



IASP Special Interest Group (SIG) on the Prevention of Intentional Pesticide Poisoning

Bibliography: Middle East

Abdollahi, M., N. Jalali, et al. (1997). "A retrospective study of poisoning in Tehran." Journal of Toxicology - Clinical Toxicology **35 (4)**: 387-393.

Objective: To examine the causes and mortality of poisoning in Tehran. Methods: The 7000 poisoning cases referred to Loghman-Hakim Hospital in Tehran over six months in 1994 were evaluated retrospectively. Results: The overall female to male ratio was 1.8:1. Most poisonings occurred in the age range 2-6 y for children and 21-40 y for adults. Oral ingestion was the most common route of intoxication. In children, boys had a higher frequency of poisonings than girls. Most cases of children were referred to the hospital between 8 am and 8 pm. In adults referred to the hospital, there was little diurnal variation in poisoning presentations. In adults, drugs were the most common cause of intoxication (60.2%). Of these, benzodiazepines (24.5%) were the most frequent, followed by antidepressants (20.5%) analgesics (18%). Pesticide and opiate intoxications were also commonly observed. In children, after drugs (32.1%), hydrocarbons were the most frequent cause of poisoning (19.2%). Pesticide poisonings were most often fatal (19.2%), followed by barbiturates (18.6%) and opiates (16.2%). Organophosphate insecticides were responsible for 57% of total pesticide poisoning cases. Of the deaths, 87.5% were attributed to suicide. Conclusion: The majority of poisoning cases in adults occur intentionally and in children accidentally.

Abdollahi, M., N. Jalali, et al. (1999). "Pesticide poisoning during an 18-month period (1995-1997) in Tehran, Iran." Iranian Journal of Medical Sciences **24 (3-4)**: 77-81.

Objective: To determine the causes and mortality of poisoning due to pesticides and to assess the effects of variables such as age, season, sex and agent on poisoning frequency in Tehran. Methods: A total of 700 pesticide poisonings cases including those admitted to Loghman-Hakim Hospital (n=635) or called to the Drug and Poison Information Center (n=65) in Tehran over an 18-month period from April 1, 1995 to September 21, 1997 were reviewed. Results: The overwhelming majority of subjects (644 of 700, 92%) were adults. Thirty-six percent were 20-30 years old and 95% of the events were intentional poisoning with the remainder being accidental, occupational, or criminal cases. The most common route of pesticide exposure was by ingestion followed by dermal exposure and inhalation. There were seasonal variations of poisoning events with a higher frequency in the Spring (39%) and in Summer (35%). Severity was considered mild in 60%, moderate in 27% and severe in 13% of cases. The overall mortality was 7%. Sweating, slow pulse, nausea, vomiting, abdominal pain and respiratory difficulties were the most common clinical signs and symptoms. The majority of cases (55%) were hospitalized for one day. In all ingestions, gastric lavage was usually performed as the first procedure in hospital management, while ipecac syrup was never employed. Conclusion: Organophosphates are the main cause of pesticide poisoning and pesticide-related deaths in Iran.

Abdullat, E. M., M. S. Hadidi, et al. (2006). "Agricultural and horticultural pesticides fatal poisoning; the Jordanian experience 1999-2002." J Clin Forensic Med **13(6-8)**: 304-307.

A prospective autopsy study addressing fatal poisoning with agricultural and horticultural pesticides was undertaken in Jordan over a 4 year period. A total number of 140 deaths occurred during 1999-2002. The mean fatality rate was 0.68 case per 100,000 population and the age range was 2-55 years; mean 28.3 years with male to female ratio 1.03. The largest number of cases occurred in those 20-29 years (n=69, 49.3%) followed by the age group 30-39 years (n=34, 24.3%) and 40-49 years (n=17, 12.1%). Less than 3.0% of the total fatal poisoning was noticed in both children younger than 9 years of age and those in the age group 50-59 years, with no fatal poisoning in adults at the age 60 years and above. At least 64.3% of all pesticide fatalities were due to suicide with male: female ratio (1.37:1). Accidental and homicide poisoning resulted in 24.3% and 7.9% of the total fatalities, respectively; however, only five cases 3.6% of fatal poisoning were due to unknown pesticides. The main pesticide used was carbamates with 110 cases 78.6% followed by organophosphorus 23 cases 16.4%. The study showed that the present legislation on pesticides availability in Jordan failed to reduce the number of fatal pesticides poisoning since the number of fatal pesticides poisoning was increased from 25.3 to 35 cases per year over a 20 years period. Enforcement of a new legislation addressing the availability of agricultural and horticultural pesticides for self-harm, especially carbamates and organophosphorus, is the most important strategy in the long term to prevent fatal pesticides poisoning in Jordan.

