

Acute Toxicity of Abused Drugs in Minia Poison Control Center

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Abstract

Background: Drug abuse is one of the most serious threats in several countries; acute toxicity of these drugs was more common in all poison control centers. **Objectives:** This study aimed to recognize the incidence of acute toxicity of abused drugs **Methods:** This retrospective study was conducted on 375 patients presented to Poison Control Center (PCC) of Minia university hospital from 1st of January 2017 to 31st of December 2019, data collected regarding socio demographic information, types of toxins, mode of toxicity, clinical manifestations, investigations, and outcome. **Results:** Patients of this study aged 6 months– 58 years old, hospital stay duration ranged between 1 to 8 days. Combined drugs were the most common type 19.2 %, most patients were males 99.2 %, lived in urban areas 70.1 %, unemployed 91.5 %, single marital status 54.7 %. 41.9 % of patients had intermediate qualification; accidental overdose toxicity is the most common mode of poisoning 69.9 %. Regarding clinical manifestation, most patients had stable vital signs and normal arterial blood gases (ABG), and coma was the commonest manifestation. 91.7 % of patients survived while 8.3 % died. **Conclusion:** combined drugs addiction is most common between addicts nowadays; also synthetic cannabinoid addiction had increased.

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Key words

drugs, addiction, abused drugs, acute toxicity, strox

Introduction

Drug abuse has become one of the most serious public health issues in recent decades (Arendt et al; 2011). Many synthetic medications have grown in popularity in recent years such as cannabis, opioids, benz - odiazepines, Trihexyphenidyl, clonazepam, tropicamide, gabapentin, and cough syrup (Pompei et al; 2016).

Several non-scientific reports from the previous five years have shown the presence of emergent, low-cost New Psychoactive Substances (NPSs) known as Strox, and to a lesser extent, voodoo, was reported. The Ministry of Social Solidarity's addiction treatment hotline (MOSS) (2017); mentioned that strox was responsible for 4.3% of addiction cases; it increased to reach 22% in 2018.

The toxicity pattern in poison control centers of different countries is frequently varied, however the incidence of human poisoning each year is on the rise all around the world (Kaya et al; 2015), so the objective of this retrospective study is to detect the incidence of acute toxicity of abused drugs in Poison Control Center (PCC) of Minia university hospital from the start of 2017 to the end of 2019.

Subjects and Methods

The present retrospective study was conducted on 375 patients (372 males and 3 females) with age ranged between 6 months to 58 year presented to Poison Control Center (PCC) of Minia university hospital from 1st of January 2017 to 31st of December 2019. We have obtained approval from Scientific Research Ethics

Committee, faculty of medicine, Minia university (number: 278-2022).

Data were collected from patients' sheets included, age, duration of hospital stay, type of substances abused which confirmed by drug screening and socio-demographic data (gender, residence, occupation, marital status, mode of toxicity, outcome and education). Clinical examination of patients included vital signs, gastrointestinal examination, neuropsychiatric examination and examination of skin and pupil. Laboratory investigation results included arterial blood gases (ABG). Outcomes of the patients recorded either survival or death

Treatment strategies according to protocol of management followed at Poison Control Center (PCC) of Minia university hospital which included mainly supportive and symptomatic treatment in order to keep patent airway, and maintain effective respiration and circulation. Anticonvulsant drugs were given whenever needed to control convulsions. Care of comatose patients including good oxygenation, frequent mobilization. Fluids and vasopressor agents indicated in case of shock. Mechanical ventilation whenever indicated. Gastrointestinal decontamination where needed in some patients especially those with combined drug ingestion. Hemodialysis was done for many cases of methanol toxicity. Antidotes were given on basis of availability (e.g. ethanol and folic acid were given in methanol toxicity, naloxone in some patients of tramadol toxicity). Following recovery psychiatric treatment was a corner stone in treatment for all patients.

