ABC of Poisoning

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IMMEDIATE MEASURES OUTSIDE HOSPITAL

Danger to life ?

Immediate danger

Probable danger

No danger

Over three quarters of poisoned patients seen have minimal or no symptoms and are usually not in danger. The immediate treatment in these cases is purely symptomatic and the most important action is to assess the risk of toxicity. Patients with severe symptoms or judged to be at high risk need to be dealt with according to a plan from the moment the patient is found.

Immediate action

- 1 Remove from contact with poison
- 2 Assess vital signs: pulse, respiration, pupils
- 3 Check and clear airway. Remove false teeth
- 4 Give artificial respiration and external cardiac massage if required
- 5 Place in coma position
- 6 Give naloxone if indicated
- 7 Arrange for transfer to hospital
- 8 Look for evidence of poisoning to aid diagnosis

A clear history is important. The doctor on the scene should at once ask the patient for an account of what has happened in case the patient later loses consciousness. If the patient is unconscious he should assess the vital signs and obtain a history from relatives or bystanders.

A patient who has inhaled poison must be removed at once to fresh air and given 100% oxygen by mask if available. If poisoning is by skin contact contaminated clothing should be removed and the skin washed thoroughly with water. Take care not to contaminate yourself. If a large area of skin has been contaminated by a corrosive or poisonous substance the victim should be hosed down. The emergency treatment of poisonous or corrosive substances in the eye is to hold the lids open and to pour clean water over the eye.

In the unconscious patient vital signs must be assessed and when necessary the response must be rapid. A patent airway must be ensured by checking and clearing any obstruction caused, for example, by the tongue, teeth, or vomit. Pupil size should be noted and the head and trunk inspected for signs of injury. Cardiopulmonary resuscitation may be needed, but direct mouth to mouth respiration is contraindicated in cyanide or hydrogen sulphide poisoning as the victim's exhaled breath may be poisonous. If vital signs are satisfactory the patient should be placed in the coma position. If available a Guedel airway should be used.

Further hazards may then be assessed. The toxicity of the suspected poison must be considered in the light not only of the dose but also of the likely time course of its effects. Knowledge of the maximum likely dose of the poison helps in assessing the overall danger but this must be considered against the expected time course. Surprisingly few poisons act very quickly but for those that do the finding of few or no toxic effects provides early reassurance. On the other hand, some poisons, such as paracetamol, have delayed toxic effects and observation or treatment must be started accordingly.

The doctor outside hospital can obtain further information and advice by telephoning a poisons information service, and in many cases referral to hospital will not be necessary. If it is necessary he should ensure that any diagnostic evidence, such as a suicide note, tablets, chemicals, bottles, syringes, vomitus, or even plants, accompanies the patient.

Coma position

Do not support head with pillow
Cover body to prevent heat loss

The value of attempting to empty the stomach before the patient reaches hospital is questionable. Nevertheless, it is worth trying to gag a conscious child by stimulating the pharynx with the fingers, and in remote areas syrup of ipecacuanha may be used. No other emetics are considered safe for use outside hospital, and sodium chloride should never be used since it is too easy to give toxic and even fatal doses. If a corrosive poison has been ingested water or milk should be given without delay and on no account should an emetic be administered.

Emergency action and drug treatment

At least five drugs may be helpful before the poisoned patient reaches hospital. Decisions on which of the five should be available will depend on the individual doctor's practice.

Naloxone is given for opioid poisoning. It should be in every doctor's bag. The signs of opioid poisoning are pinpoint pupils, loss of consciousness, and respiratory depression (slow or irregular respiration). Naloxone (0.8 mg for an adult, 0.4 mg for a child, over 1 mg for an addict) is given by intravenous bolus injection. Reversal (even partial) of any of the above signs within five minutes should be taken as a positive response and further injections given as required until respiration is satisfactory. The injection should be repeated if the initial improvement wears off. If naloxone is not available or the maximum available dose produces no response artificial respiration will be required.

Oxygen is given for hypoxia. Acute hypoxia most commonly occurs after inhalation of vomit or because of some other obstruction to the airway. Hypoxia also occurs in carbon monoxide poisoning and during solvent abuse, when the abuser sniffs solvents repeatedly from a paper or plastic bag. Fires and industrial accidents may also produce oxygen deprivation as well as direct toxicity from the products of combustion. In all cases a patent airway must be ensured and 100% oxygen should be given as soon as possible. Oxygen should *not* be given to the patient whose severe respiratory depression is known to be due to drugs or chemicals causing depression of the central nervous system since it may further depress respiration.

Dicobalt edetate (Kelocyanor) is given for cyanide poisoning. This is kept ready as a kit in factories and laboratories where cyanide is used as well as in all accident and emergency departments. It should be given only if cyanide has been taken and the patient is losing or has lost consciousness, as it is toxic and can cause flushing and hypotension in the absence of cyanide ions in the blood. The signs of cyanide poisoning are headache, vomiting, weakness, tachypnoea, confusion, convulsions, and loss of consciousness. There may be a smell of cyanide ("burnt almonds") on the breath. Oxygen 100% should be given by face mask and 300 mg cobalt edetate slowly intravenously; a further 300 mg may be given after five minutes if symptoms persist.

Atropine is given for poisoning with organophosphate insecticides. The signs are nausea, vomiting, diarrhoea, salivation, pinpoint pupils, muscle weakness, pulmonary oedema, cyanosis, bradycardia, convulsions, and coma. Atropine (2 mg intramuscularly) will help to reverse these signs but may need to be given in larger doses (over 10 mg in the first two hours). Artificial respiration should be continued as long as necessary. Other antidotes can be given later when available.

Syrup of ipecacuanha (Ipecacuanha paediatric draught *BPC*, or Ipecacuanha syrup, Adelaide Children's Hospital formula) may be used in conscious patients who have not taken corrosives or petroleum distillates. The dose is 10-30 ml according to age repeated after 20 minutes if emesis has not occurred.

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