

PATTERNS OF ACUTE POISONING BY DRUGS AND SUBSTANCES ABUSE AMONG ADDICTS: A CLINICAL AND LABORATORY STUDY

BY

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ABSTRACT

The drug dependency problem in Egypt and worldwide is currently one of the major issues of concern to the public as well as the professionals. This study was conducted on all addicts with acute poisoning by drugs and or substances abuse (n= 149. They were admitted to Alexandria Poison Center (APC) and critical care unit (CCU) at Alexandria Main University Hospital (AMUH) during six months period from January to June 2003. In this study, all addicts were clinically examined. Routine investigations, arterial blood gases and acid base status were done with detection of drug or substance of abuse in urine by AxSYM and gas chromatography / mass spectrometry (GC/MS) for negative urine samples. The study showed that 71.2 % of addicts were encountered in the age group 20<40 years. Adolescents accounted for 15.4% of the addicts. Males outnumbered females with a sex ratio of 17.5:1. The study revealed that the majority of addicts were smokers 95.3% single 71.8 % and started drug/ substance abuse in the age group 10<30 years (87.2%). 43.7% of addicts were of low and very low social class while 28.9% were commercial workers. The duration of addiction ranged from one to 10 years. In the present study cannabis was the first abused substance (24.2%). Hypnotics whether of benzodiazepine (14.8 %) or barbiturates (10.7%) accounted for 25.5%. Ethyl alcohol either alone or adulterated by methyl alcohol, opioids, constituted 21.5%, 9.4 % and 19.5% respectively. Female addicts were more likely to abuse benzodiazepines (75.0%). 26.2% of addicts presented with severe poisoning and were in need of critical care interventions. The study revealed that positive urine samples for benzodiazepines, opiates, barbiturates and cannabis accounted for 100 %, 96.6% 93.8% and 72.2 %, respectively. The majority of addicts recovered completely (83.2%), deaths accounted for 3.4% of the total addicts. It is recommended that, Continuous health education and prevention programs concerning health hazards of drug and substance abuse among adolescents and young adults are highly indicated. In addition the Staff of poison centers and emergency departments, should be well trained to deal with diagnosis and management of overdose in addicts. Also screening immunoassay technique should be done on all urine samples of addicts and better to be confirmed using GC/MS, as the latter is more reliable in legal cases.

es, where it can stand court defense.

Keywords: Substances-related Disorders; Overdose; Blood-gas analysis; Substances Abuse detection; Analgesics, Opioid, cannabis; sedatives; Barbiturates; Benzodiazepine; Immunoassay; Mass Fragmentography.

INTRODUCTION

From time immemorial human beings have looked for substances to make life more pleasurable and to avoid or decrease pain, discomfort, and frustration (Pradhan et al., 1977).

Although drugs in the usual sense of term are mainly intended for medical uses, they have also been used for many nonmedical purposes. The nonmedical uses of drugs may vary from occasional drinking of alcohol or smoking of marijuana to compulsive use of opioids (Katzung et al., 2001).

Drug abuse is defined as the use of an illicit drug or licit drug outside legitimate medical practice. (Schnoll, 2000).

There are several factors that have been found to be associated with drug abuse. These factors are related to the drug concerned, the abuser's personality, habit, and the environment that favors the drug culture, (WHO, 1997, and Kosten, 1997).

Drugs of abuse:

There are a wide variety of substances

of abuse. According to the world health organization, drugs and substances producing dependence include the following: opiates, sedatives hypnotics as barbiturates and benzodiazepines ...etc, alcohol, amphetamines, cocaine, cannabis, hallucinogen as LSD...etc, volatile solvents/ inhalants as glueetc and others like tobacco. (WHO, 1990)

Substances abuse detection:

In the most adolescent medicine settings, a battery of screening tests, called the drugs of abuse screen, is ordered first, followed by confirming tests as indicated by the screening results and the clinical setting. Thin-layer chromatography was one of the earliest techniques used to screen for drugs in urine (winters, 1999). Several immunoassay techniques are able to detect nanogram quantities of abuse drugs; these are typically the preferred initial screening tests. As a class, these tests are faster, easier, and less user dependent than thin-layer chromatography (Osterloh, 2001).

