

ASSESSMENT OF ACUTE POISONING AMONG CHILDREN IN DAMIETTA GOVERNORATE

By

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ABSTRACT

Background: Unintentional toxicology represented an important health problem in pediatrics. However, there was no appropriate map helping in design of proper preventive strategies.

Objective: Investigating the pattern of acute toxicity of children aged 1–18 years in Damietta governorate.

Subjects and methods: The study included children presented to Emergency Department of Damietta Poison Control Center (PCC) during the period from January 2015 to December 2015. In all children, the following parameters were studied: mean age, sex, residence, occupation, route of exposure, manner of poisoning, time elapsed between exposure to toxin and hospital arrival, past medical history, family history, seasonal distribution, admission place (ED, inpatient, ICU, or referral); and outcome (Improvement, referral and death). Clinical and Investigational aspect of the study included general examination, systemic examination and investigations (laboratory, ECG, Plain chest X-ray, Plain abdominal X-ray, CT and/or MRI in cases of coma or unexplained etiology). Curative aspect of the study included emergency measures, decontamination, enhancement of elimination, and administration of specific therapy).

Results: There was a statistically significant difference between studied groups as regard gender distribution. Residence was rural in 78.4% and urban in 21.6%. The most common toxic agent(s) were insecticides (46.6%), hydrocarbons (24.1%), corrosives (19.8%) and medicinal agents (9.5%). The toxicity was mild in majority of children (72.4%), and the severity of toxicity increased with increasing age. The delay time was less than an hour in the majority of children (58.6%). The oral route was the most common (69.0%) and oral route intoxication increased with increasing age. Intoxication was accidental in the majority of studied children (84.5%) and no suicidal cases below the age of 6 years. Location of toxicity in studied children was home in the majority of subjects (84.5%) and outside home (15.5%), with a statistically significant difference between them. Outcome revealed that 30.2% and 69.8% were discharged from Emergency Department. The discharge rate from Emergency Department decreased with increasing age.

Conclusion: The present study provided a road map for the pattern of childhood toxicity in Damietta governorate. It is the first step to explore the magnitude of the problem in this area of Egypt. Future efforts are needed to complete the map with development of effective preventive strategies.

Keywords: Child, poisoning, insecticides, accidental.

INTRODUCTION

Poisoning can cause injury or death due to a toxic substance. The extent of injury depends on the amount of the poisonous material, the extent of

absorption and distribution, and the innate power of the poison (Kivist? et al., 2008-a).

Toxic compounds may be ingested or inhaled either accidentally or deliberately. Accidental poisoning can occur at any

age, but is much more common in children. Peak incidence is around the age of 2 years, and boys are at more risk than girls. Most incidents (80–85%) occur in the child's home and, in many cases, the substances involved have not been stored in their usual place or have been put into a different container (Torgerson *et al.*, 2015). Household products are more commonly ingested than drugs by children and seasonal variability has been described. Pesticides and weed killers are more commonly ingested in spring, berry poisoning occurs in autumn, and cough and cold remedies are more commonly ingested in winter. Deliberate poisoning is more common in adults, but is increasing in the teenage population. The incidence of analgesic ingestion has particularly increased. Depression and deliberate self-harm are often found concurrently with analgesic overdose, and the particular needs of this population differs from adults. Poisoning accounts for a very small proportion of deaths in children under 10 years of age. This declining proportion of deaths in children may be attributable to the widespread introduction of child-resistant closures on containers. However, other factors, including greater emphasis on safety in the home, improved access to information on poisons and improved treatment may also contribute to reducing mortality (Riordan *et al.*, 2002).

The aim of this study was to assess the problem of acute toxicity among children in Damietta Governorate.

SUBJECTS AND METHODS

This study was conducted on cases of acute toxicity between children of both sexes, and different ages from age of one year to age of eighteen years old, referred

to Damietta Poison Control Center, during the period from January 2015 to December 2015.

Assessment of the acute toxicity was based on history of exposure to the toxin, time elapsed between exposure and referral, any treatment received, and history of previous or present illness. Clinical picture included different symptoms and signs of the particular poisonous substance involving the specific manifestations of each toxin, i.e. the toxidrome, and specific toxicological analysis whenever available.