Statistical analysis

The collected data were statistically analyzed using SPSS program (Statistical Package for Social Sciences) software version 26. The quantitative data expressed as mean \pm SD with minimum and maximum range, while qualitative data expressed as number and percentage. Analysis of quantitative data was done using Kruskal Wallis Test. Qualitative data was analyzed by Chi square test. Difference was considered to be significant if P value was \leq 0.05.

Results

The present retrospective study was conducted on 375 patients aged 6 months to 58 years old. Out of them 9 children (< 10 years) [mean \pm SD: 4.56 \pm 3.078years], 98 patient in adolescent age group (10 -19 years) [mean \pm SD: 16.47 \pm 2.41years] and most of patients (268) were adult (\geq 19 years) [mean \pm SD: 30.02 \pm 8.29years] (Table 1).

Regarding the demographic data of patients in our study as shown in table (2); there was a significant higher number of males (99.2 %) than females (0.8%). Most of the patients (70.1%) were from urban areas, while 29.9% were from rural areas

As shown in table (2); the majority of patients (91.5%) in the current study were unemployed. Regarding marital status, 205 patients (54.7%) were single, 148 patients (39.5%) were married and 22 patients (5.9%) were divorced or widows. As regards the mode of toxicity; most of the patients (69.9%) were poisoned due to overdose followed by suicidal exposure (27.7%) and the least was due to accidental exposure in 9 patients (2.4%). The illiterate patients (16.8%) were significantly lower than patients with high education (41.1%) and intermediate qualifications (41.9%).

It was shown that the most commonly used addictive substance is a drug combination between tropicamide eye drops and tramadol which represented 19.20 %, followed by tramadol represented 18.67 %, then strox (street name of an illicit drug of abuse) represented 17.33 % and the combination of gabapentin and tramadol was observed in 10.93% of patients (Table 3).

The outcome of patients in this study was good as most of the patients (91.7%) survived. The mortality rate was 8.3%. The death in the present study was related to methanol, heroin, tramadol, and combined drugs toxicity (Table 3).

The hospital stay duration of all patients ranged between 1 to 8 days with mean \pm SD: 2.92 \pm 1.337 days. As shown in table (4); The duration of hospital admission was significantly affected by the type of drug used where the longer duration was associated with methanol, tropicamide eye drops plus tramadol,

and tramadol with a mean duration of 6.12 \pm 0.781days, 3.69 \pm 1.134 days and 3.46 \pm 1.163 days respectively.

Eighty nine patients were admitted at intensive care unit because they were cyanosed secondary to heroin toxicity, or suffered from tachyarrhythmia and hypertension with strox, cannabics, tramadol and combined drug toxicity, or patients suffered from resistant metabolic acidosis with methanol or those needed mechanical ventilation or hemodialysis, while the rest of patients were admitted in the inpatient ward.

On admission, the majority of the patients had stable vital signs; tachycardia was related to Trihexyphenidyl, tropicamide plus tramadol, and heroin, hypotension usually occurs in heroin abusers. Fever was observed in patients used Trihexyphenidyl (the mean of temperature was 38.05 $^{\circ}$ c), strox (37.93 $^{\circ}$ c), synthetic cannabinoid (37.72 $^{\circ}$ c), Cannabis plus tropicamide and tramadol (37.67 $^{\circ}$ c) and gabapentin plus tramadol (37.54 $^{\circ}$ c) (Table 4).

Table 5, 6, 7 and 8 describe the clinical manifestations and arterial blood gas analysis results of patients. In the current study; the acute toxicity of ethanol associated with hallucination in most of patients (87.5%), followed by vomiting (75 %), 50 % of patients had acidosis. But in acute toxicity of methanol; abdominal pain was the most common manifestation (70.6 %) followed by agitation (47.1%) and 100 % of patients had acidosis. Regarding the acute toxicity of benzodiazepine, coma was the most common manifestation (66.7 %). Regarding acute Trihexyphenidyl toxicity agitation (81.8 %) was the most common manifestation and 9.1 % of patients had alkalosis.