All immunoassays involve the binding of antibodies to molecules (antigen) present in the urine. (Wilson and Smith, 1999).

Tests with high specificity (few false-positive results) are used as confirmatory tests. Gas chromatography with mass spectrometry (GC/MS) is one of the most specific tools for drug testing with high sensitivity. (ELSohly, 2003).

All tests that could be needed in a court of law should be collected with chain of custody precautions; this is done in cases of sexual assault evaluation and for urine drug testing. The procedure is simple: The specimen collector seals the specimen and labels it with identifying information, then signs the chain of custody form, documenting the time of collection (Casavant, 2002). Each time the specimen changes hands (collector, courier, laboratory intake, laboratory processing) the form is signed, dated, and timed by the recipient, who verifies receipt from the last person to sign the form. The specimen is never out of the direct custody of the last signatory unless placed in a sealed refrigerator it cannot be left unattended at a nurses' station, for example (Bayer, 1997).

The present work aimed to study the patterns of acute poisoning by drugs and substances abuse overdose among addicts from the clinical and laboratory point of view with their outcome.

PATIENTS :

This study was conducted on all addicts with acute poisoning by drugs and sub-

stances abuse (n= 149) who were admitted to Alexandria Poison Center (APC) and critical care unit (CCU) at Alexandria Main University Hospital during six months period from January to June 2003.

METHODS :

In this study, all addicts were clinically examined and data were collected as regards:

- 1- Biosocial data: age, sex, marital status, smoking habit, social class; working status ...etc.
- 2- Time at admission.
- 3- Clinical examination: including level of consciousness, this was assessed using Matthew and Lawson scale (M&L scale) (Mathew and Lawson, 1984).
- 4- Investigations ordered.
 - a- Routine investigations.
 - b- Arterial blood gases and acid base status using Chiron rapid lab 248 PH /blood gas analyzer.
 - c- Detection of drug or substances of abuse in urine by Axsym (Abbott laboratories) (Anon, 1997).

A urine sample was taken from every addict immediately on admission and before initiation of treatment, the cut off concentrations of drugs of abuse tested were: opiates (300ng/ml), barbiturates (200 ng/ml), cannabinoids (50 ng/ml) and benzodiazepines (200 ng/ml). All negative urine samples (n=12) were confirmed using

GC/MS analysis with solid phase Extraction (SPE) of the samples (Hewlett Packard 5973 Mass Selective Detector).

5 - Management, duration of hospital stay, type of discharge and Outcome.

Statistical analysis:

Statistical analysis of the results were carried out using mean (X), standard deviation (SD) and t test where the level of Significance was set at 5%.

RESULTS AND DISCUSSION

The study entailed 149 addicts with drug or substance abuse admitted to APC and CCU during six months period starting from the first of January 2003 till the end of June 2003. They constituted 3.1% of the total cases of acute poisoning admitted to AMUH during the same period (n=4871). The 2002 annual report of the American Association of Poison Control Centers, toxic exposure surveillance system in USA recorded a lower figure of 1.8% (Watson et al., 2003).

Age and sex :

The age of addicts ranged from 10-60 years with a mean age of 27.7 ± 7.6 years (Table 1). A lower mean age of 24.96 ± 9.47 years was reported by Abd El-Megid and Salem, (1996) and a higher mean age of 29.38 ± 8.73 years was recorded by EL-Shafhy, (1997).

The study showed that nearly half the addicts were encountered in the age group 20<30 years (47.7%) followed by those aged 30<40 years (23.5%). Abd El-Megid et al., (1997) reported that three quarters of the addicts (75%) were in the age group 20-40 years. This is the period of active life, work and responsibilities with more liability for exposure to stress and fear of failure, so they wrongly belief that drugs are considered the way to show their rejection of social standards and established ways of living (Macdonald, 1987).

Adolescents (10-20 years) accounted for 15.4% of the addicts. Swadi, (1999) explained the reasons of drug intake by adolescents to be due to sense of emptiness, emotional and rational difficulties associated with the crises of adolescence as well as to establish their individuality and independence.