In all children, the following parameters were studied: mean age, sex, residence, occupation if present, route of exposure, manner of poisoning, time elapsed between exposure to toxin and hospital arrival, past medical history, family history, seasonal distribution, admission place (emergency medicine department, inpatient, intensive care unit, or referral), and outcome (Improvement, referral and death). Clinical and investigational aspects of the study included general examination, systemic examination, and investigations (laboratory, ECG, plain chest X-ray; plain abdominal X-ray; and CT and/or MRI in cases of coma or unexplained etiology). Curative aspects of the study included emergency measures, decontamination, enhancement of elimination, and administration of specific therapy.

Statistical analysis: The collected data were organized, tabulated and statistically analyzed using both Microsoft office excel 2010 (Microsoft®; USA) and statistical package for social science version 20, running on IBM-compatible computer. Chi square (X^2) was used for

comparison between groups for qualitative data. P value < 0.05 was considered statistically significant.

RESULTS

The present study included 116 children; 40 of them (34.5%) were in group 1 (from 1 to 3 years); 20 (17.2%) in group 2 (4-6 years); 19 (16.4%) in group 3 (7-12 years), and finally 37 children (31.9%) in group 4 (13-18 years). These data revealed that the higher incidence of intoxication were in first and 4th groups respectively). Males were 49 children, representing 42.2% of studied children; while females were 67 children (57.8%). There was a statistically significant difference between studied groups as regards gender distribution (males represented 30.0%, 20.0%, 36.8% and 37.8% of groups 1, 2, 3 and 4 respectively). Residence was rural in 91 children (78.4%) and urban in 24 children (21.6%); with insignificant difference between studied groups (Table 1).

The most common toxic agent were insecticides (54 children; 46.6%); hydrocarbons in 28 children (24.1%); corrosives (23 children; 19.8%) and medicinal agents (11 children; 9.5%). There was statistically no significant difference between the studied groups (Table 2).

The higher incidence of intoxication was in May (22 children; 19.0%), then August (19 children; 16.4%), followed by March (12 children; 10.3%), and there was statistically non-significant difference between studied groups.

The severity of poisoning was mild in majority of children (72.4%), moderate in 32 children (27.6%). There was a

statistically significant increase of mild toxicity in groups 1 and 2 (85.0, 80.0% respectively) when compared to groups 3 and 4 (73.7% and 54.1% respectively). The severity of toxicity increased with increasing age. The delay time between intoxication and arrival to emergency department was less than an hour in the majority of children (68; 58.6%), 1 – 6 hours in 43 children (37.1%), more than 6 hours in 3 children (2.6%), and unknown in 2 children (1.7%), with non-significant difference between studied groups. The major route of exposure was the oral route (80 children; 69.0%). Other routes (e.g., skin and respiratory) were in 36 children (31.0%) with a statistically significant increase of oral route in groups 4 & 3 (89.2% & 78.9% respectively) when compared to groups 2 and 1 (65.0% & 47.5% respectively) (Table 2).

The mode of intoxication was accidental in the majority of studied children (98 children; 84.5%), and suicidal in 18 children (15.5%). There was statistically significant increase of accidental routes in groups 1, 2 and 3 (100.0%, 100.0% and 94.7% respectively) when compared to group 4 (54.1%). These results indicated that, below the age of 6 years, no suicidal cases; while in group 7 to 12 years; there was only one child with suicidal attempt and last 17 suicidal attempts were in group 13 to 18 years. No case occurred in the present work. The location of toxicity in studied children was home in the majority of subjects (98 patients; 84.5%), and outside home in 18 subjects (15.5%). There was statistically significant differences between studied groups as regard to location of toxicity (home in 100.0%, 85.0%, 68.4% and 75.7% in

groups 1, 2 3 and 4 respectively) (Table 2).