Regarding acute toxicity of tramadol; coma (58.6 %) was the most common manifestation, 40 % of patients had constricted pupil, and 57.1 % of patients had acidosis. But in acute cannabis toxicity the commonest manifestation was abdominal pain (58.3 %), diarrhea (37.5 %), and 37.5 % of patients had acidosis. In acute toxicity of strox and voodoo, 100 % of patients had coma and acidosis (63.1 % and 55.6 % respectively).

In all combination the commonest manifestation was CNS followed by GIT except in gabapentin plus tramadol, CNS followed by skin manifestation (cyanosis 53.7 %), in cases presented with gabapentin plus cough syrup ingestion; CNS and GIT manifestation observed in all patients. In Cannabis plus clonazepam toxicity; the most common presentation was cyanosis (55.6 %). Regarding acute heroin toxicity, the most common manifestation was cyanosis 71.4 %.

Table 1: Kruskal Wallis statistical analysis of age among studied cases.

Variables	N	Minimum	Maximum	Mean	Std. Deviation	P value
Children	9	0.05	< 10.00	4.5611	3.07752	0.000* (HS)
Adolescent	98	10.00	19.00	16.4694	2.41219	
Adult	268	>19.00	58.00	30.0224	8.28515	

* *P-value* >0.05: Non significant (NS); *P-value* <0.05: Significant (S); *P-value* < 0.01: highly significant (HS).

Table 2: Chi square statistical analysis of socio- demographic data among studied patients.

Variables	Number	Percent (%)	P value
Gender			0.001*(HS)
Male	372	99.2	
Female	3	0.8	
Total	375	100.0	
Residence			0.005*(HS)
Rural	112	29.9	
Urban	263	70.1	
Total	375	100.0	
Occupation			0.001*(HS)
Employed	32	8.5	
Unemployed	343	91.5	
Total	375	100.0	
Marital status			0.005*(HS)
Single	205	54.7	
Married	148	39.5	
Divorced/widow	22	5.9	
Total	375	100.0	
Mode of acute toxicity			0.000*(HS)
Accidental	9	72.3	
Overdose	262	27.7	
Suicidal	104	100.0	
Outcome			0.001*(HS)
Survivor	344	91.7	
Dead	31	8.3	
Total	375	100.0	
Education			0.005*(HS)
Illiterate	63	16.8	
Intermediate qualification	157	41.9	
High education	154	41.1	
Total	375	100.0	

* *P-value* >0.05: Non significant (NS); *P-value* <0.05: Significant (S); *P-value* < 0.01: highly significant (HS)

Table (3): Distribution of offending drugs of abuse and the outcome among studied patients.

Types	Number	Percent	Outcome	
			Survivor	Dead
Ethanol	8	2.13 %	8 (100.0%)	0 (0.0%)
Methanol	17	4.53 %	13 (76.5%)	4 (23.5%)
Benzodiazepines	12	3.20 %	12 (100.0)	0 (0.0%)
Trihexyphenidyl	11	2.93 %	11 (100.0)	0 (0.0%)
Tramadol	70	18.67 %	61 (87.1%)	9 (12.9%)
Cannabis	24	6.40 %	24 (100.0)	0 (0.0%)
Cannabis & Clonazepam	9	2.40 %	9 (100.0)	0 (0.0%)
Strox	65	17.33 %	63 (96.9%)	2 (3.1%)
Voodoo	9	2.40 %	7 (77.8%)	2 (22.2%)
Tropicamide & tramadol	72	19.20 %	69 (95.8%)	3 (4.2%)
Cannabis & tropicamide & tramadol	18	4.80 %	17 (94.4%)	1 (5.6%)
Gabapentin & tramadol	41	10.93 %	37 (90.2%)	4 (9.8%)
Gabapentin & cough syrup	12	3.20 %	12 (100.0)	0 (0.0%)
Heroin	7	1.87 %	1 (14.3%)	6 (85.7%)
Total	375	100 %	344 (91.7%)	31 (8.3%)

* *P*-value >0.05: Non significant (NS); *P*-value <0.05: Significant (S); *P*-value < 0.01: highly significant (HS)

Table 4: Kruskal Wallis statistical analysis of vital signs and hospital stay among patients poisoned by different agents in the current study.

