

Pattern of pre-hospital treatment received by cases of pesticide poisoning

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Introduction:

- Pesticides particularly organophosphate compounds are commonly used as agricultural insecticides worldwide.
- Easy availability makes them a popular method for self-harm in the developing countries like Bangladesh.
- Many people consider suicide as an acceptable way of relieving their personal misery or of reducing the financial and emotional burden they cause their family.

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- Hospital based studies suggest that it is the commonest poisoning in Bangladesh with nearly half of the admissions to the emergency with poisoning being due to organophosphate.
- According to Bangladesh Health Bulletin, DGHS 1999 poisoning is the 15th commonest cause of morbidity (1997) and 3rd common cause of mortality (1997) and 2nd commonest cause of mortality (1999) in Bangladesh.
- Usually the type of the first aid provided to the patient of pesticide poisoning is not known. First aid provided immediately after the poisoning may affect the outcome.



Objectives:

- **To know the pattern of pre-hospital treatment received by cases of pesticide poisoning.**
- **To find out the types of traditional treatment used by people after pesticide poisoning before arrival to hospital.**
- **To find out the types of pesticide used in poisoning.**
- **To evaluate the outcome of patients with pesticide poisoning.**

Methodology:

- It was a prospective study, descriptive in nature.
- Conducted in one adult Medicine unit of Dhaka Medical College Hospital over a period of nine months from October 2005 to June 2006.
- Sixty patients enrolled consecutively during this period with definite history and clinical features with acute pesticide poisoning were the study subjects.
- Data were collected in an individual case record form.

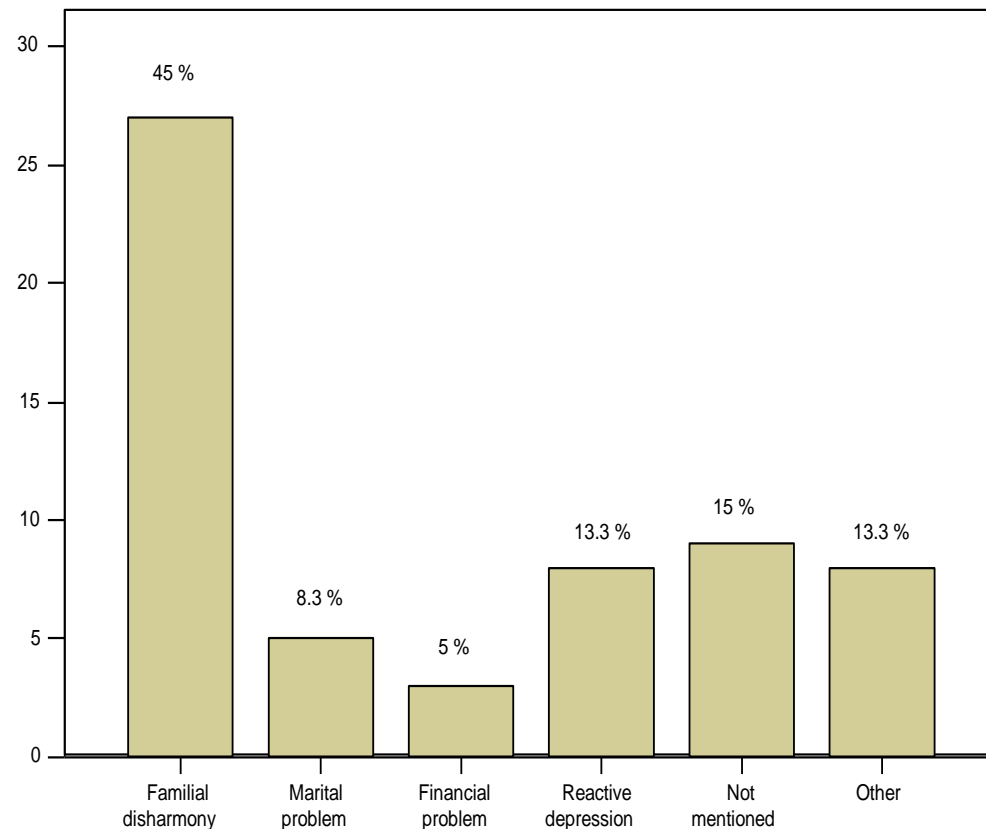


Results:

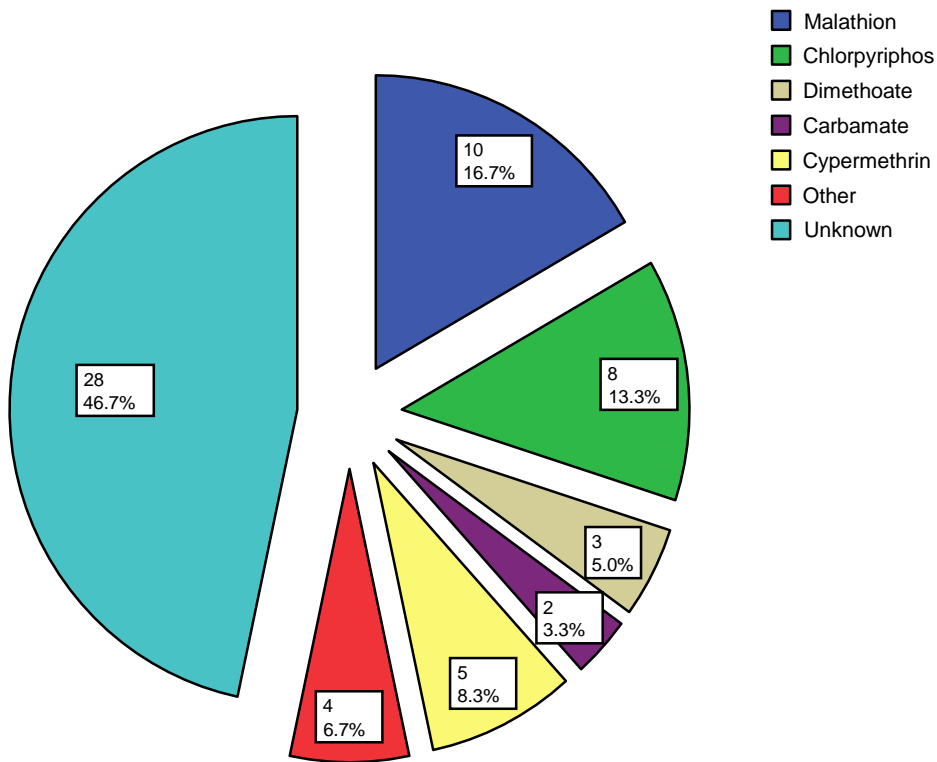
- **The largest part of the patients came from the rural area (80%) with mean age was 24.7 ± 8.8 years and 50% were married.**
- **Most of them (40,66.7%) were male.**
- **Thirty five (58.3%) patients were educated and 41 (68.3%) patients purchased the pesticide themselves for self destruction.**

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- **91.7% poisoning was intentional and familial disharmony (45%) was the key underlying cause.**