Ahmadi, A., N. Pakravan, et al. (2010). "Pattern of acute food, drug, and chemical poisoning in Sari City, Northern Iran." *Hum Exp Toxicol* **29**(9): 731-738.

This descriptive and retrospective study was conducted at the poisoning ward of Imam teaching hospital, Sari, Iran, with the aim of evaluating the pattern of poisoning. Hence, the medical profiles of 2057 patients, who were admitted, were carefully reviewed during the period from April 2006 to March 2008 for 2 years. During this period, 2057 cases, 53.9% female and 46.1% male, were admitted with the indication of acute poisoning. The greatest proportion of poisoning occurred between the ages of 18 and 29 years, with suicidal intentions. Most cases of poisoning were intentional (85%). The most common agents involved in acute poisoning were drugs (77.7%), especially sedatives/hypnotics such as benzodiazepines, followed by opioid analgesics. Organophosphate and carbamate insecticides were the third major agent that induced poisoning. Twenty-seven patients (1.3%) who were mostly females and young adults died. Death mostly occurred due to organophosphate and carbamate insecticides (19 cases) poisoning, followed by sedatives/hypnotics like benzodiazepines (3 cases). High prevalence of intentional overdose and mortality among young adults requires considerable attention and further studies to find out the underlying causes. In addition, strict rules must be followed regarding the sale of central nervous system drugs and pesticides, particularly organophosphate and carbamate insecticides. Establishing poison information centers in different parts of the country, preparing national treatment guidelines, training healthcare providers, and ensuring easy availability of the antidotes are also recommended.

Akbaba, M., E. Nazlican, et al. (2007). "Etiological and demographical characteristics of acute adult poisoning in Adana, Turkey." *Hum Exp Toxicol* **26**(5): 401-406.

The objective of this study is to define the etiological and demographical characteristics of the patients applying to the emergency department in Faculty of Medicine, Cukurova University because of poisoning. This retrospective study was carried out by examining the records of 491 people who applied to the main emergency department in Faculty of Medicine, Cukurova University, with the complaint of poisoning between January 1, 2004 and December 31, 2004. It was determined that the reason why 491 of 20 817 persons (2.4%) applied during this term was because of poisoning: 159 (32.4%) of such patients were male and 332 of them (67.6%) were female. It was found that the average age of men was 27.1 +/- 10.5 years and that of women was 24.4 +/- 9.5 years ($P = 0.005$); 427 of poisoning cases (87.0%) happened intentionally as suicide attempts and 64 of them (13.0%) were accidental. The rate of suicide-purposed poisoning was higher in women and the rate of unintentional poisoning was higher in men ($P +/- 0.001$). The drugs were accountable for 71.1% of all poisoning cases and the pesticides were accountable for 18.9% of such cases. Poisonings increase during summers. The mortality rate in poisonings was found as 0.8%. The drugs and pesticides in Ckurova region constitute 90.0% of all poisoning cases. The mortality rate in poisoning will be decreased by training the physicians employed in the emergency department about poisoning by drugs and pesticides.

Alptekin, D., H. U. Luleyap, et al. (2006). "The sister-chromatid exchange and acetylcholine esterase enzyme levels among patients with insecticide intoxication in the Cukurova region, Turkey." *Acta Med Okayama* **60**(2): 121-126.

This study included 45 patients with intentional insecticide intoxication and 21 with accidental intoxication who were treated at the First-Aid and Emergency Department of Balcali Hospital at the Faculty of Medicine in the Cukurova University, Adana, Turkey, while the control group consisted of 25 people selected from university personnel known to be healthy. Patients with a history of X-ray exposure in the last 6 months or of any virus disease as well as continuous drug users and smokers were excluded, leaving a total of 49 patients. Acetylcholine esterase (Pseudocholinesterase) enzyme (AChE), sister-chromatid exchanges (SCE), the mitotic index (MI), and the replication index (RI) were evaluated. Blood samples were cultured for SCE evaluation and sera separated for AChE levels. Insecticide exposure was generally intentional for suicide in adolescents and at older ages, but accidental for children. AChE levels were found to be significantly lower in organophosphorus (OP) and carbamated (CB) insecticide poisoning groups in comparison with the control group ($p < 0.001$), while the pyrethroid (PY) group was not statistically different for the AChE effect ($p > 0.05$). SCE was found to be significantly higher in OP and CB groups ($p < 0.001$), while the PY and control groups were statistically similar for SCE levels ($p > 0.05$). This study showed an increase in SCE in response to orally ingested insecticides. These findings indicate that insecticide exposure results in cell abnormalities, with resulting impediments to the division and replication of cells, as

suggested by MI decreases and RI increases, while the speed of the division cycles of stimulated cells increases.

