

Research article

Voluntary self-poisoning as a cause of admission to a tertiary hospital internal medicine clinic in Piraeus, Greece within a year

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Abstract

Background: Out of 1705 patients hospitalised for various reasons in the 3rd Internal Medicine Department of the Regional General Hospital of Nikaea, in Piraeus, 146(8,5%) persons were admitted for drug intoxication between November 1999 and November 2000.

Methods: On average, these persons [male 50(34,2%) – female 96(65,8%)] were admitted to the hospital within 3.7 hours after taking the drug.

Results: The drugs that were more frequently taken, alone or in combination with other drugs, were sedatives (67.1%), aspirins and analgesics (mainly paracetamol) (43.5%). 38.3% of patients had a mental illness history, 31.5% were in need of psychiatric help and 45.2% had made a previous suicide attempt. No death occurred during the above period and the outcome of the patients' health was normal. After mental state examination, the mental illnesses diagnosed were depression (20.96%), psychosis (15.32%), dysthymic disorder (16,2%), anxiety disorder (22.58%) and personality disorder (8.87%).

Conclusions: Self-poisoning remains a crucial problem. The use of paracetamol and sedatives are particularly important in the population studied. Interpersonal psychiatric therapy may be a valuable treatment after people tried to poison themselves.

Background

Voluntary drug intoxication is a major medical and social problem in developed countries today and the most common way of attempting suicide. In the course of time the rate of incidence has increased. Considering the social

aspect of the problem, we can see that the causes of this phenomenon are various.

The primary objective of the present paper is recording all cases of drug intoxication (defined as voluntary drug overdosing or taking of toxic substances voluntarily)

hospitalized in an internal medicine department within a year. Moreover, we have studied the incidence rate and the distribution in terms of sex, age, marital status, employment, the kind of toxic substance taken, the outcome and the causes. The secondary, equally important objective of the paper is estimating the psychiatric morbidity rate in patients with drug intoxication and examining the significance of psychiatric help for these patients. The highest rates for drug overdoses were found for female attempters. At this conclusion arrived other studies too. There is a need, especially for areas with high frequencies for certain methods, to understand the factors involved, to develop new and specific prevention projects and to monitor their effects [1].

Patients and methods

This study includes all cases of drug intoxication hospitalized in the 3rd internal medicine department of the Regional General Hospital of Nikea between November 1999 and November 2000.

On a total of 1705 patients admitted to the hospital, 146 (8,5%) were admitted for drug intoxication. In all cases the diagnosis of drug intoxication was based on information provided by the patient himself or by his/her closest relatives. Patients taking any toxic or pharmaceutical substance by accident or through ignorance were excluded, whereas those taking toxic substances were included. Most patients (85%) were subject to a mental state examination conducted by a specialized psychiatrist (there was no use of an adjusted mental health assessment scale).

The usual laboratory tests included blood test, sugar, urea, creatinine and electrolytes measurements, a thoracic radiography and an electrocardiogram. In some patients blood gases and bicarbonates were tested.

The hepatic function was examined on a daily basis in patients who had taken paracetamol. Acetylcysteine was administered as an antidote, if the dose taken was very high (>100 mg/kg). In case the patient had taken a toxic dose of benzodiazepines or opiates, in case disorders occurred in the level of conscience (confusion, lethargy, coma) or in the respiratory function due to suppression, flumazenil or hydrochloride naloxone were administered, respectively, until recovery.

Treatment included hydration, supporting the cardiac, respiratory and renal function, administration of the suitable antidote after consulting the National Poison Control Center, elective administration of carbon. Patients admitted to the hospital within a few hours after taking the drug (<6 hours) were subject to gastric lavage.

Results were compared with data from similar studies conducted both in Greece and abroad and specific comparisons were made by the use of the chi-square test.

Results

1705 patients in total were hospitalized in the clinic within a year (01.11.99 – 01.11.00). 146 of them were admitted to the hospital for drug intoxication (8.5%).

96 of these patients were women (65.8%) 15 to 65 years of age and 50 were men (34.2%) 16 to 74 years of age. The ratio of men to women was 1/1.92. The average age of women hospitalized for drug intoxication was 29.82 ± 11.72 , whereas the average age of men was 33.09 ± 12.01 . Considering the distribution of patients by age group and by sex, it is obvious that most cases of drug intoxication were persons aged less than 49 years old, whereas the incidence rate in women is superior to that in men, especially as regards to younger women. On the contrary after the age of 50 the incidence rate decreases considerably (5.46%) [Table 1].