Thirty five children (30.2%) and 81 children (69.8%) were discharged from Emergency Department with a statistically significant difference between studied groups. The discharge rate from emergency department decreased with increasing age (87.5%, 75.0%, 68.4% and 48.6% in groups 1, 2, 3 and 4 respectively) (Table 3).

Diabetes mellitus was reported in 1 child (0.9%), 6 children (5.2%) had positive past history of renal disease; 7 (6.0%) with liver disease; 5 (4.3%) with heart disease, 14 children had positive past history of surgery; 8(6.9%) positive for blood transfusion, and 53 children (45.7%) had past history of drug therapy, 4 children (3.4%) had positive family history for familial disease, and 29 children (25.0%) had positive family history for psychosocial troubles. There

was statistically significant difference between studied group as regards past history of surgery and blood transfusion and for family history of psychosocial troubles (Table 4).

High percentage of studied children had normal consciousness (72.4%), while 27.6% were drowsy. The pupil was normal in 68.1% of children and constricted in 31.9%. Heart rate was normal in 75% of children and abnormal in 25.0%. Blood pressure was normal for age and sex in 69.8%, and abnormal in 30.2%. Temperature was normal in 65.5%, and abnormal in 34.5%. Respiratory rate was normal in 75%, and abnormal in 25%. There was no significant difference between studied groups as regards any of studied variables except for consciousness; where drowsiness significantly increased with increased age (Table 5).

Table (1): Distribution of studied children as regard to age group

Parameters		Groups				X ²	P value
		Group 1 (1-3 y)	Group 2 (4-6 y)	Group 3 (7-12y)	Group 4 (13-18y)		
No,%		40 (34.5%)	20 (17.2%)	19 (16.4%)	37 (31.9%)	-	-
Sex	Male	24(60.0%)	4(20.0%)	7(36.8%)	14(37.8%)	9.74	0.021
	Female	16(40.0%)	16(80.0%)	12(63.2%)	23(62.2%)		
Residence	Rural	34(85.0%)	17(85.0%)	16(84.2%)	24(64.9%)	5.93	0.12
	Urban	6(15.0%)	3(15.0%)	3(15.8%)	13(35.1%)		

y=year

Table (2): Characteristics of intoxication in studied children.

Parameters		Groups		Group 1 (1-3 y)	Group 2 (4-6 Y)	Group 3 (7-12y)	Group 4 (13-18y)	X ²	P value
		Group 1 (1-3 y)	Group 2 (4-6 Y)						
Toxic agent	Insecticide			23(57.5%)	6(30.0%)	8(42.1%)	17(45.9%)	8.78	0.45
	Hydrocarbon			10(25.0%)	7(35.0%)	4(21.1%)	7(18.9%)		
	Corrosives			6(15.0%)	5(25.0%)	5(26.3%)	7(18.9%)		
	Drugs			1(2.5%)	2(10.0%)	2(10.5%)	6(16.2%)		
Severity	Mild			34(85.0%)	16(80.0%)	14(73.7%)	20(54.1%)	10.0	0.019
	Moderate			6(15.0%)	4(20.0%)	5(26.3%)	17(45.9%)		
Delay Time (hours)	<1			27(67.5%)	12(60.0%)	13(68.4%)	16(43.2%)	11.10	0.27
	1-6			13(32.5%)	8(40.0%)	4(21.1%)	18(48.6%)		
	>6			0(0.0%)	0(0.0%)	1(5.3%)	2(5.4%)		
	Unknown			0(0.0%)	0(0.0%)	1(5.3%)	1(2.7%)		
Route of Exposure	Oral			19(47.5%)	13(65.0%)	15(78.9%)	33(89.2%)	16.71	0.001
	Other			21(52.5%)	7(35.0%)	4(21.1%)	4(10.8%)		
Mode of poisoning	Accidental			40(100%)	20(100%)	18(94.7%)	20(54.1%)	38.67	0.001
	Suicidal			0(0.0%)	0(0.0%)	1(5.3%)	17(45.9%)		
Poisoning Location	Home			40(100%)	17(85.0%)	13(68.4%)	28(75.7%)	13.27	0.004
	Outside home			0(0.0%)	3(15.0%)	6(31.6%)	9(24.3%)		

y=year

Table (3): Hospital admission in studied children.

