SUMMARY AND CONCLUSION

Household products have potentially been associated with health risks for the building occupants. Many compositions of these household products have been shown to cause toxicological hazards. Failure to recognize the seriousness of the exposure to the household products and to provide adequate therapy could result in morbidity and mortality.

Most exposure episodes to the household products do not result in severe or lethal intoxications; however they may be markers of inadequate supervision, behavioral problems and maltreatment.

The present work was designed to study and evaluate the patients with acute household products poisoning who were admitted to Benha Poisoning Control Unit (BPCU) and also to express the extent, morbidity and mortality of these poisonings.

The present study was conducted on 185 patients with acute household products poisoning who were admitted to BPCU in the period from the beginning of August 2008 to the end of September 2009.

The included patients were subjected to epidemiological, clinical and investigational studies. The collected data were subjected to statistical analysis after being tabulated and organized.

1- EPIDEMIOLOGICAL STUDY:

The household products intoxicated cases were 19.5% of the total intoxicated cases (950), second in order after the pharmaceuticals intoxicated cases (45.8).

The pesticides group was the most common (48%) among the household products, followed by the cleaning and disinfectant products group (28%), the hydrocarbons group (20%) and lastly the miscellaneous group (4%).

Organophosphorous compounds and carbamates were the most common agents involved in toxicity among the pesticides group, each of which (33.6%). Meanwhile kerosene was the most common (87%) among household hydrocarbons.

There was almost equal distribution of the male and female patients among the household intoxicated cases as a whole, but the percentage of males was higher among the hydrocarbons group (68.4%), while that of females was higher among the pesticides group (58.4%).

The accidental manner was common among males of the age group under 6 years and among the non-original containers of the household products. While the suicidal manner was common among females of the age group from 18 to 50 years and among the original containers of the household products.

The rural residence was the most common (67%) and the kitchen was the most common place (45%) where the household products were stored.

The oral route of exposure predominated (about 90%). There was a significant positive correlation between the time of delay and the severity of poisoning. The majority of the household products intoxicated cases had full recovery (improvement) outcome (99%), with only 1% mortality rate.

Among the household CM intoxicated cases, the following epidemiological features predominated: females (63.3%), suicidal manner (76.7%) and the age group (18-50) years (70%). On the other hand the following epidemiological features predominated among the household OP intoxicated cases, males (60%), accidental manner (66.7%) and the age group (< 6) years (56.7%).

There was high prevalence of males (68%), accidental manner (92%), age group "< 6 years" (76%), rural residence (74%), summer season (50%), non-original containers (79%) and oral route among the household hydrocarbons intoxicated cases.

2- CLINICAL STUDY:

The clinical picture and severity of the poisoning of the Organophosphorous (OP) compounds and carbamates (CM) intoxicated cases, showed insignificant differences, except in muscle weakness, where there was a significant difference.

There was a significant negative correlation between the GCS scores and the degree of severity of poisoning among both the household OP and CM intoxicated cases.

Oximes therapy showed significant difference between OP and CM, as in OP intoxicated cases, oximes therapy was used in about 54% of cases; it was used in 10% only of CM intoxicated cases.

Among the household hydrocarbons intoxicated cases, there were 21% asymptomatic patients and 79% were symptomatic, the clinical manifestations of the symptomatic patients were distributed as follows: cough (76.6%), characteristic odor (93.6%), vomiting (46.6%), abdominal distention (16.6%), Tachypnea (60%), rhonchi and cripitations (53.4%), respiratory distress (43.4%), and fever (23.3%).

There was a highly significant positive correlation ($p < 0.001$) between vomiting and both "the severity of the clinical presentation and the presence of chemical pneumonitis in plain chest x-ray" among the hydrocarbons intoxicated cases.

3- BIOCHEMICAL STUDY:

There was a significant positive correlation between acidosis (either respiratory or metabolic), increased serum glucose levels (hyperglycemia), elevated serum liver enzymes and the severity of poisoning, while there was a significant negative correlation between the mean Butyrylcholinesterase (BuChE) levels, serum potassium levels and the severity of poisoning of both household OP and CM intoxicated cases.

The serial BuChE levels in OP and CM intoxicated cases followed different patterns; while in OP it showed insignificant change (very slow rise, not changed or even decreased), it showed significant change (rapid rise) in CM intoxicated cases which was considered of great value in differentiating between them.

There was a highly significant negative correlation between the elevated serum sodium level (hypernatremia) and the Glasgow coma scale (GCS) scores among the cases that were treated with salty water as a prehospital (home) treatment.

4- TOTAL LEUKOCYTIC COUNT STUDY:

There was a highly significant positive correlation between increased total leukocytic count (leukocytosis) and both the severity of the clinical presentation and the presence of chemical pneumonitis in plain chest x-ray among the household hydrocarbons intoxicated cases.

5- RADIOLOGICAL FINDINGS:

The most common radiological finding among the household hydrocarbon intoxicated cases in plain chest x-ray was increased broncho-vascular markings (74%), followed by pneumonitis (42%), mainly due to pulmonary aspiration of hydrocarbon during its swallowing and/or during vomiting. The most common affected pulmonary side was the right side (73%) followed by the bilateral pattern (56%), but these radiological findings were out of proportion to the clinical findings.