Table 1: Patient distribution by age group

Age Groups	Men		Women		Total	
	N	%	N	%	N	%
14–19	6	(12%)	25	(26.05%)	31	(21,23%)
20–29	15	(30%)	30	(31,25%)	45	(30,82%)
30–39	14	(28%)	18	(18,75%)	32	(21,94%)
40–49	13	(26%)	17	(17,70%)	30	(20,55%)
50–59	-	-	5	(5,20%)	5	(3,42%)
60–69	1	(2%)	1	(1,05%)	2	(1,36%)
70–79	1	(2%)	-	-	1	(0,68%)
TOTAL	50	100%	96	100%	146	100%

Regarding the marital status of these women 46(48%) were single, 41 (42.7%) were married and 9 (9.3%) were divorced, whereas 44 (88%) men were single, 3 (6%) were married and 3 (6%) were divorced. Married women were considerably more compared to married men ($p \sim 0.001$).

Regarding education, it seems that women and men who had received secondary education attempted drug intoxication more often compared to those of higher education (women: 69.9% versus 16.4%) – men: 75.9% versus 6.9%). However, this difference was not statistically significant.

Regarding employment, 39 women (40.6%) were housewives, 15 (15.6%) were employed in the private sector and 14 (14.6%) were students. 19 men (38%) were unemployed, 11 (22%) were students or pupils and 10 (20%) were employed in the private sector.

72.4% of patients were admitted to the hospital within 3 hours after attempted suicide, whereas after 4 hours the rate of patients admitted to the hospital amounted to 82.9%.

Out of 146 patients, 71 (48.6%) took one pharmaceutical substance, 40 patients (27.4%) took two substances, 31 patients (21.2%) took three substances and 42 patients (2.8%) took four or more substances.

The drugs taken more frequently, alone or in combination with other drugs, were sedatives (67.1% [98/146]), especially the subgroup of benzodiazepines (69.4% [68/98]), as well as aspirin and analgesics (mainly paracetamol) (43.5% [63/146). Ethanol alone or in combination with other drugs was used only by 6.15% (9/146) of patients. 13.7% of patients (20/146) were drug users who took mostly heroine (Table 2).

Table 2: Drugs taken

Drugs (taken alone or in combination with other drugs)	Number	%
1. Sedatives	98/146	(67,1%)
-Benzodiazepines	68/98	
-Antidepressants	20/98	
-Antipsychotic drugs	10/98	
2. Analgesics	63/146	(43,5%)
-NSAIDs	37/63	
-Paracetamol	26/63	
3. Heroine and hallucinogens	20/146	(13,7%)
4. Alcohol	9/146	(6,15%)
5. Other	52/146	(35,6%)

38.3% of patients had a history of mental illness, 45.2% had attempted drug intoxication before and 31.5% of patients had needed psychiatric help. Patients who had attempted drug intoxication repeatedly had a history of mental illness at a significantly greater rate compared to the total number of patients (38.3%) (p ~ 0.001). Upon admission to the clinic mild to major toxicity was found in 56% of patients (complications in various systems). More precisely, disorders in the level of conscience appeared in 57 patients (39.1%). Out of 57 patients 17 (30%) were admitted to hospital in a coma (Glasgow scale) (Table 3).

Table 3: Clinical state of patients by admission to hospital

Clinical State	Number	%
1. Without symptoms	64/146	(44 %)
2. Disorders in level of conscience	57/146	(39,1 %)
-Coma	17/57	
3. Disorders by other systems	25/146	(16,9 %)

The outcome was favourable for all patients with no death occurring. A small percentage of the patients [2.1%] needed to be transferred to the Intensive Care Unit and 11% of the patients were transferred to the psychiatric department for further assessment and treatment due to the severity of their psychiatric problems. More than half [51.4%] of the patients were discharged normally, 30.1% of patients left the hospital at their own will and 5.5% of patients fled without notifying the hospital. The average length of hospital stay for 90% of patients was 2.4 days.

The main mental illnesses diagnosed after the mental state examination (according to the international classification criteria DSM-IV – R) were depression (20.96%), psychosis (15.32%), personality disorder (8.87%), dysthymic disorder (16.2%) and anxiety disorder (22.58%) [Table 4].