Boshehri, B., S. Salimi, et al. (2012). "Mortality from acute poisoning in Urmia: A three- year retrospective study." Iranian Red Crescent Medical Journal **14**(12).

Cengiz, M., Z. Baysal, et al. (2006). "Characteristics of poisoning cases in adult intensive care unit in Sanliurfa, Turkey." Saudi Med J **27**(4): 497-502.

OBJECTIVE: The aim of this prospective study was to analyze the rate and characteristics of acute poisoning cases admitted to adult intensive care unit (ICU). METHODS: All cases of acute poisoning admitted to ICU of the Harran University Hospital, Turkey, between July 2002 and May 2005, were included in this study. Clinical, laboratory, and demographic characteristics, type of poison and patient's outcomes were recorded. RESULTS: There were 86 poisoning cases among 844 patients admitted to the ICU. The mean age was 26 +/- 9 years and the majority of the patients (56.9%) were 15-24 years of ages. Eighty percent of acute poisonings were self-inflicted and 65.2% of these patients were singles. Medical drugs overdose were the major cause (51.2%) of intoxication followed by agricultural chemicals (37.2%). The most frequently involved medicinal drugs were benzodiazepines, antidepressants and analgesics. Eleven patients in pesticides-rodenticides and 9 patients in other medical drugs poisoning have required mechanical ventilation between 1-12 days. The duration of the intensive care stay was 6.4 +/- 4.3 days. Five cases (5.8%) with acute poisonings were fatal. CONCLUSION: There was a high rate of suicides attempt in young singles, predominantly female population. These data were the highest agricultural activity of the country that provide important information about the characteristics of poisoning at the city.

Ghazinour, M., H. Emami, et al. (2009). "Age and gender differences in the use of various poisoning methods for deliberate parasuicide cases admitted to loghman hospital in Tehran (2000-2004)." Suicide Life Threat Behav **39**(2): 231-239.

Different methods of poisoning used by individuals with the diagnosis of parasuicide admitted to the Loghman Hospital, Tehran, from 2000 to 2004 were investigated, with particular focus on gender and age differences. Drugs, pesticides, and other agricultural chemicals (women: 12.7%, men: 9%) were the most commonly used methods. In males, the percentage of use of drugs increased with age, but the frequency of pesticides use decreased with age. In females, drugs were most often used in the youngest age group, whereas the use of pesticides was lowest in the youngest age category. Females outnumbered males, especially in the youngest age group of 10 to 19 years olds. Drugs and pesticides were the substances used most often for parasuicide in each age group regardless of gender.

Giorgi, D. F. and A. Jagoda (1997). "Poisoning and overdose." Mount Sinai Journal of Medicine **64** (4-5): 283-291.

The differential diagnosis of all patients with altered mental status must include drug toxicity. In particular, intentional or unintentional overdosing and or poisoning are common emergency department presenting complaints. A comprehensive approach to managing these patients must incorporate

aggressive information gathering, a careful physical examination looking for toxic syndromes, and diagnostic testing. Proper decontamination is the key to effective management, as is the use of specific antidotes when indicated.

Goksu, S., C. Yildirim, et al. (2002). "Characteristics of acute adult poisoning in Gaziantep, Turkey." *Journal of Toxicology - Clinical Toxicology* **40** (7): 833-837. Background: The objective of this prospective hospital-based study was to evaluate the rate and characteristics of acute human poisoning in our province (Gaziantep City, Turkey). Methods: All cases of acute human poisonings admitted to the emergency department of the Gaziantep University Hospital, Gaziantep, Turkey, between January 2000 and December 2001, were included in the study. The rate and causes of mortality from poisoning as well as demographic data of the patients were investigated. Results: There were 179 (0.7%) poisoning cases among 25,605 patients who admitted to the emergency department. Of the poisoning cases, 64.3% were female and 35.6% were male patients. The poisoning made a peak between the ages of 16 and 25. The majority of poisonings resulted from oral ingestion with deliberate intake accounting for 78.7% of the cases. Most of the suicide attempt cases were also females. Analgesics were the most common agents (42.4%) among the drugs incriminated in poisoning. Twenty-four patients (13.7%) were admitted to intensive care unit, of whom 42% were female and 58% were male patients. Drugs for suicide attempts were the main cause of poisoning in the patients who admitted to intensive care unit. Five patients (2.8% of all cases) died in the intensive care unit. Conclusions: These data provide important preliminary information on the pattern of symptomatic poisonings in this south-east part of our country.

Guloglu, C. and I. H. Kara (2005). "Acute poisoning cases admitted to a university hospital emergency department in Diyarbakir, Turkey." *Hum Exp Toxicol* **24**(2): 49-54.