Variable Type	Number	Pulse	Blood pressure	Respiratory rate	Temperature	Hospital stay
	N	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Ethanol	8	87.5±7.3	94.4±9.4	18.6±1.7	36.6±0.2	2.1±0.6
Methanol	17	76.8±7.7	108.2±21.6	17.8±2.5	36.8±0.5	6.1±0.8
Benzodiazepines	12	89.5±18.5	118.8±5.7	19.3±0.87	37.1±0.1	2.1±0.8
Trihexyphenidyl	11	98.5±16.8	118.2±5.6	19.2±0.8	38.1±0.7	2.0±0.0
Tramadol	70	87.6±18.6	106.5±19.0	18.8±3.8	36.6±0.3	3.5±1.2
Cannabis	24	76.2±8.7	117.7±18.4	19.3±1.0	37.0±0.2	1.4±0.5
Cannabis & clonazepam	9	68.3±0.7	115.6±5.8	19.8±0.4	37.1±0.1	1.0±0.0
Strox	65	83.9±11.9	128.7±28.7	19.3±3.8	37.9±0.7	2.5±0.5
Voodoo	9	88.3±37.5	107.2±33.5	19.0±0.7	37.7±0.7	3.0±0.0
Tropicamide & tramadol	72	93.31	106.3±21.6	18.4±2.1	37.2±0.6	3.7±1.1
Cannabis & tropicamide & tramadol	18	72.78	117.5±20.6	19.0±3.1	37.7±0.4	2.6±0.5
Gabapentin & tramadol	41	76.2±9.6	106.5±12.2	17.8±2.9	37.5±0.5	2.8±0.8
Gabapentin & cough syrup	12	82.0±12.3	105.4±10.1	18.9±0.3	37.4±0.5	1.4±0.5
Heroin	7	113.0±32.3	84.3±26.2	27.7±17.7	36.5±0.2	1.4±0.5
Total	375	85.1±20.2	111.9±22.5	18.9±3.8	37.3±0.7	2.9±1.3
P value		0.001*(HS)	0.001*(HS)	0.002*(HS)	0.001*(HS)	0.001*(HS)

* *P*-value >0.05: Non significant (NS); *P*-value <0.05: Significant (S); *P*-value < 0.01: highly significant (HS)

Table 5: Chi square statistical analysis of gastrointestinal manifestations among patients in the current study.

Type \ Variable	Abdominal Pain	Vomiting	Diarrhea
Ethanol	5 (62.5%)	6 (75.0%)	0 (0.0%)
Methanol	12 (70.6%)	7 (41.2%)	2 (11.8%)
Benzodiazepines	3 (25.0%)	2 (16.7%)	0 (0.0%)
Trihexyphenidyl	4 (36.4%)	1 (9.1%)	0 (0.0%)
Tramadol	18 (25.7%)	26 (37.1%)	7 (10.0%)
Cannabis	14 (58.3%)	4 (16.7%)	9 (37.5%)
Cannabis & clonazepam	0 (0.0%)	0 (0.0%)	0 (0.0%)
Strox	22 (33.8%)	36 (55.4%)	15 (23.1%)
Voodoo	3 (33.3%)	4 (44.4%)	4 (44.4%)
Tropicamide & tramadol	37 (51.4%)	46 (63.9%)	34 (47.2%)
Cannabis & tropicamide & tramadol	4 (22.2%)	7 (38.9%)	0 (0.0%)
Gabapentin & tramadol	10 (24.4%)	15 (36.6%)	20 (48.8%)
Gabapentin & cough syrup	3 (25.0%)	3 (25.0%)	12 (100.0)
Heroin	4 (57.1%)	0 (0.0%)	0 (0.0%)
Total	139 (37.1%)	153 (40.8%)	103 (27.5%)
P value	0.001*(HS)	0.002*(HS)	0.001*(HS)

* *P-value* >0.05: Non significant (NS); *P-value* <0.05: Significant (S); *P-value* < 0.01: highly significant (HS)

Table 6: Chi square statistical analysis of neuropsychiatric manifestation among studied patients who were poisoned by different agents.