Rexed et al., (1984) stated that drug abuse among adolescents and young adults impairs normal maturation and development, as well impair judgment and has adverse effects on mental and physical functioning, in addition to potentiation of impulsive and violent behavior.

As regards sex, the present study revealed that males outnumbered females (94.6% and 5.4% respectively) with a sex ratio of 17.5:1. The great predominance of males over females was reported by Soli-

man et al., (1991) and Kaminer, (1999). This predominance of males could be attributed to the fact that women experience more social disapproval of substance use and substance use is more stigmatized in women than men (Brady and Randall, 1999).

Time at admission :

The study indicated that the majority of addicts were admitted during the night shift (84.5%). The afternoon and the morning shifts accounted for 8.1% and 7.4% respectively. This is consistent with a previous study done by Leikin et al., (2001) which revealed that recreational drug use presentations were more likely to occur during the night. So emergency department staff should be most prepared to deal with these addicts in the late afternoon and night.

The study demonstrated that 71.8% of addicts were singles, while the rest (28.2%) were married. A nearby percentage of 67.6% and 66.0% was reported by Mendis, (1985) and Mohan et al., (1985). On the other hand Badr et al., (1998) emphasized that 57% of addicts were unmarried, the same finding was observed by Ibrahim, (1992) in Saudi Arabia. This could be attributed to the fact that single adolescents are immature and emotionally unstable and may escape problems through drug / substance abuse. Moreover marriage plays a role in maturation of person-

ality with sense of responsibility for home and children.

Smoking habit :

The study revealed that the majority of addicts were smokers (95.3%); this could be attributed to the fact that cigarette smoking paved the way for substance abuse disorders. This is consistent with a study done by Aly et al., (1988) they stated that cigarette smoking is an important risk factor associated with drug/ substance abuse.

Age of starting drug/ substance abuse:

The study revealed that more than half the addicts started drug/ substance abuse in the age group 20<30 years (53%), followed by age group 10<20 years (34.2%).The remaining (12.8%) started abuse at 30 years and more. Yamamah (2003) reported a mean age of starting abuse of 16.26 ± 1.11 years. He found a deleterious long term effects of substance abuse on the lung, liver and kidneys of adolescent abusers.

Type of drug/substance abuse overdose :

The pattern of drug abuse overdose differs from one country to another, even in the same country from one year to another. In Taiwan methamphetamine and heroin were the two most common drugs of abuse (Lua et al., 2002) in Kuwait ethyl alcohol was the most common (70.0%) to be followed by heroin and benzodiaze-

piners (Darwiche, 1996).

In the present study cannabis was the first abused substance (24.2%) as shown in table 2. The same finding was reported by Abd El-Moniem et al., (2002) and Souief et al., (1986) among secondary school students in Assuit and Cairo cities, Egypt. Again Abu-Nazel et al., (2000) stated that cannabis abuse was the commonest substance abused among industrial workers followed by ethyl alcohol.

In a previous study done in Alexandria poison centre during the year 2000 (Abd El-Megid, 2002) ethyl alcohol overdose was the first type of poisoning among addicts either alone (35.2%) or in combination with cannabis or benzodiazepines (5.0%).

Hypnotics were the second drug abused by addicts (25.5%) whether of the benzodiazepine group (14.8%) or the barbiturate group (10.7%) to be followed by opiates (19.5%). The same findings were reported by Abd El-Megid, (2002).

The predominance of hypnotics over opiate abuse can be attributed to the less availability of heroin in the market following the big effort exerted by drug controllers. While benzodiazepines and barbiturates are easily obtained where the first used as minor tranquillizer and hypnotic, while the later is present with anticonvul-

sant drugs for treatment of epilepsy e.g. Committal L. (Abd El-Megid, 2002).

The study revealed that methyl alcohol poisoning following ingestion of adulterated wine accounted for 9.4% of the total addicts with acute toxicity. This figure is high if compared with that reported in a previous study done in Alexandria poison centre which was 4.6% (Abdelmegid, 2002). Addicts with ethyl alcohol adulterated with methyl alcohol poisoning were more likely to be males in the age group 20-30 years (64.3%). A higher percentage of 70.0% was reported by Abd El-Megid et al., (2002) in the age group 15-35 years (Table 2).