AIM: This study was conducted to determine the biological effects of acute poisoning, the nature of agents involved and the pattern of poisoning in Diyarbakir City, in the Southeast Anatolian region of Turkey, during 2000. METHOD: Hospital records of all admissions to the Emergency Department (ED) of Dicle University Hospital following acute poisoning were revised and all data from January to December 2000 were analysed. The present study included 44 (25.9%) male (M) and 126 (74.1%) female (F), a total of 170 patients. The M/F ratio was 1.0/3.5. RESULTS: The mean age of patients was 23.3±6.3 years; 63 (37.1%) of them were under 20 years of age and 147 (86.5%) were under 30 years of age. Most intoxication cases occurred during the summer season (93 of 170 patients). On a monthly basis, admissions during April, May and July were most common (24, 26 and 30 patients, respectively). Sixty-two (36.5%) cases involved accidental poisoning while 108 (63.5%) involved deliberate poisoning. In suicide attempts, intoxications were more common in females (77 cases, 71.3%, $P < 0.05$), and in unmarried persons (74 cases, 68.5%, $P < 0.05$). There were only two deaths (1.2%) among the 170 admissions of acute poisonings. One of the deaths was due to pesticide poisoning and the other was due to medical drug abuse. Tachycardia (59, 34.7%), vomiting (55, 32.4%) and loss of consciousness (42, 24.7%) were frequently observed, whereas

hypersecretion (15, 8.8%), bradycardia (5, 2.9%), convulsion (8, 4.7%) and hypertension (2, 1.2%) were less frequent. Among pesticide poisoning cases the incidence of convulsion (6, 10.2%), miosis (6, 10.2%), and hypersecretion (12, 20.3%) were significantly higher when compared to other cases ($P=0.018$, $P < 0.0001$ and $P < 0.0001$, respectively). CONCLUSION: In the Southeast Anatolian region of Turkey, pesticide intoxication is common especially among young, unmarried females and most of these intoxications are intentional self-poisonings. The annual rate of poisoning-related ED visits and mortality were found to be within expected ranges; psychoactive agents being the most common cause.

Hosseiniyan, A., N. Pakravan, et al. (2011). "Aluminum phosphide poisoning known as rice tablet: A common toxicity in North Iran." *Indian J Med Sci* **65**(4): 143-150.

BACKGROUND: Aluminum phosphide (ALP) is a highly effective insecticide and rodenticide used frequently to protect stored grain. Acute poisoning with this compound is common in some countries including India and Iran, and is a serious health problem. Aim: The objective of this study was to survey ALP poisoning locally known as "Rice Tablet" and the outcome in a referral poisoning hospital in Mazandaran province, northern part of Iran.

MATERIALS AND METHODS: The study was a cross-sectional study from March 2007 to February 2008. Records of all patients admitted and hospitalized to a referral teaching hospital during the 2 year period were collected. Information including gender, age, cause of toxicity, amount of AIP consumed, route of exposure, time between exposure and hospital admission, signs and symptoms of toxicity at admission, therapeutic intervention, laboratory tests, and outcome were extracted from the patients' notes. Patients who died and survived were compared using appropriate statistical tests. RESULTS: During the two-year period, 102 patients, 46 men and 56 women with mean (+/-SD) age 28.5 +/- 12.4 year were admitted with ALP poisoning. The most common signs and symptoms at admission were nausea (79.4%), vomiting (76.5%), and abdominal pain (31.4%). 41.1% of the patients showed metabolic acidosis. Suicidal intention was the most common cause of poisoning (97%) leading to 19 (18.6%) deaths. Compared with the patients who survived, those who died had taken higher amount of ALP tablet (2.2 +/- 2.4 vs. 1.4 +/- 1.0, $P < 0.05$), had poor liver function test ($P < 0.0001$) and severe metabolic acidosis (pH: 7.17 +/- 0.19 vs. 7.33 +/- 0.08, $P < 0.0001$). CONCLUSION: ALP poisoning is a common toxicity in Iran causing high mortality. This is a serious health problem in agricultural region where ALP is readily available. Withdrawal of ALP tablet from the market and introduction of safer products as rodenticides and insecticides is recommended.

Islambulchilar, M., Z. Islambulchilar, et al. (2009). "Acute adult poisoning cases admitted to a university hospital in Tabriz, Iran." *Hum Exp Toxicol* **28**(4): 185-190.

