

Medico-Legal Duties of Doctor in Poisoning Cases

T. Millo*, A.K. Jaiswal**, D.N. Bharadwaj*

Authors Affiliation: *Professor **Chemist, Department of Forensic Medicine and Toxicology, All India Institute of Medical Sciences, New Delhi, Delhi 110029, India.

Reprints Requests: Millo Tabin, Professor, Department of Forensic Medicine and Toxicology, All India Institute of Medical Sciences, New Delhi, Delhi 110029, India.

E-mail: tabinmillo2003@rediffmail.com

Received on 31.08.2017, Accepted on 14.09.2017

Abstract

The doctors are required to treat and manage the poisoning cases coming in the emergency. It forms a significant part of the emergency cases [1]. The doctors may perform the medical part of the management but neglect the legal duties due to ignorance or lack of time in emergency. In this article we have tried to put forward the medical as well as legal aspect of management in poisoning case which will help the doctor to do justice to the medicolegal management of poisoning case.

Keyword: Medico-Legal; Poisoning; Toxicology; Documentation; Gastric Lavage etc.

Introduction

Poison is any substance which if introduced into the living body or brought in contact will produce ill health or death by its systemic or local effects or both. There is no real boundary between a medicine and a poison - as a medicine in toxic dose is a poison and a poison in a small dose may be a medicine. In law the real difference between a medicine and a poison is the intention with which it is given. Poisoning is one of the common emergency cases encountered by doctors in the emergency department which may be accidental, suicidal or rarely homicidal.

The epidemiology of the nature of poisoning varies from region to region. The doctor has to manage the poisoning case efficiently to save the patient and also fulfill the basic medico-legal duties to assist the investigating officer in the case. Ignorance of the medico-legal duty may jeopardize the poisoning case investigation and also put the doctor in problem for not discharging his legal duty. Ignorance of law is not an excuse/defense for avoiding punishment/penalty in the court of law.

The duties of a doctor in a case of suspected poisoning has two parts:

1. *Medical duty:* Care and treatment of the patient
2. *Medico-legal duty:* Proper medico-legal documentation and preservation of samples to assist the investigating agency in relation to poisoning

Medical Duties

It is not in the scope of this article to describe in detail the treatment of all poisoning cases. But an attempt has been made to describe the basic standard management protocol of poisoning cases. Every hospital (Government or private) is under a legal obligation to treat all cases of poisoning irrespective of the nature or manner of poisoning. No case can be turned away on the pretext that the hospital concerned is not authorized to handle medicolegal cases. It needs to be emphasized that the first and foremost of its duties is to save the life of patient by exercising reasonable skill and care in the management. If adequate facilities are not available to manage the patient, it should be given first aid

treatment or whatever is best available and referred to the nearest referral hospital. If the nature of poisoning is known, immediate appropriate treatment should be instituted. But if the nature of poisoning is not known, treatment should be instituted on general lines as mentioned below.

General Approach to Management of Poisoning Cases [4]

1. Clinical Assessment and Diagnosis

As soon as the patient arrives in the emergency, a quick assessment should be carried out to detect the life threatening problems and to correct it.

2. Emergency Stabilization

The airway, breathing, circulation and CNS depression (ABCD of resuscitation) should be corrected immediately to save life.

3. Active Removal of Toxic Substance

This involves decontamination of exposed parts like skin/ eye by washing with copious water. The gut decontamination of GIT is done by gastric lavage and administration of activated charcoal. The routine use of gastric lavage in all poisonings by ingestion is discouraged. The indications for gastric lavage and oral activated charcoal should be restricted to the cases in which the toxicologist feels that a toxicologically significant amount of the substance has been ingested and the patient has come within

an hour of ingestion [11]. The elimination of absorbed poison can be done by procedures like diuresis, peritoneal dialysis, hemodialysis, haemoperfusion, hyperbaric oxygen, plasma exchange/ exchange transfusion. The benefits and the right procedure for each poison should be weighed upon.