Parameters	Group 1 (1-3 y)		Group 2 (4-6 y)		Group 3 (7-12y)		Group 4 (13-18y)		Total	
	N	%	N	%	N	%	n	%	n	%
Hospital Admission	5	12.5	5	25.0	6	31.6	19	51.4	35	30.2
Discharge From Emergency Department	35	87.5	15	75.0	13	68.4	18	48.6	81	69.8
$X^2 = 14.07, p = 0.003^*$										

n= number of cases, y=years

Table (4): Past and family history in studied children

Groups Parameters		Group 1 (1-3 y)		Group 2 (4-6 Y)		Group 3 (7-12y)		Group 4 (13-18y)		Total		P
		n	%	n	%	n	%	n	%	n	%	
Past history	DM	0	0	0	0	0	0.0	1	2.7	1	.9	0.54
	HTN	0	0	0	0	0	0.0	0	0.0	0	0.0	-
	RD	2	5	0	0	3	15.8	1	2.7	6	5.2	0.12
	LD	0	0	2	10	1	5.3	4	10.8	7	6.0	0.20
	HD	2	5	1	5	1	5.3	1	2.7	5	4.3	0.95
	Surgery	0	0	2	10	5	26.3	7	18.9	14	12.1	0.013
	BT	1	2.5	4	20	3	15.8	0	0.0	8	6.9	0.009
Dr. th.	16	40	9	45	10	52.6	18	48.6	53	45.7	0.79	
Family history	FD	2	5	1	5	1	5.3	0	0.0	4	3.4	0.58
	PsT	6	15	2	10	1	5.3	20	54.1	29	25.0	<0.001

DM= diabetes mellitus; HTN= hypertension; RD: renal disease; LD: liver disease; HD= heart disease; BT: blood transfusion; Dr. th. = drug therapy; FD: familial disease; Pst: psychosocial troubles. n= number of cases, y=years

Table (5): Clinical examination in studied children.

Groups Parameters		Group 1 (1-3 y)		Group 2 (4-6 Y)		Group 3 (7-12y)		Group 4 (13-18y)		Total		P
		N	%	n	%	N	%	n	%	n	%	
Conscious- ness	Normal	34	85	16	80	14	73.7	20	54.1	84	72.4	0.019
	Drowsy	6	15	4	20	5	26.3	17	45.9	32	27.6	
Pupil	Normal	22	55	17	85	15	78.9	25	67.6	79	68.1	0.08
	Constricted	18	45	3	15	4	21.1	12	32.4	37	31.9	
HR	Normal	28	70	14	70	16	84.2	29	78.4	87	75	0.60
	abnormal	12	30	6	30	3	15.8	8	21.6	29	25	
BP	Normal	23	57.5	17	85	15	78.9	26	70.3	81	69.8	0.12
	abnormal	17	42.5	3	15	4	21.1	11	29.7	35	30.2	
Temp.	Normal	22	55	13	65	15	78.9	26	70.3	76	65.5	0.27
	abnormal	18	45	7	35	4	21.1	11	29.7	40	34.5	
RR	Normal	28	70	14	70	16	84.2	29	78.4	87	75	0.59
	abnormal	12	30	6	30	3	15.8	8	21.6	29	25	

DISCUSSION

Poisoning is the third most common emergency of pediatrics leading to high social and economic burden. The high prevalence of acute poisoning in children is attributed to the curiosity of the children especially those aged less than 5 years to virtually taste or swallow harmful substances (**Rodgers et al., 2007**). The prevalence and types of poisoning vary considerably across the world and depend on socioeconomic status and cultural practices, as well as on local industrial and agricultural activities (**Peden et al., 2008**). Acute poisoning represents one of the most common medical emergencies in childhood. Determination of epidemiological characters of childhood poisoning is of paramount importance for preventive measures and treatment plane (**Hassan and Siam, 2014**).