Type \ Variable	Coma	Seizures	Hallucination	Agitation
Ethanol	4 (50.0%)	0 (0.0%)	7 (87.5%)	5 (62.5%)
Methanol	5 (29.4%)	4 (23.5%)	7 (41.2%)	8 (47.1%)
Trihexyphenidyl	8 (66.7%)	0 (0.0%)	0 (0.0%)	3 (25.0%)
Parkinol	2 (18.2%)	0 (0.0%)	4 (36.4%)	9 (81.8%)
Tramadol	41 (58.6%)	8 (11.4%)	0 (0.0%)	21 (30.0%)
Cannabis	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Cannabis & clonazepam	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Strox	65 (100.0%)	2 (3.1%)	59 (90.8%)	10 (15.4%)
Voodoo	9 (100.0%)	0 (0.0%)	8 (88.9%)	0 (0.0%)
Tropicamide & tramadol	42 (58.3%)	5 (6.9%)	34 (47.2%)	47 (65.3%)
Cannabis & tropicamide & tramadol	7 (38.9%)	7 (38.9%)	11 (61.1%)	13 (72.2%)
Gabapentin & tramadol	0 (0.0%)	12 (29.3)	31 (75.6%)	37 (90.2%)
gabapentin& cough syrup	8 (66.7%)	0 (0.0%)	12 (100.0%)	10 (83.3%)
Heroin	4 (57.%)	1 (14.3%)	1 (14.3%)	1 (14.3%)
Total	195 (52.0%)	39 (10.4%)	174 (46.4%)	164 (43.7%)
P value	0.439(NS)	0.001*(HS)	0.163(NS)	0.015(S)

* *P-value* >0.05: Non significant (NS); *P-value* <0.05: Significant (S); *P-value* < 0.01: highly significant (HS)

Table 7: Chi square statistical analysis of skin and pupil manifestations among patients who poisoned by different agents in the current study.

Variable	Skin			Pupil		
	Normal	Cyanosis	Flushing	RRR	Constricted	Dilated
Ethanol	8 (100.0%)	0 (0.0%)	0 (0.0%)	7 (87.5%)	0 (0.0%)	1 (12.5%)
Methanol	13 (76.5%)	4 (23.5%)	0 (0.0%)	16 (94.1%)	0 (0.0%)	1 (5.9%)
Trihexyphenidyl	12(100.0%)	0 (0.0%)	0 (0.0%)	8 (66.7%)	3 (25.0%)	1 (8.3%)
Parkinol	9 (81.8%)	0 (0.0%)	2 (18.2%)	8 (72.7%)	0 (0.0%)	3 (27.3%)
Tramadol	50 (71.4%)	20 (28.6%)	0 (0.0%)	41 (58.6%)	28 (40.0%)	1 (1.4%)
Cannabis	24(100.0%)	0 (0.0%)	0 (0.0%)	21 (87.5%)	3 (12.5%)	0 (0.0%)
Cannabis & clonazepam	4 (44.4%)	5 (55.6%)	0 (0.0%)	8 (88.9%)	1 (11.1%)	0 (0.0%)
Strox	47 (72.3%)	13 (20.0%)	5 (7.7%)	46 (70.8%)	14 (21.5%)	5 (7.7%)
Voodoo	7 (77.8%)	2 (22.2%)	0 (0.0%)	2 (22.2%)	7 (77.8%)	0 (0.0%)
Tropicamide & tramadol	65 (90.3%)	6 (8.3%)	1(1.4%)	47 (65.3%)	24 (33.3%)	1 (1.4%)
Cannabis & tropicamide & tramadol	13 (72.2%)	3 (16.7%)	2 (11.1%)	14 (77.8%)	2 (11.1%)	2 (11.1%)
Gabapentin & tramadol	19 (46.3%)	22 (53.7%)	0 (0.0%)	23 (56.1%)	18 (43.9%)	0 (0.0%)
gabapentin& cough syrup	8 (66.7%)	4 (33.3%)	0 (0.0%)	9 (75.0%)	3 (25.0%)	0 (0.0%)
Heroin	2 (28.6%)	5 (71.4%)	0 (0.0%)	3 (42.9%)	4 (57.1%)	0 (0.0%)
Total	281(74.9%)	84 (22.4%)	10 (2.7%)	253(67.5%)	107 (28.5%)	15 (4.0%)