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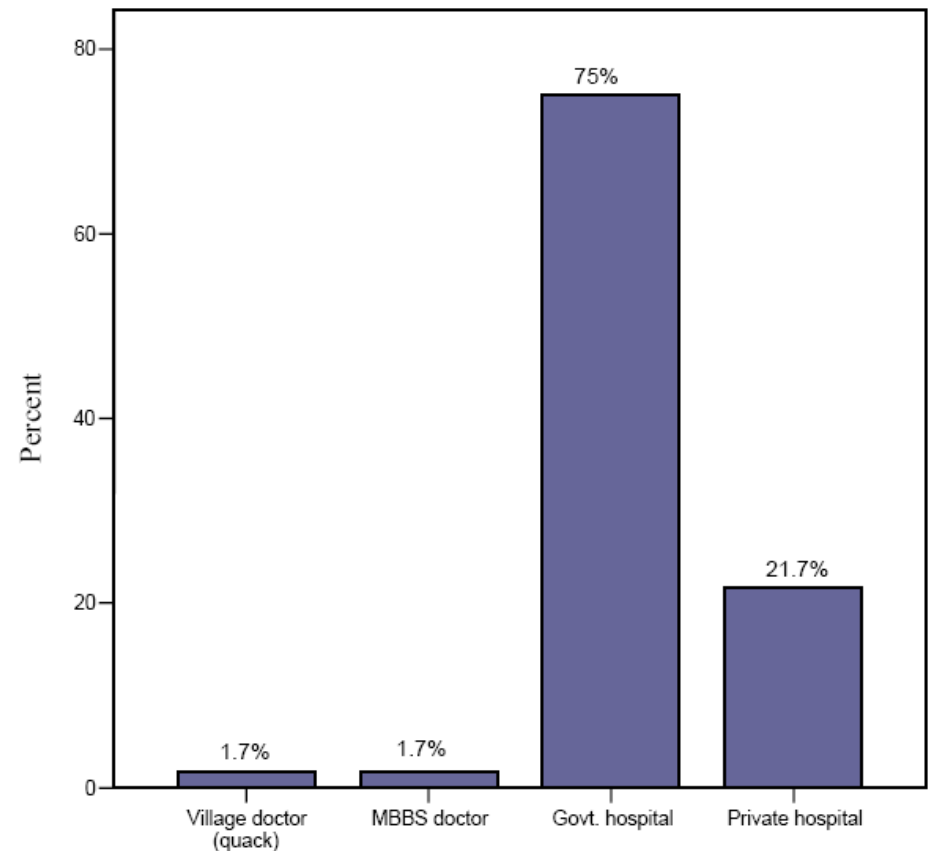


- The brand of the poison could be identified in 32 (53.3%) cases: the most commonly used compound was Malathion (31.2%) and Chlorpyrifos (25%).

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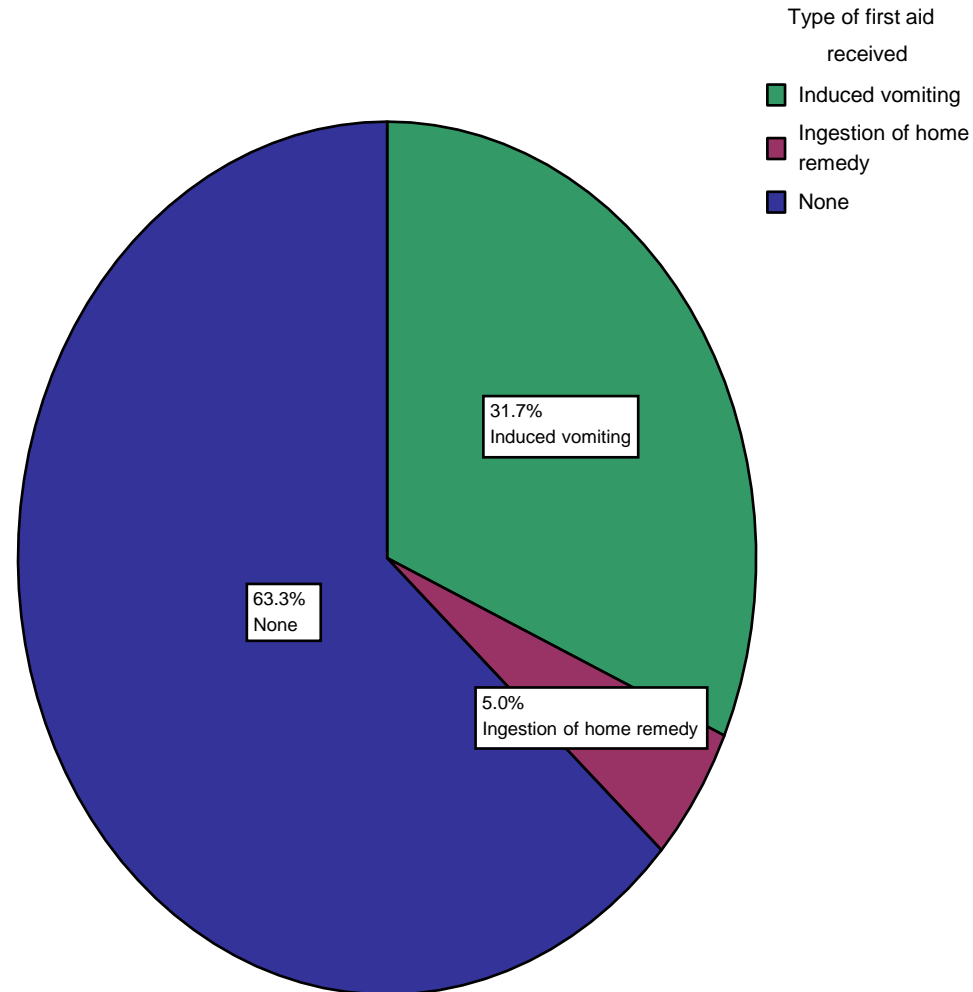
- **75% patients sought treatment in public hospital before coming to the present place for management.**