The present study was designed to investigate the pattern of acute toxicity of children aged 1–18 years in Damietta governorate. Children belonging to age group of 1–6 years represented the largest proportion (51.7%); (34.5%) of them were in group 1 (from 1 to 3 years), and 17.2% were in group 2 (4-6 years), (16.4%) were in group (7-12 years), and finally children (31.9%) were in group 13-18 years. These results were in agreement with **Lamireau et al. (2002)** study. Also, several studies in Turkey reported that 51–73% of all poisoning cases were observed in children of 5 years of age (**Andiran and Sarikayalar, 2004; Bicer et al., 2007; Ozdogan et al., 2008 and Mutlu et al., 2010**). In addition, in USA, it was reported that peak poison exposure incidence was noted in 1- and 2-year-old children. Children younger than 4 years

comprised 46% of all poison exposures reported to US poison centers (**Litovitz et al., 2005**). The age distribution seems to be peak at two points i.e. with most poisonings occurring in children aged between one and 4 years, and then again in teenagers over the age of 14 (**Kivisto et al., 2008-b**).

In the present study, there was male predominance in the first group (aged 1 – 3 years), while, in the subsequent groups, there was female predominance. Generally, there was slight increase of females when compared to males (57.8% vs 42.2% respectively). These results contradicted with those reported by **Lin et al. (2003)** that there was male predominance of toxicity in their studied children. This study could be due to that, in some cultures, girls are expected not to engage in outdoor activities or to adopt risk-taking behavior. **Aggarwal et al. (2014)** reported a relatively higher proportion of boys than girls which was sustained across the all age groups. Male dominance could be due to their aggressive and exploratory nature, relatively more freedom in society, higher level of stress partially due to expectation and social responsibilities in family, and referral bias towards boys for hospitalization over girls (**Rajapakse et al., 2013 and Singh et al., 2013**).

In the present study, residence was rural in 78.4% of children, and urban in 21.6% of children, with a statistically non-significant difference between the studied groups. These results were comparable to those reported by **Hassan and Siam (2014)** that the number of poisoned children was higher in rural areas than that of urban areas. Also, **O'Connor (2005)**

stated that children poisoning admission rates have been consistently higher in rural areas than urban areas. This was probably due to, in urban areas many cases are treated in private hospitals (**Hassan and Siam, 2014**).

Agran et al. (2001) reported that poisoning of children up to the age of 10 years tends to be unintentional. In addition, these results were consistent with other results from Islamic countries. The low incidence of suicide could be associated with the strict forbiddance of suicide by Islam and the religious practice of the majority of the populations (**Mutlu et al., 2010**).

Hon and Colleagues (2005) also noted that most of these admissions involved unintentional poisoning. Compared with unintentional poisoning, patients who intentionally poisoned themselves were significantly older and were predominantly females. Furthermore, these results were in accordance with **Litovitz et al. (2005)** who reported that exposure reasons are presented by age group showing that unintentional general exposures predominate in younger children, comprising 91% of exposures in children younger than 6 years. These unintentional general exposures are unforeseen, unplanned events in children or adults without the ability to realize the danger of their actions. Also, results of the present study were in agreement with **Aggarwal et al. (2014)** who reported that it is unfortunate to see an increase in suicidal poisoning in adolescents probably related to the stress related to academic performance, peers, family, and social life.

Severity of intoxication was mild in majority of children (72.4%), and moderate in 27.6%. There were statistically significant increases of mild toxicity in groups 1 and 2 when compared to groups 3 and 4. These results indicated the severity of toxicity increased with increasing age. These results were in agreement with **Rajka et al. (2007)** who reported that most of the poisonings in their study were mild; and there was proportional correlation between severity of intoxication and age.

Delay time between intoxication and arrival to emergency department was less than an hour in the majority of children, 1 – 6 hours in 37.1%, more than 6 hours in 2.6%, and unknown in 1.7%, with a statistically non-significant difference between studied groups. These results were comparable to those reported by **Aggarwal et al. (2014)** who reported that 42% of patients presented within one hour of ingestion. However, it was observed that majority of the patients who reported early belonged to urban regions.