Table 8: The distribution of arterial blood gas (ABG) results among patients in the current study.

Variable	ABG		
	Normal	Acidosis	Alkalosis
Ethanol	4 (50.0%)	4 (50.0%)	0 (0.0%)
Methanol	0 (0.0%)	17 (100.0%)	0 (0.0%)
Benzodiazepines	12 (100.0)	0 (0.0%)	0 (0.0%)
Trihexyphenidyl	10 (90.9%)	0 (0.0%)	1 (9.1%)
Tramadol	27 (38.6%)	40 (57.1%)	3 (4.3%)
Cannabis	14 (58.3%)	9 (37.5)	1 (4.2%)
Cannabis & clonazepam	0 (0.0%)	6 (66.7%)	3 (33.3%)
Strox	24 (36.9%)	41 (63.1%)	0 (0.0%)
Voodoo	4 (44.4%)	5 (55.6%)	0 (0.0%)
Tropicamide & tramadol	32 (44.4%)	20 (27.8%)	20 (27.8%)
Cannabis & tropicamide & tramadol	17 (94.4%)	0 (0.0%)	1 (5.6%)
Gabapentin & tramadol	37 (90.2%)	2 (4.9%)	2 (4.9%)
gabapentin& cough syrup	10 (83.3%)	1 (8.3%)	1 (8.3%)
Heroin	3 (42.9%)	4 (57.1%)	0 (0.0%)
Total	205 (54.7%)	138 (36.8%)	32 (8.5%)

Discussion

Drug abuse is one of the most serious threats in several countries (Lim et al., 2012), so this retrospective study was aimed to estimate the incidence of acute toxicity of abused drugs at Poison Control Center (PCC) of Minia University Hospital. The present study was conducted on 375 patients of age from 6 months to 58 years, 71.5% of patients were adult (>19 years), 26.1% were adolescents (10- 19 years) and 2.4% were children (< 10 years) (table 1) which were similar to (Zaki et al., 2019) who reported that 49.6 % of cases in age group 18- 40 years and 27.5 % of cases in age group 2- 18 years. This can be explained by the fact that at the age of 18, people begin to miss their family's interest especially in males.

Most of the cases were males (99.2 %) versus 0.8% for females because males always try to imitate their friends but female usually refuse bad habits. These results are in agreement with the results published by (El-Sawy et al., 2010).

In agreement with the results published by Sundquist et al., (2016), the current study showed that 70.1 % of patients lived in urban areas, 29.9 % lived in

rural areas and 91.5 % of patients were unemployed, 8.5 % were employed. 41.9 % of patients had intermediate qualifications, 41.1 % had high education and 16.8 % were illiterate. This can be explained by the depression that may occur to these patients because of unemployment in spite of they having high education or intermediate qualification.

54.7 % of patients were single, 39.5 % were married and 5.9 % were widows and divorced. These results were similar to results published by El-Sawy et al., (2010) & Boulos et al., (2013).

