A Single Center Prospective Study. Medical Bulletin of Haseki. 2014; 52(2): 111-115
5. Nock MK, Borges G, Bromet EJ, Alonso J, Angermeyer M, Beautrais A et al. Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. Br J Psychiatry. 2008;192(2):98-105.
6. Akça HŞ, Özdemir S, Kokulu K, Algın A, Eroğlu SE. Psychiatric Evaluation of Suicidal Drug Intake in the Emergency Department. Eurasian J Tox. 2019;1(3):91-96
7. Utlu SG. Demographic Analysis of Suicide Victims Presenting to The Emergency Department with Drug-induced Intoxication. Eurasian J Tox. 2019; 1 (1): 25-28
8. Pereira AS, Willhelm AR, Koller SH, Almeida RMM. Risk and protective factors for suicide attempt in emerging adulthood. Cien Saude Colet. 2018; 23(11): 3767-3777.
9. Yüzbaşıoğlu Y, Çıkrıkçı Işık G. Retrospective analysis of forensic cases in refugees admitted to emergency department. Am J Emerg Med. 2019;37(9):1691-1693.
10. Aguglia A, Serafini G, Solano P, Giacomini G, Conigliaro C, Salvi V et al. The role of seasonality and photoperiod on the lethality of suicide attempts: A case-control study. J Affect Disord. 2019;246:895-901.
11. Tandoğan M, Emektar E, Dağar S, YüzbaşıoğluY, Karaatlı RH, Çevik Y. Acil Servise Parasetamol İntoksikasyonu Nedeniyle Başvuran Hastaların Değerlendirilmesi. Eurasian J Tox. 2019; 1 (1): 11-14
12. Sawa M, Koishikawa H, Osaki Y. Risk Factors of a Suicide Reattempt by Seasonality and the Method of a Previous Suicide Attempt: A Cohort Study in a Japanese Primary Care Hospital. Suicide Life Threat Behav. 2017;47(6):688-695
13. Leon AC. The revised warning for antidepressants and suicidality: unveiling the black box of statistical analyses. Am J Psychiatry. 2007;164(12):1786-9.
14. Pawlak JM, Miechowicz I, Dmitrzak-Węglarz M, Szczepankiewicz A, Zaremba D, Kapelski P et al. Are suicide risk factors gender specific? Psychiatr Pol. 2018;52(1):21-32
15. Zeppegno P, Gramaglia C, Castello LM, Bert F, Gualano MR, Ressico F et al. Suicide attempts and emergency room psychiatric consultation. BMC Psychiatry. 2015;15:13.