Figure-VIII: First contact health care provider



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■ Only 22(36.7%) patients received first aid before arrival to hospital: 19(31.7%) patients received induced vomiting by ingestion of tamarind water or lemon water or soap water or introduced finger or other substances like cowdungs, 5% patients received home remedy made by milk or raw eggs etc.





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- **The overall mortality rate was 16.7%.**
- **The majority of the patients (80%) died within the first 24 hours of admission and mostly due to acute cholinergic crisis (80%).**

Discussion:

- Acute pesticide poisoning is a major clinical problem in developing countries like Bangladesh.
- During the study period total 3030 patients were admitted out of which 581 cases have been found to be admitted following poisoning, which is 19.17% of total admission.
- A total of 278 patients died during this 9 months period which was about 9.17% of total admission.
- Among this death poisoning was responsible in 25 cases which were about 8.99% of total death.

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- These study shows, in majority (91.7%) cases cause of poisoning was intentional, 5% was non-intentional and 3.3% was unknown. This data closely simulates with the findings described by Faiz et al (1998) and Karki et al.
- Self harm in particular self poisoning is used for many reasons- to gain attention, express distress or to get revenge-not just for ending life.
- M. Eddleston showed that many deaths from self poisoning in Asia Pacific region occur in people who do not intend to die; they die because the poisons ingested are very toxic and patients are difficult to treat.

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- **Identification of the poison by chemical analysis is not routinely done for clinical use. Recovered specimens for identification of poison, although not ideal but practical in a resource limited setting.**
- **The study shows 38 (63.3%) patients were admitted in the hospital without getting any first aid. This poor pre-hospital management may contribute to the relatively high death rate.**

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- Regarding outcome, 41 (68.3%) patients recovered completely, 10 (16.7%) patients died, 8 (13.3%) were absconded and only 1 (1.7%) patient recovered with complication (developed dysphonia after extubation of IT tube).
- Our case fatality ratio is slightly lower than other earlier studies in Bangladesh and South India. The creation of awareness among the community for appropriate first aid is to be made.

Conclusion:

- In agriculture-based-developing countries like Bangladesh, acute pesticide poisoning is a major health problem resulting in a high mortality and morbidity.
- The causes of the high case fatality are multifactorial but include the high toxicity of locally available poisons, difficulties in transporting patients across long distances to hospital, the paucity of health care workers compared with the large numbers of patients, and the lack of facilities, antidotes, and training for the management of pesticide-poisoned patients.

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- **Prehospital treatment following acute pesticide poisoning is not optimal and mortality following such poisoning is high in Bangladesh.**
- **Prompt recognition and early treatment is mandatory in acute poisoning. Measures should be taken to increase the awareness among general population regarding the first aid following pesticide poisoning.**
- **Immediate correct first aid and pre hospital treatment could reduce the mortality.**



Thanks