The study showed that female addicts with overdose (n=8) were more likely to abuse benzodiazepines (75.0%), the remaining two abuse cannabis and ethyl alcohol (12.5% each) (Table 3).

Type of drug/substance abuse overdose, occupation and social class :

The study demonstrated that cannabis abusers were more likely to be students and unemployed (33.3% and 25.0% respectively) where two thirds of them were of low social class. The same finding was in agreement with the study of Abd El-Moniem et al., (2002) (Tables 4,5).

On the other hand, the study showed that more than half ethyl alcohol adulter-

ated with methyl alcohol intoxicated addicts (57.1%) were manual workers; where the majority of them (85.7%) were of low social class (Tables 4,5).

This is consistent with a study done by Abd El-Megid et al., (2002).

Addicts with opiate and ethyl alcohol overdose were more likely to be commercial workers (55.2% and 50% respectively), of high and low social class (48.3% and 53.1% respectively). This could be attributed to the fact that they earn much; in addition it depends on the type of alcoholic beverages consumed.

Benzodiazepines abusers were more likely to be unemployed and housewives (36.4% and 27.3% respectively). They were of moderate and low social class (59.1% and 36.4% respectively).

The majority of barbiturates abusers were of low and moderate social class (56.2% and 31.3% respectively). Again they were more likely to be unemployed or students. This could be attributed to the low price and easy availability of these drugs as they are used in the treatment of other disorders (Table 5).

Type of drug/ substance abuse overdose and level of consciousness on admission :

The present study demonstrated that

more than a quarter of addicts (26.2%) presented with severe poisoning i.e. grade 3 and 4 M&L scale, these addicts were in need of critical care admission. They were opiate abusers (56.4%), followed by barbiturates and ethyl alcohol adulterated with methyl alcohol abusers (28.2% and 15.4% respectively) (Table 6).

These addicts presented on admission by profound central nervous system and respiratory depression following overdose by these agents. All of them were in need of critical care intervention, in the form of cardiac monitoring, correction of hypoventilation by mechanical ventilation, correction of metabolic acidosis and electrolyte imbalance and others were in need of hemodialysis.

Investigations :

a) Routine laboratory investigations :

The study demonstrated that addicts who did not need critical care admission, their routine laboratory results were within normal physiological values (kidney and liver function tests, sodium, potassium). This could be attributed to the fact that all those addicts were hemodynamically stable and presented with non-severe degrees of poisoning (grade 0, 1 and 2 M&L scale).

On the other hand, all those who were admitted to the critical care unit, showed disturbed acid base status on admission.

This can be explained by the presence of respiratory acidosis in addicts presented by severe opiate or barbiturates overdose (grade 3 and 4 M&L scale), and the presence of uncompensated metabolic acidosis in those presented by severe methyl alcohol intoxication.

b) Detection of drug/ substance abuse in urine :

In the present study urine samples were collected from addicts with overdose (n=103) where addicts with ethyl and adulterated ethyl alcohol with methyl alcohol poisoning were not included. Each urine sample was screened for cannabinoids, opiates, benzodiazepines and barbiturates. Immunoassay technique was used using AxSYM system, Abbott Diagnostics II, USA.

The study revealed that positive urine samples for cannabis, opiates and barbiturates accounted for 72.2%, 96.6% and 93.8% respectively (table 7). On the other hand all urine samples screened for benzodiazepines were positive (100%).

All the negative urine samples for cannabis (n=10), opiates(n=1) and barbiturates (n=1) were positive using GC/MS analysis. This could be attributed to the fact that the level of the responsible drug of abuse is below the cut off value of the system. This indicates the relative reliability of AxSYM screening test and the impor-

tance of applying confirmatory tests in any negative urine sample.

Management :

In the present study, a standard protocol for management of addicts with overdose was adopted according to the clinical presentation and type of drug/substance abuse. (Abd El Megid and Salem, 2002).

Duration of hospital stay :

The study revealed that the majority of addicts (87.3%) stayed in the hospital for one day, 9.4% stayed from 2<4 days. Only 3.3% stayed from 4-7 days.