Location of toxicity in studied children was home in the majority of subjects (84.5%) and outside home in (15.5%), with a statistically significant difference. These results were in agreement with **Mendonca et al. (2016)** who reported that cases of intoxication in children less than 4 years of age were the most frequent, and the accidents occurred in the home. In addition, it had been reported that the domestic environment is the place where the child remains the greater part of the time, and is also the place with the highest number of accidents involving poisoning in the first 5 years of life (**Tavares et al., 2013**). **Siqueira et al. (2008)** also repor-

ted that 80.2% of poisonings occurred in the home. **Bentur et al. (2010)** related that, in 89.3% of cases, the residence was the place of occurrence; however.

The toxic agents found in the home, without adequate storage, may be transformed into a risk of accidents, as observed in a study in Spain (**Azkunaga et al., 2013**). In Brazil, **Lourenco et al. (2008)** observed that 81% of the accidents occur in the residence, with 65.4% involving 5-yearold children, and the parents or grandparents are present in 69.2% of the occurrences.

The most common toxic agents were insecticides (46.6%), hydrocarbons in (24.1%), corrosives in (19.8%), and medicinal agents in (9.5%). There were statistically insignificant differences between studied groups. These results were comparable to those reported by **Hassan and Siam (2014)** who reported that pesticides are the most common agent implicated in their poisoned children. The increased prevalence of insecticide toxicity can be explained by the fact that, Damietta governorate (especially new Damietta area) is one of the major agricultural areas in Egypt, and the easy access, inappropriate handling and usage of insecticides are common. In developing countries, where the economy is based on agriculture, in addition to poisoning by medications, cases involving other agents such as insecticides and venomous animals are frequent (**Mendonca et al., 2016**). In a study conducted in India, **Chowdhury et al. (2008)** verified that pesticides, mainly organophosphates, were the most frequent agents involved (53.3%), followed by chemical household products (33.7%), mainly kerosene (24%).

On the other hand, **Oprescu et al. (2012)** reported that the most common poisoning substances in this study were prescription and over-the-counter medication, alcohol, chemical products (i.e. household, automotive, and farm chemicals), and carbon monoxide. These results indicate the different epidemiology between different regions.

In the present work, poisoning by medication is the last category; and these results were in contradiction to those reported by other studies held in developing countries such as Serilanka (**Fernando, 2002**), Nepal (**Khadka, 2005**), and Ethiopia (**Ozdogan et al., 2008**), but in agreement with studies in Taiwan (**Lee et al., 2008**), other Asian countries, some western countries, and Turkey (**Mutlu et al., 2010**).

In the present work, hydrocarbons were reported in 24.1%. This were higher than that reported by **Hassan and Siam (2014)** who reported that, petroleum products were attributed to 13% of the cases of poisoning which was in agreement with other studies held in developing countries (**Akhtar et al., 2006**). In addition, **Aggarwal et al. (2014)** reported that hydrocarbons, insecticides and drugs were the most commonly identified agents of poisoning in their study. Among hydrocarbons, kerosene poisoning was most common. Kerosene ingestion was also noted to be the commonest cause of accidental poisoning in our study. This was observed in age category less than 6 years due to its mistaken identity as water when kept in soft drink bottles as is usually stored in rural area. All cases of kerosene poisoning in this study were successfully discharged

without complications. Other studies have reported kerosene as a common poisoning agent (Kohli *et al.*, 2008 and Venkatesh *et al.*, 2011)

30.2% of children were discharged after hospital admission and 69.8% were discharged from Emergency Department; with a statistically significant difference between studied groups. The discharge rate from Emergency Department decreased with increasing age. These results were in agreement with Hon and Leung (2010) who reported that most childhood poisoning cases are trivial and many do not require medical care. In addition, results of the present study were in agreement with Litovitz *et al.* (2005) who reported that only 10% of poison exposures in children younger than 6 years that were reported to poison centers were ultimately managed in health care facilities (HCFs). They added that, health care facility use is slightly higher in 6- to 12-year-old children (13% of cases are managed in HCFs) and substantially higher in teens (48%). The greater use of HCFs in teenage poison exposures is directly attributable to the large contribution of intentional poison exposure cases (46%) where, because of the intent as well as the greater severity, physician evaluation is more often required.