Table 4: Psychiatric diagnosis [(124/146) 85% of patients]

Diagnosis	Number	%
II. Emotional Disorders		
1. Severe and atypical depressions	26/124	(20,96 %)
2. Bipolar disorder	2/124	(1,61 %)
3. Dysthymic disorder	20/124	(16,2 %)
II /. Psychotic disorder	19/124	(15,32 %)
III/. Anxiety disorder	28/124	(22,58 %)
IV/. Personality disorder	11/124	(8,87 %)
VI/. Withdrawal syndrome	2/124	(1,61 %)
VI/. Toxicomania	15/124	(12,09 %)
VII/. Organic psychotic syndrome	1/124	(0,8 %)

Discussion

One of the most frequent causes for admission to a tertiary hospital is drug intoxication, since 8.5% of total admissions are due to drug intoxication. This rate is higher compared to that found in other studies conducted in Greece, but it is significantly lower compared to the cor-

responding rate in the European Union and American countries [2,3]. In regards to admission in a hospital due to drug intoxication, there was a statistically significant increase (123/5.534 vs 146/1705 $p \sim 0.001$) noted in suchlike Medical admissions in comparison with the results of a previous study conducted in the same hospital from August 1986 to August 1987 [4].

According to comparative studies conducted in USA and other European countries there has been a statistically significant increase in the number of drug intoxication cases during the eighties [5] According to data from the Poison Control Center drug intoxication cases have increased by 37.3% from 1980 to 1994. However, these data are based mainly on the number of telephone calls the Poison Control Center has received, including to some extent on accidental cases of poisoning and are not based on the number of patients admitted to hospital [6].

In the present study the ratio of men to women was 1/1.92. In similar studies conducted in the same hospital in 1977 and in 1987 but related with attempted suicides (94% drug intoxication) the ratio of men to women was 1/3.88 and 1/7.7, respectively [7,8]. It is likely that this development is due to the emancipation of women, due to the fact that women entered labour market tackling successfully their daily problems and due to the continuous increase in the unemployment rate. Due to social beliefs, unemployment is still an important factor of emotional stress, especially for men. However, a few data were found in Greek and international literature for documenting this assumption [5,9,10].

Most cases of drug intoxication (approximately 2/3) are mostly single women and married women who have received a secondary education. The causes are mainly conflicts with other family members or problems with their husbands. The average age is lower than that of men. The fact that the females prevail is related to the personality, the emotional features and the idiosyncrasy of women [11]. On the contrary regarding males, due to the high unemployment rate the indication is that employment plays an important role in ensuring a normal mental state. Pupils and students, both boys and girls, make attempts quite often. In these cases the causes are associated with emotional changes and problems they face in school, especially during examinations [12]. We can come to this conclusion, if we consider the distribution of drug intoxications during the whole year. There is a considerable increase in drug intoxication cases during summer [13].

In comparison with other European countries the drugs taken are quite similar, but in general there are differences in the drugs preferred by persons admitted for

drug intoxication [1]. In Greece benzodiazepines, aspirin and paracetamol are the drugs most frequently chosen, as were antidepressants (~10% of all drugs) in a previous similar study [4]. Persons likely to attempt suicide show preference to these drugs probably because they are not difficult to obtain and may even have been prescribed to them by a physician. On the contrary in the United Kingdom paracetamol alone or in combination with other drugs is the drug used mostly in attempted suicide [14]. Persons attempting suicide in Greece may also use alcohol but to a lesser degree compared to other European countries. According to some studies conducted in other European countries the drug preferred mostly by persons attempting suicide is ethanol [15]. 45% of patients had attempted drug intoxication repeatedly in the past and 38% of patients had a mental illness history. It is obvious that these persons need psychiatric help, so that they do not make another attempt. According to studies psychiatric help has a positive impact, as far as the survival of these persons is concerned [9,16]. Due to the great possibility of a relapse psychiatric help is extremely necessary.

The fact that the clinical state of most persons attempting suicide is good when admitted to the hospital and the fact that most of them recover without any problems indicate that most of them do not wish to die [17]. No death has been registered, since severe cases are transferred directly to Intensive Care Units and modern treatment methods are applied [18]. In Greece the mortality rate due to suicide is lower compared to other countries [19]. The high rate of repeated drug intoxication events (45%) is considered to be an independent high risk factor, which increases mortality rate [20].

We may conclude that drug intoxication is a problem that occurs frequently with a medical as well as social aspect. The increased use of antidepressants in self-poisoning is an alarming signal and caution in their prescription seems to be indicated [9]. Causes are associated with both individual and socioeconomic parameters, such as relationships among family members, unemployment, insufficient education, alcohol and drug misuse. Since most cases have a history of mental illness mostly depression [21], and due to the repeated drug intoxication events, it is obvious that these persons definitely need psychiatric help and support.

Competing interests

None declared

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