The mean duration of stay was 1.22 ± 1.0 day, this short duration of stay could be attributed to the fact that more than half the addicts (63.1%) escaped from the hospital when their condition improved, others discharged on the responsibility of their relatives against the advice of the doctor for fear of legal responsibilities.

Outcome :

The present study showed that the majority of addicts (83.2%) recovered completely. Addicts who developed complications (n=20) constituted 13.4% of the total addicts. Complications were in the form of chest infection (n=11) following mechanical ventilation, visual impairment (n=7) following adulterated ethyl alcohol with methyl alcohol poisoning, the remaining two addicts were ethyl alcohol abusers

who had developed gastric ulceration with hematemesis during their hospital stay.

Deaths accounted for 3.4% of the total addicts with overdose. A lower percentage of deaths were reported by Watson et al., (2002) in the United States of America which was 1.1%. This could be attributed to the highly advanced and equipped poison centers in the United States.

The study revealed that all the deaths (n = 5) were categorized as severe poisoning classified by Mathew and Lawson scale, the majority of deaths (80%) were due to methyl alcohol poisoning, this is consistent with a study done by Rashed (2000) where the highest percentage of deaths were due to methyl alcohol poisoning. The remaining addict (n=1) died from opiate overdose.

From the previous study, the following recommendations are suggested:

1-Continuous health education and prevention programs concerning health hazards of drug abuse among adolescents and young adults and the importance of seeking early treatment.

2- Development of school and university programs designed to assist adolescents and young adults in developing problem solving and coping with stresses, conflicts and difficulties, instead of escaping to drugs and substance abuse.

3- Staff of poison centers and emergency departments should be well trained to deal with diagnosis and management of patients with acute poisoning, with special emphasis on overdose in addicts.

4- A screening immunoassay technique should be done on all urine samples of drug addicts and better to be confirmed using gas chromatography / mass spectrometry as the later is more reliable in legal cases, where it can withstand court defense.

Table (1): Addicts with drug /substance abuse overdose (n=149) admitted to APC at AMUH (January - June 2003) by age and sex.

Age group	Males		Females		Total	
	No.	%	No.	%	No.	%
10-	23	16.3	-	-	23	15.4
20-	66	46.8	5	62.5	71	47.7
30-	32	22.70	3	37.5	35	23.5
40-	14	9.9	-	-	14	9.4
50-60	6	4.3	-	-	6	4.0
Total	141	100.0	8	100.0	149	100.0
Mean \pm S.D.	29.3 \pm 11		26.1 \pm 4.3		27.7 \pm 7.6	
t	1.44					
p	0.098 N.S.					

* APC = Alexandria Poison Center

** AMUH = Alexandria Main University Hospital

Table (2): Addicts with drug / substance abuse overdose (n=149) admitted to APC at AMUH (January - June 2003) by type of drug / substance abuse and age.

type of drug / substance abuse overdose	Age group								Total	
	10-20		20-30		30-40		40-60			
	NO	%	NO	%	NO	%	NO	%	NO	%
Cannabis	9	39.1	16	22.5	7	20	4	20	36	24.2
Ethyl alcohol	3	13.1	18	25.3	5	14.3	6	30	32	21.5
Opiate	3	13.1	10	14.1	10	28.6	6	30	29	19.5
Benzodiazepines	5	21.7	7	9.9	8	22.8	2	10	22	14.8
Barbiturates	2	8.7	11	15.5	3	8.6	-	-	16	10.7
Adulterated ethyl alcohol	1	4.3	9	12.7	2	5.7	2	10	14	9.4
Total	23	100.0	71	100.0	35	100.0	20	100.0	149	100.0

Table (3) Addicts with drug / substance abuse overdose (n=149) admitted to APC at AMUH (January – June 2003) by type of drug / substance abuse and sex.

type of drug / substance abuse overdose	Males		Females		Total	
	No	%	No	%	No	%
Cannabis	35	24.8	1	12.5	36	24.2
Ethyl alcohol	31	21.9	1	12.5	32	21.5
Opiate	29	20.6	-	-	29	19.5
Benzodiazepines	16	11.4	6	75	22	14.8
Barbiturates	16	11.4	-	-	16	10.7
Adulterated ethyl alcohol	14	9.9	-	-	14	9.4
Total	141	100	8	100	149	100