The aim of our study was to investigate the etiological and demographical characteristics of acute adult poisoning cases admitted to a university hospital in Tabriz, Iran. This retrospective study was performed on 1342 poisoning admissions to a university hospital from 2003 to 2005, by data collection from the medical records of patients. Poisonings were 5.40% of the total admissions. There was a predominance of female patients (55.7%)

compared to male patients (44.3%) with a female-to-male ratio of 1.2:1. Most poisonings occurred in the age range of 11-20 years (38.9%). Drugs were the most common cause of poisonings (60.8%). Among the drug poisonings, benzodiazepines (40.31%) were the most frequent agents, followed by antidepressants (31.98%). The seasonal distribution in poisoning patients suggested a peak in spring (28%) and summer (27.5%). In 9.8% of cases accidental and in 90.2% intentional poisonings were evident. Most suicide attempts were made by women (58.51%) and unmarried people (51.4%). The mean duration of hospitalization was 3.02 +/- 2.8 days. There were 28 (2.3%) deaths; the majority (13 cases) was due to pesticides. This was a university hospital-based study, so these results may not be representative of the general population. Despite this drawback, these data still provide important information on the characteristics of the poisoning in this part of Iran. To prevent such poisonings, the community education about the danger of central nervous system-acting drugs and reducing the exposure period of people to pesticides are recommended.

Kir, M. Z., G. Ozturk, et al. (2013). "Pesticide poisoning cases in Ankara and nearby cities in Turkey: an 11-year retrospective analysis." J Forensic Leg Med **20**(4): 274-277.

Since they are available in open markets and pharmacies, pesticides have been widely used all over the country. (Un)intentional poisoning with these compounds is one of the most common causes of chemical poisoning, especially in rural agricultural areas. Pesticide poisonings reported by various countries showed that it is a worldwide health problem with 250,000-370,000 associated deaths each year. In this study, medico-legal deaths between the years 2001 and 2011 in Ankara and nearby cities in Turkey were investigated retrospectively. The autopsies were partly carried out by Ankara Branch of Council of Forensic Medicine. Data were collected from reports of the Morgue Department whose toxicological analyses were performed in the Chemistry Department. The data revealed that 70 cases out of 10,720 autopsied ones had been attributed to fatal pesticide poisoning. The age range was 1-80 years (mean +/- SD, 41.33 +/- 17.42 years). Most of the cases (60%) were reported from Ankara. Insecticides were the most common (94%) cause of fatal pesticide poisonings, most of them (63%) being organophosphate insecticides. The percentages of pesticide-induced deaths are quite high in our society and should therefore not be underestimated. Accordingly, intensive efforts to reduce occupational and intentional pesticide poisonings are urgently needed in Ankara and nearby cities.

Moghadamnia, A. A. and M. Abdollahi (2002). "An epidemiological study of poisoning in northern Islamic Republic of Iran." East Mediterr Health J **8**(1): 88-94.

We examined the causes and mortality of poisoning in the province of Mazandaran. In all, 1751 poisoning cases referred to four main hospitals over a three-year period (1997-2000) were included. More poisoning cases were females (55.5%) than males (45.5%) but the proportional mortality for males was greater than for females (65% versus 35%). The greatest proportion of poisonings occurred between the ages of 16 and 25 years. Most frequent was intentional poisoning, followed by accidental and occupational poisoning. Medicines were the most common cause, followed

by chemicals such as pesticides. Poisoning by opiates, aluminium or zinc phosphide, rodenticides, petroleum and ethanol intoxication was also observed. Pesticide poisoning was most frequently fatal.

Mohseni Saravi, B., A. Kabirzadeh, et al. (2013). "Prevalence of Non-drug Poisoning in Patients Admitted to Hospitals of Mazandaran University of Medical Sciences, 2010-2011." *Acta Inform Med* **21**(3): 192-195.

INTRODUCTION: Every year million people have poisoning. Most of them will die due to severity of complications. Identifying the pattern of poisoning will help to prevent of them. Because of the non-medicine substance have a wide variety range and easily is used among people, so the aim of this study was to determine frequency of non-medicinal poisoning according to 10th revision of International Classification of Diseases (ICD-10) in hospitalized patient. **METHOD:** This is a descriptive cross section study. The medical records of inpatient hospitalized in hospitals of Mazandaran University of Medical Sciences during 2010-2011 were reviewed. The ICD-10 codes for retrieval patient records were T51-T65 which was included alcohol, organic solvent, halogen derivatives, corrosive substance, detergent, metals, inorganic substance, carbon monoxide, gases, fumes and vapors, pesticide, noxious substance has eaten as seafood, noxious substance has eaten as food, unspecified substances. The data were analyzed with SPSS and descriptive and X2 statistics. **RESULTS:** Of the 1546 in patient with diagnosed poisoning, the 581(37.5%) were non medicine poisoning. Median of age 29+/-17 years, 231(51.6%) female, 300(51.6%) are intentional, and the most material were insecticide 276 (47.5%), sting 96(16.3%) and alcohol 76(13%) and organic solvent 40 cases and the 38(95%) of them was children. **CONCLUSION:** According the result of this study the most cause of poisoning was insecticides. Preventive program for all the groups are suggested and for intentional self-harms and suicide attempted the program of consultation is necessary.