As regards the mode of acute toxicity, there was a significant increase in accidental overdose in comparison with suicidal mode (p 0.000). The accidental toxicity occurred taken by mistake in children (2.4%) or due to overdose in addicts (69.9%) these were in agreement with Vallersnes et al., (2016) who reported that 94% of patients were accidental toxicity and 4% were suicidal. Suicide might occur due to psychological disorders caused by addiction for a long time or due to severe withdrawal symptoms but in

Islamic countries, suicide was decreased because it is forbidden by Islam (Pritchard and Amanullah, 2007). According to the outcome of patients in this study, (91.7 %) of patients improved and discharged, while 8.3 % died.

Lord et al., (2011) showed that the most common substance used was tramadol. The current study detected that tramadol is still the most favorite substance among drug addicts either singly or combined with another drug; so the most common substance in this study was tramadol & tropicamide (19.20 %), followed by tramadol (18.67 %), followed by strox (17.33 %). This is due to the discovery of new combinations used for addiction and the formation of a synthetic cannabinoid like strox which is formed by adding atropine and ketamine to cannabis to increase its effect; However, Ghanem et al., (2005) reported that the most common substance is cannabinoid (19 %).

The majority of patients died from acute toxicity of heroin (85.7 %) due to depression of respiratory center, followed by methanol toxicity (23.5 %) as the patients who have taken methanol usually arrived at poison control center late after severe metabolic acidosis occurred, then synthetic cannabinoid (voodoo) had mortality rate (22.2 %), tramadol (12.9 %), combined drugs like Gabapentin & tramadol (9.8 %), Cannabis & tropicamide & tramadol (5.6 %), tropicamide & tramadol (4.2 %). Shadnia et al; (2013) & Morizio et al; (2017)

The number of days that patients have been in the hospital ranges from 1- 8 days. The longest duration of hospital stay occurred in methanol toxicity (mean 6.12), followed by tropicamide & tramadol (3.69), then tramadol (3.46). This can be explained as patients presented to hospital with severe clinical manifestation so need to be treated in intensive care and after improvement they moved to inpatient wards these in agreement with (Zaki et al; 2019).

Clinical examination includes vital signs, central nervous system (CNS), gastrointestinal system (GIT), skin, and pupil's examination. As regard vital signs, majority of patients had normal vital signs except low grade fever occurred in parkinol, Cannabis & tropicamide & tramadol and strox toxicity (38.05, 37.67 and 37.93 respectively) (Nicholasa et al 2017). Mild tachycardia might occurred in Trihexyphenidyl and tropicamide & tramadol combination toxicity (98.45 and 93.31 respectively), but severe tachycardia (113), hypotension (84.29) and tachypnea (27.71) occurred in heroin.

Coinciding with results published by (Karayel et al., 2010) current results showed that GIT manifestation (vomiting and abdominal pain) was the commonest symptoms in alcohol toxicity (methanol, ethanol) followed by disturbed conscious level, this was explained as most patients of acute alcoholic toxicity arrived Minia University Poison Control Center early but patients who arrived late usually presented with coma.

In agreement with (Ho et al., 2015) the current study revealed that the commonest manifestation of acute benzodiazepine poisoning was disturbed conscious

level. But the commonest clinical presentation of acute toxicity of parkinol was CNS (hallucination and agitation) because of the anticholinergic mechanism (Harris et al; 2009).

The current study reported that the main clinical manifestation of tramadol toxicity was disturbed conscious level, cyanosis and vomiting in agreement with (Salmi 2016). Synthetic cannabinoid manifested mainly by disturbed conscious level, hallucination and GIT manifestation, this occurred due to presence of atropine, ketamine and unknown additives Sobh and Sobh 2020. The common clinical presentation of combined drugs was CNS (coma, hallucination and agitation) Zaki et al; 2019

Heroin toxicity manifested by cyanosis, constricted pupil and disturbed conscious level which was the classical manifestations of opioid toxidrome. These results were similar to results published by Cobaugh et al., 2014.