Table (4): Addicts with drug / substance abuse overdose (n=149) admitted to APC at AMUH (January – June 2003) by occupation and type of substance abuse.

type of drug / substance abuse overdose	Commercial workers		Manual workers		Un-employed		students		House-wives		Total	
	No.	%	No.	%	No	%	No	%	No.	%	No.	%
Cannabis	7	19.4	7	19.4	9	25	12	33.3	1	2.8	36.0	100.0
Ethyl alcohol	16	50	5	15.6	7	21.9	3	9.4	1	3.1	32.0	100.0
Opiate	16	55.2	3	10.3	6	20.7	4	13.8	-	-	29	100.0
Benzodiazepines	1	4.5	3	13.6	4	18.2	8	36.4	6	27.3	22	100.0
Barbiturates	-	-	3	18.8	8	50.0	5	31.3	-	-	16	100.0
Adulterated ethyl alcohol	3	21.4	8	57.1	2	14.3	1	7.1	-	-	14	100.0
Total	43	28.9	29	19.5	36	24.2	33	22.1	8	5.4	149	100.0

Table (5): Addicts with drug / substance abuse overdose (n=149 admitted to APC at AMUH (January – June 2003) by type of drug /substance abuse overdose and social class.

type of drug / substance abuse overdose	Social class						Total	
	Low and very low		Moderate		High			
	No	%	No	%	No	%		
Cannabis	24	66.6	6	16.7	6	16.7	36	100
Ethyl alcohol	17	53.1	8	25	7	21.9	32	100
Opiate	10	34.5	5	17.2	14	48.3	29	100
Benzodiazepines	8	36.4	13	59.1	1	4.5	22	100
Barbiturates	9	56.2	5	31.3	2	12.5	16	100
Adulterated ethyl alcohol	12	85.7	2	14.3	-	-	14	100
Total	80	53.7	39	26.2	30	20.1	149	100

Table (6): Addicts with drugs / substance abuse overdose (n=149) admitted to APC at AMUH (January - June 2003) by type of drug /substance abuse and level of consciousness.

type of drug / substance abuse overdose	Matthew and Lawson						Total	
	Grade 0 &1		Grade 2		Grade 3&4			
	No	%	No	%	No	%	No	%
Cannabis	36	48.85	-	-	-	-	36	24.2
Ethyl alcohol	15	25.5	17	38.6	-	-	32	21.5
Opiate	-	-	7	15.9	22	59.4	29	19.5
Benzodiazepines	12	19.75	10	22.7	-	-	22	14.8
Barbiturates	-	-	5	11.4	11	28.2	16	10.7
Methyl alcohol	3	5.9	5	11.4	6	15.4	14	9.4
Total	66	100.0	44	100.0	39	100.0	149	100.0

Table (7): Percentage of positive urine samples of drug /substances abuse overdose (n = 103) by Axsym.

type of drug / substance abuse overdose	Cut off	No. of urine samples	Axsym results			
			Positive		Negative	
			No	%	No	%
Cannabis	50	36	26	72.2	10	27.8
Opiate	300	29	28	96.6	1	3.4
Benzodiazepines	200	22	22	100	-	-
Barbiturates	200	16	15	93.8	1	6.2

Table (8): Addicts with drugs / substance abuse overdose admitted to APC at AMUH (January – June 2003) by types of management.

Type of management
<p>*Maintain clear patent airway through:</p> <ul style="list-style-type: none"> Insertion of cuffed endotracheal tube Mechanical ventilation <p>*Maintain an adequate circulation though:</p> <ul style="list-style-type: none"> a- I.V. fluid infusion b-Corticosteroids c-Vasopressors <p>*Prevention of absorption of poison through:</p> <ul style="list-style-type: none"> Emesis +activated charcoal+cathartic Gastric lavage + activated charcoal +Cathartic <p>*The physiological antidotes given:</p> <ul style="list-style-type: none"> Naloxone hydrochloride (Narcan) Flumazenil Ethyl alcohol I.V. (10%) Folic acid (Leucovorin calcium) <p>*Enhance elimination of the poison through hemodialysis</p> <p>*Correct metabolic acidosis by I.V .NaHCO₃</p> <p>*Nursing care</p>