Sawalha, A. (2010). "Analysis of the self-harm cases received at Al-Watani Governmental Hospital in Palestine." *Clinical Toxicology Conference: 2010 International Congress of the European Association of Poisons Centres and Clinical Toxicologists Bordeaux France. Conference Start: 20100511 Conference End: 20100514. Conference Publication: (var.pagings). 48 (3): 288.*

Objective: To analyze the self-harm and suicidal poisoning cases which were received at Al-Watani Governmental Hospital in Palestine during the previous year from May 2008 - April 2009. **Methods:** All poisoning cases that were received at Al-Watani hospital/emergency department that resulted from self-harm or suicide were included. Demographic and clinical information about the cases was collected, entered into SPSS, and analyzed. **Results:** A total of 54 cases were included, the majority of the self-harm patients were female (35 cases [64.8%]). Most self-harm patients were adults, with 13% occurring at age 18, and 11% occurring at age 24. Most poisoned patients were living in cities (57.4%), and a lesser percentage was living in villages (31.5%), or camps (9.3%). Most self-harm cases were carried out using medications (70.4%), others with pesticides, cleaning products, or other products. Most cases involved a single ingestion (75.9%), while multiple ingestions were used in the rest. Only hours had passed before the poisoned

patients decided to seek medical help in the majority of cases (44.4%), others did not specify the time of exposure to the poison(s). Oral ingestion was the route most commonly used (98.1%), and injection was used to a much lesser per cent. Regarding the decontamination, lavage was performed for 42.6% while only 7.4% received activated charcoal, and 11.1% had both. Conclusion: This is the first article that sheds light on such a sensitive issue in a country plagued by instability. The government needs to take further action on this issue in order to better help and protect citizens with depression or hardship. Continuous medical education is sorely needed for physicians treating self-harm patients. Support groups and psychological support should also be incorporated in order to better help patients.

Sawalha, A. F. (2008). "Poison Control and the Drug Information Center: the Palestinian experience." *Isr Med Assoc J* **10**(11): 757-760.

BACKGROUND: The Palestinian Poison Control and Drug Information Center was established in 2006 to provide up-to-date information on medications and to help in the early diagnosis and management of poisoning cases. **OBJECTIVES:** To summarize the activities carried out by the PCDIC in the past 2 years. **METHODS:** Documented inquiries received at the PCDIC were analyzed and the Center's activities were extracted from the files. **RESULTS:** During the first 2 years of the Center's existence, 323 enquiries were received, mainly (67.2%) from physicians; 70% of the calls were from the city of Nablus. Unintentional poisoning was the leading type of call (62.8%) followed by suicidal poisoning (20.7%). Medications were the major category of toxicants encountered (48.9%), followed by pesticides (23.5%). In 67.9% of the cases, the calls were initiated before any treatment was provided. The advice provided by the PCDIC was based on the nature of the call. During these 2 years the PCDIC has conducted both academic and non-academic activities. The Center introduced the concept of poison prevention weeks in Palestine and has conducted two so far. The PCDIC has published several articles in the fields of toxicology, rational drug use, complementary and herbal therapy, pharmacoepidemiology, and self-medication. **CONCLUSIONS:** Documentation of all enquiries is mandatory for analysis, evaluation, comparative purposes and quality assurance. More information campaigns are needed to encourage people to use the services provided by the PCDIC.

Sawalha, A. F., G. F. O'Malley, et al. (2012). "Pesticide poisoning in Palestine: a retrospective analysis of calls received by Poison Control and Drug Information Center from 2006-2010." *Int J Risk Saf Med* **24**(3): 171-177.

BACKGROUND AND OBJECTIVE: The agricultural industry is the largest economic sector in Palestine and is characterized by extensive and unregulated use of pesticides. The objective of this study was to analyze phone calls received by the Poison Control and Drug Information Center (PCDIC) in Palestine regarding pesticide poisoning. **METHODS:** All phone calls regarding pesticide poisoning received by the PCDIC from 2006 to 2010 were descriptively analyzed. Statistical Package for Social Sciences (SPSS version 16) was used in statistical analysis and to create figures. **RESULTS:** A total of 290 calls regarding pesticide poisoning were received during the study period. Most calls (83.8%) were made by physicians. The average age

of reported cases was 19.6 +/- 15 years. Pesticide poisoning occurred mostly in males (56.9%). Pesticide poisoning was most common (75, 25.9%) in the age category of 20-29.9 years. The majority (51.7%) of the cases were deliberate self-harm while the remaining was accidental exposure. The majority of phone calls (250, 86.2%) described oral exposure to pesticides. Approximately one third (32.9%) of the cases had symptoms consistent with organophosphate poisoning. Gastric lavage (31.7%) was the major decontamination method used, while charcoal was only utilized in 1.4% of the cases. Follow up was performed in 45.5% of the cases, two patients died after hospital admission while the remaining had positive outcome. CONCLUSION: Pesticide poisoning is a major health problem in Palestine, and the PCDIC has a clear mission to help in recommending therapy and gathering information.