CONCLUSION

The present study provided a road map for the pattern of childhood toxicity in Damietta governorate. It is the first step to explore the magnitude of the problem in this area of Egypt. Future efforts are needed to complete the map with development of effective preventive strategies.

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تقييم التسمم الحاد بين الأطفال بمحافظة دمياط

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خلفية البحث: التسمم غير المتعمد يمثل مشكلة صحية هامة في الأطفال. وبالرغم من ذلك لا توجد خريطة مناسبة تساعد في تصميم الإستراتيجيات الوقائية المناسبة.

الهدف من البحث: صممت الدراسة الحالية بهدف فحص نمط التسمم الحاد لدى الأطفال في المجموعة العمرية من 1 – 18 عاما بمحافظة دمياط.

الأشخاص وطرق البحث: شملت الدراسة الأطفال المترددين على قسم الطوارئ في مركز مراقبة السموم بدمياط خلال الفترة من يناير 2015 إلى ديسمبر 2015. وفي جميع الأطفال، تمت دراسة المعايير التالية: متوسط العمر، الجنس، الإقامة، الوظيفة ان وجدت ، طريقة التعرض، كيفية التسمم، الوقت المنقضي بين التعرض للسموم والوصول للمستشفى، التاريخ الطبي السابق، التاريخ العائلي، التوزيع الموسمي، ومكان الحجز (قسم الطوارئ، القسم الداخلي، وحدة العناية المركزة، أو الإحالة) وكذلك مصيرها (التحسن، الإحالة أو الموت). وشمل الفحص السريري والمعمل الفحص العام، الفحص المنتظم والفحوصات (الفحوصات المعملية، تخطيط القلب، الأشعة السينية العادية على الصدر، الأشعة السينية العادية على البطن، والأشعة المقطعية و / أو أشعة الرنين المغناطيسي في حالات الغيبوبة أو غير المبررة). شمل الجانب العلاجي لهذه الدراسة ما يلي: تدابير الطوارئ، إزالة التلوث، تعزيز التخلص من السموم وإعطاء علاج محدد).

النتائج: أسفرت نتائج الدراسة عن وجود فروق دالة إحصائية بين مجموعات الدراسة طبقا لمتغير النوع . وكان قاطني الريف (78.4%)، قاطني المدن(21.6%). وكانت أكثر المواد تناولها هي المبيدات الحشرية (46.6%)، الهيدروكربونات بنسبة (24.1%)، المواد الحارقة (19.8%) والمواد الدوائية (9.5%). وكان التسمم من النوع البسيط لدى أغلبية الأطفال (72.4%) ووجد أن شدة التسمم تتناسب طرديا مع عمر الطفل، وكان زمن التأخر أقل من ساعة في معظم الاطفال (58.6%). وتناول

المادة السامة عن طريق الفم كان الأكثر شيوعاً (69%)، والتسمم عن طريق الفم يزيد بتقدم العمر. وكان التسمم حادث عرضي في معظم أطفال الدراسة (84.5%) ولم توجد حالات انتحارية في العمر أقل من 6 سنوات. وكان المنزل هو مسرح التسمم لدي غالبية اطفال الدراسة (84.5%)، وخارج المنزل (15.5%)، مع وجود فروق دالة احصائياً بينهم. وتم حجز (30.2%) من الأطفال بالقسم الداخلي، وصرف (69.8%) من قسم الطوارئ إلى المنزل مباشرة. وقد وجد أن معدل علاج الحالات بالقسم الداخلي يتناسب طردياً مع عمر الأطفال.

الإستنتاج: قدمت الدراسة الحالية خارطة طريق لنمط التسمم لدي الأطفال بمحافظة دمياط. وهذه أول خطوة لبيان حجم المشكلة في هذه المنطقة من مصر. ونحن في حاجة إلى جهود مستقبلية لتكملة هذه الخارطة وتطوير الإستراتيجيات الوقائية.