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أنماط التسمم الحاد بأدوية ومواد الإدمان نتيجة جرعة زائدة في المدمنين : دراسة إكلينيكية ومعملية

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تعتبر مشكلة إدمان العقاقير والمواد المخدرة في مصر والعالم أجمع الشغل الشاغل للعامة والمختصين على حد السواء. كان الهدف من هذا البحث هو دراسة إكلينيكية ومعملية لأنماط التسمم الحاد بأدوية ومواد الإدمان نتيجة تناول جرعة زائدة في المدمنين. وقد اشتملت هذه الدراسة على مائة وتسعة وأربعين مريضاً من المدمنين الذين تم إدخالهم مركز الإسكندرية للسموم ووحدة الطب الحرج بالمستشفى الرئيسى الجامعى بالإسكندرية نتيجة تناول جرعة زائدة من أدوية أو مواد الإدمان فى الفترة من أول يناير إلى آخر يونيو ٢٠٠٣، وقد تم أخذ التاريخ المرضى للحالات وفحصهم إكلينيكياً وإجراء الفحوصات المعملية والتي شملت الفحوصات المعملية الروتينية والغازات بالدم الشريانى والحالة الحمضية والقلوية بالدم والكشف عن أدوية أو مواد فى البول باستخدام جهاز أكسيم وجهاز كروماتوجرافيا الغاز مع مقياس طيف الكتلة GC/MS لعينات البول السالية. وقد أسفرت الدراسة عن النتائج الآتية : معظم المدمنين (٧١.٢٪) كانوا فى المرحلة العمرية من ٢٠-٤٠ سنة، أما نسبة المراهقين فكانت ٤.٤٪، كانت نسبة الذكور إلى الإناث ٥، ١٧ : ١. أظهرت الدراسة أن أغلبية المدمنين كانوا من المدخنين (٩٥.٣٪) وغير متزوجين (٧١.٨٪) و ٨٧.٢٪ منهم بدأ الإدمان فى المرحلة العمرية من ١٠-٣٠ سنة، كان ٢٨.٩٪ من المدمنين من أصحاب أشغال حرة وكان ٤٣.٧٪ من ذوى المستوى الاجتماعى المنخفض أو المنخفض جداً، تبين من البحث أن مادة الحشيش المخدرة كانت أكثر شيوعاً ٢٤.٢٪، وكانت النومات سواء البنزوديازيبين (١٤.٨٪) أو الباريتيبورات (١٠.٧٪) قتل ٢٥.٥٪ من المدمنين أما إدمان الكحول الإيثيلى والأفيونات والكحول الميثيلى فكانوا ٢١.٥٪، ٩.٤٪، ١٩.٥٪ على التوالي. كان عقار البنزوديازيبين هو الأكثر شيوعاً بين الإناث (٧٥٪). وجد أن ٢٦.٢٪ من المدمنين عانوا من تسمم شديد وكانوا بحاجة ماسة إلى دخول العناية الحرجة. وقد أظهرت الدراسة أن عينات البول الإيجابية كانت على النحو التالى لكل من البنزوديازيبين والأفيون والباريتيبورات وتحسن ٨٣.٢٪ من المدمنين فى حين كانت نسبة الوفيات ٣.٤٪ من العدد الإجمالى للمدمنين. وأوصى الباحثون بالآتى :

- ١- عمل برامج توعية صحية مستمرة عن المخاطر الصحية للإدمان للمراهقين والشباب وأهمية اللجوء للعلاج المبكر.
- ٢- ضرورة تدريب فريق أطباء مركز السموم وقسم الطوارئ بالمستشفيات على كيفية تشخيص وعلاج التسمم الحاد مع التركيز على الحالات الناتجة عن تناول جرعة زائدة فى المدمنين،
- ٣- ضرورة الكشف عن أدوية ومواد الإدمان فى بول جميع المدمنين باستخدام الطريقة المناعية، ويفضل التأكد باستخدام جهاز كروماتوجرافيا الغاز مع مقياس طيف الكتلة GC/MS حيث أنه أكثر مصداقية فى الحالات الجنائية.