Shadnia, S., H. Esmaily, et al. (2007). "Pattern of acute poisoning in Tehran-Iran in 2003." *Hum Exp Toxicol* **26**(9): 753-756.

To characterize the poisoning cases admitted to the Loghman-Hakim Hospital Poison Center (a teaching reference hospital of poisoning) in Tehran, Iran. All admitted acutely poisoned patients from January to December 2003 were evaluated retrospectively. Information of socio-demographic characteristics, agents and cause of poisoning, and the mortality rate were collected from medical records of the hospital. During this period, 24 179 cases were referred to the emergency department that 10 206 of them were admitted. Of the admitted cases, 51% were male and 49% female. The majority (38%) of cases were in the age range of 21-30 years. Most (79%) of poisonings were intentional and 21% were unintentional. The most important agents of acute poisoning were drugs (69.13%) especially sedative-hypnotics followed by opioids (12.34%) and pesticides especially organophosphates (OPs) (6.21%). The mortality rate was 1.3% (318 patients). Death was mostly occurred by opioids (41.54%), followed by drugs (28%) and pesticides especially OPs (12%). The prevention and treatment of poisoning due to opioids, pesticides specially OPs and sedative-hypnotics drugs should merit high priority in the health care of the indigenous population of Tehran.

Shadnia, S., G. Sasanian, et al. (2009). "A retrospective 7-years study of aluminum phosphide poisoning in Tehran: opportunities for prevention." *Hum Exp Toxicol* **28**(4): 209-213.

The objective of this study was to survey aluminum phosphide (AIP) poisoning in a referral poisoning hospital in Tehran servicing an estimation of 10,000,000 populations. Records of all patients admitted and hospitalized during a period of 7 years from January 2000 to January 2007 were collected and analyzed according to gender, age, cause of intoxication, amount of AIP consumed, route of exposure, time between exposure and onset of treatment, signs and symptoms of intoxication at admission, therapeutic intervention, laboratory tests, and outcome. During the studied years, 471 patients were admitted to the hospital with AIP poisoning; 50% of them were men. The overall case fatality ratio was 31%. The mean age was 27.1 years, and most of the patients were between 20 and 40 years old. Self-poisoning was observed in 93% of cases. The average ingested dose was 5.1 g, and

most of the patients (73%) consumed 1-3 tablets of AIP. A wide range of symptoms and signs was seen on admission, but the most common one was cardiovascular manifestations (78.12%). The majority (65%) of patients were from Tehran. Poisoning in spring and winter (34% and 24%, respectively) was more common than other seasons. Gastric decontamination with potassium permanganate, and administration of calcium gluconate, magnesium sulfate, sodium bicarbonate, and charcoal were considered for most of the patients. Mean arterial blood pH was 7.23 and bicarbonate concentration was 12.7 mEq/L. One-hundred percent of patients with blood pH <7 died and 100% of patients with blood pH \geq 7.35 survived. Electrocardiogram (EKG) abnormalities were noted in 65.6% of cases. There was a significant difference between survival and non-survival according to pH, HCO₃ concentration, and EKG abnormality. Even without an increase in resources, there appears to be significant opportunities for reducing mortality by better medical management and further restrictions on the AIP tablets usage. Arterial blood pH seems to be a prognostic factor for the outcome of AIP-poisoned patients.

Soltaninejad, K., L. S. Nelson, et al. (2012). "Fatal aluminum phosphide poisoning in Tehran-Iran from 2007 to 2010." *Indian J Med Sci* **66**(3-4): 66-70.

BACKGROUND: Aluminum phosphide (AIP) is also known as "rice tablet" in Iran. Due to the high incidence of acute AIP poisoning and its associated mortality in Iran, the authorities banned AIP-containing tablets in 2007. The aim of this study is to evaluate the trend of acute fatal AIP poisoning subsequent to this restriction. **MATERIALS AND METHODS:** This is a retrospective chart review of patients with acute "rice tablet" poisoning who were admitted to Loghman Hakim Hospital Poison Center, Tehran, Iran, from 2007 to 2010. Collected information included gender, age, type of poisoning, marital status, duration of hospitalization, and outcome. **RESULTS:** There were 956 cases with a mortality rate of 24.06%. The incidence of fatal AIP poisoning was 2.1 and 5.81 per one million populations of Tehran in 2007 and 2010, respectively. In 223 of the fatal cases (97%) and 697 of the non-fatal cases (96%), the poisoning was intentional. The male to female ratio in the fatal and non-fatal cases was 1.04:1 and 1:1.3, respectively. Most of the fatal cases (n = 122, 53%) were unmarried. The mean age was 27.32 \pm 11.31 and 24.5 \pm 8.19 years in fatal and non-fatal cases, respectively. In 196 (85.2%) of the fatal cases and in 577 (79%) of non-fatal cases, the duration of hospitalization was less than 24 hours and between 48-72 hours, respectively. **CONCLUSION:** The results of this study showed the incidence of "rice tablet" poisoning, and its mortality increased since 2007 in spite of the ban. It seems that legislative means alone without other interventions, such as suicide prevention and public education, will not always be able to control or prevent acute intentional poisonings.