According to the effect of acute toxicity of abused drugs on arterial blood gases, metabolic acidosis common in alcoholic toxicity especially methanol, 100 % of patients admitted to Minia University Poison Control Center with acute methanol toxicity had severe metabolic acidosis due to formation of formic acid during its metabolism and inhibition of cellular respiration which lead to accumulation of lactic acid similar to results reported by Paasma et al., 2009. On the other hand tramadol and synthetic cannabinoid (strox and voodoo) toxicity lead to respiratory acidosis (57.1 %, 63.1 % and 55.6 respectively) due to inhibition of respiratory center and decrease ventilation in agreement with Borron (2016) and Alon & Saint-Fleur (2017).

37.5 % of patients with acute cannabis toxicity had metabolic and respiratory acidosis; this was explained as most of these patients were children poisoned by ingestion of cannabis, presented with repeated diarrhea and respiratory failure. Heizer et al; 2016 revealed that ingestion of cannabis in children lead to inhibition of respiratory center and hypoventilation which resulted in respiratory acidosis, some children who eaten cannabis presented to PCC by repeated diarrhea which lead to metabolic acidosis.

Coinciding with results published by Henry 2000 the current study showed that 57.1 % of patients with acute heroin toxicity had respiratory and metabolic acidosis, due to depression of respiratory center which lead to respiratory acidosis, severe hypoxia lead to metabolic acidosis.

Conclusion

Drug abuse is a dangerous problem in several countries, combined drugs abuse is now more common than tramadol alone, and incidence of synthetic cannabinoid is increased.

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السمية الحادة للأدوية المخدرة بمركز مكافحة السموم بالمنى

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الملخص العربى

المقدمة: يعتبر تعاطي المخدرات من أخطر التهديدات في العديد من البلدان، والسمية الحادة لهذه الأدوية أكثر شيوعاً في معظم مراكز مكافحة السموم. **الهدف من البحث:** تحدف هذه الدراسة الى دراسة حالات السمية الحادة للأدوية المخدرة. **طريقة البحث:** أجريت هذه الدراسة بأثر رجعي على ٣٧٥ مريضاً تم تقديمهم إلى مركز مراقبة السموم بمستشفى جامعة المنيا في الفترة من ١ يناير ٢٠١٧ إلى ٣١ يناير ديسمبر ٢٠١٩. تم جمع البيانات الخاصة بالمعلومات الديموغرافية الاجتماعية، وأنواع السموم، وطريقة السمية، والمظاهر السريرية، والفحوصات. **وقد النتائج:** عدد المرضى ٣٧٥ مريض يتراوح أعمارهم من ستة شهور الى ثمانية وخمسون عام والمدة التي قضاها المرضى بالمستشفى تتراوح بين يوم الى ثمانية أيام وأن الأدوية المركبة هي الأكثر شيوعاً ١٩,٢% ومعظم المرضى من الذكور ٩٩,٢% ويعيشون في المناطق الحضرية ٧٠,١% والعاطلين ٩١,٥% والحالة الزوجية غير متزوج ٥٤,٧% و ٤١,٩% من المرضى لديهم مؤهل متوسط، والسمية العرضية عند المدمنين هي الأكثر شيوعاً ٦٩,٩%. وفيما يتعلق بالمظاهر السريرية كان لدى معظم المرضى علامات حيوية مستقرة ومعدلات طبيعية من غازات الدم، وكانت الغيبوبة هي أكثر الأعراض شيوعاً. وقد توفي ٨,٣% من عدد المرضى بينما عاش ٩١,٧%. **الخلاصة:** تعاطي المخدرات مشكلة خطيرة في العديد من البلدان وأن ادمان المواد المركبة والسمية الحادة هي الأكثر شيوعاً كما زاد معدل ادمان القنب الصناعي.