Tavanaei, M., V. Akhondi Nematabad, et al. (2012). "Incidence of poisoning in Rafsanjan, Iran." *Clinical Toxicology Conference: 2012 International Congress of the European Association of Poisons Centres and Clinical Toxicologists, EAPCCT 2012 London United Kingdom. Conference Start: 20120525 Conference End: 20120601. Conference Publication: (var.pagings). 50 (4): 295.*

Objective: The purpose of this study was to characterize the poisoning cases admitted to the emergency department of Ali-Ebne Abitaleb hospital from April 2009 to June 2009, Rafsanjan, Iran. **Methods:** The above mentioned patients were examined upon their arrival to the emergency department and hospitalized for further treatment. Data concerning these patients was collected from the emergency department as well as other units and analysed. **Results:** 125 patients with poisoning were referred to the emergency department. 42.4% of the patients admitted to the emergency department were male and 57.6% were female. The age of the male patients was in the range of 18 - 53 and the age of female patients was in the range of 16 - 50 years; 55.2% of the cases were from the age group 20 - 29 years. Most poisonings were intentional. The most important agents of poisoning were drugs (55%), especially sedative-hypnotic drugs, followed by opioids (15%) and pesticides, especially organophosphates, endosulfan and amitraz (28%). 97.6% of the hospitalized patients could be discharged after 2 - 5 days, but 2.4% of patients died. Two of the patients died after endosulfan poisoning and one after organophosphate poisoning. Naloxone for opium, atropine, pralidoxime for organophosphate and thiopental for endosulfan were prescribed for the patients. Respiratory depression, apnea, loss of consciousness and status epilepticus were important and severe signs of these poisonings. **Conclusion:** The majority of poisoning cases in Rafsanjan area involves drug poisoning especially sedative-hypnotic drugs, and pesticides. Good treatment and management of patients in the emergency department increase survival rate, and therefore poisoning units and expert physicians should be available to the emergency department.

Tufekci, I. B., A. Curgunlu, et al. (2004). "Characteristics of acute adult poisoning cases admitted to a university hospital in Istanbul." *Hum Exp Toxicol* **23**(7): 347-351. **BACKGROUND:** The aim of this retrospective study was to analyse the characteristics of acute adult poisoning cases admitted to a university hospital in Istanbul, Turkey. **PATIENTS AND METHODS:** All cases admitted to the Emergency Unit of the Istanbul University Cerrahpasa Medical Faculty Hospital, between January 2001 and December 2001, were included in this study. We analysed the clinical charts for aetiological and demographical characteristics of the acutely poisoned patients. **RESULTS:** There were 284 poisoning cases (207 females and 77 males) among 11834 patients admitted to the Emergency Unit. This was 2.4% of all emergency admissions. The female-to-male ratio was 3:1. The mean age was 27+/-12 years (age range 15-87) and the majority of the patients (73.94%) were below the age of 30 years. The median age was 24 years. Medicinal drugs were the major cause (69.37%) of the cases, followed by inhalation of gases (14.44%), alcohol (5.99%), alcohol together with illicit drugs (4.23%), food (3.17%), corrosives (1.76%) and pesticides (1.06%). The route of administration was as follows: 84.51% orally, 14.44% by inhalation and 1.06% by intravenous injection. Seventy-one per cent of acute poisonings were self-inflicted and 88% occurred at home. The most frequently involved medicinal drugs were antidepressants and analgesics. In 32.04% of cases, there was more than one medicinal drug responsible for the poisoning. The seasonal distribution in poisoning patients suggested a peak in summer (31.7% of presentations) and winter (30.9%) and lower numbers in spring (22.9%) and autumn

(14.5%). The follow-up period of the patients were 1-12 hours for 42 cases (15%), 13-24 hours for 134 cases (47%) and more than 24 hours for 108 cases (38%). Two of the 284 cases with acute poisonings were fatal. This was a university hospital-based study, so these results may not be representative of the general population. Despite this drawback, these data still provide important information about the characteristics of poisoning in the largest city of the country. cn