4. Antidotal Therapy

Administration of life saving antidotes if available is a blessing to the patient. But unfortunately antidotes are not available for all poisons and only for few poisons. It is very unfortunate that we don't have antidote for aluminium phosphide poisoning (common insecticide) which is the commonest cause of suicidal poisoning in north India. It is the need of the hour to have antidote banks in various parts of the country with sufficient stocks of all life saving antidotes. The list of antidotes are shown below in Table 2. The doctor can consult National poison information centre (NPIC) regarding management and antidote therapy. In India it was first started in the Department of pharmacology, AIIMS, New Delhi, in 1995. It provides 24x7 hours service on call. Later many other centers were started as shown in Table 1.

5. Nursing and Psychiatric Care

Good nursing care is the backbone of good patient care, especially for comatose and incapacitated patient. There is a need for psychiatric care in case of suicidal poisoning case to avoid further attempts. Prognostic assessment should be done and patient should be informed and counseled.

Table 1: Poison Information Centers in India [12]

S. No.	Contact Detail	Working days	Working Hours
1.	National Poison Information Centre, Department of Pharmacology, All India Institute of Medical Sciences, New Delhi-110029 Helpline: 1800116117 E-Mail:- npicaiims2010@gmail.com	7 Days	24 Hours
2.	Drugs and Poison Information Centre of JSS University, JSS Hospital, Mahatma Gandhi Road, Agrahara, Mysore- 570004 Karnataka Helpline: 91-821-2335577, 1800-425-0207 Fax: +91-821-4253628 E-mail: dic.jsscp@jssuni.cdu.in	7 Days	8.30 AM to 6.00 PM
3.	Drug & Poison Information Centre, Department of Pharmacy Practice, Kovai Medical Center and Hospital, Coimbatore- 641014, Tamil Nadu Helpline: 0422-4324221, 09952311334	6 Days (Monday to Saturday)	9.00 AM to 5.00 PM
4.	Poison Information Center, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research/ RDT Hospital, Chiyvedu Post, Anantapur, Andhra Pradesh- 515721	6 Days (Monday to Saturday)	10.00 AM to 4.00 PM

Helpline: +91-8559244220, 08978541693

Fax: +91-8554255646

E-mail:- riperdruginfo@gmail.com

E-mail:- Dixon.thomas@gmail.com

5.	Poison Control Centre, Amrita Institute of Medical Sciences & Research, Cochin, Kerala-682041 Ph:0484-4008056,0484-2856034(D),0484-4001234 Fax: 0484-2802124 Helpline:09895282388 E-mail:toxicology@aims.amrita.edu; E-mail:-poisonunit@aims.amrita.edu; toxlab@aims.amrita.edu;	6 Days (Monday to Saturday)	9.00 AM to 5.00 PM
6.	Poison Information Centre, National Institute of Occupational Health, Meghani Nagar, Ahmedabad-380016, Gujarat Helpline:079-22684756, 079-22686351, 079-22686330, 079-22684756 Fax: 079-2866630 E-mail:picnioh1993@gmail.com patelab@icmr.org.in	5 Days (Monday to Friday)	9.00 AM to 6.00 PM
7.	Poison Control and Training Centre, Rajiv Gandhi Government General Hospital, Poonthamalli High Road, Chennai-600 003, Helpline:09840185742, 044-25305969	7 days	24 Hours
8.	CEARCH (Centre for Education, Awareness and Research on Chemicals and Health) B 232-236, Supath II Complex, Vadaj ashram Road, Ahmedabad, Gujarat-380013 Helpline: 079-27553595, 09824047400 E-mail:-cearchtoxicology@yahoo.com	7 days	24 Hours

Table 2: List of Antidotes⁴

Sl. No.	Antidotes	Indications
1	Acetylcysteine	Paracetamol
2	Amyl nitrite	Cyanide
3	Ascorbic acid	organic peroxides (Osmium)
4	Atropine	Cholinergic agents
5	Aurintricarboxylic acid (ATA)	Beryllium
7	Benzyl penicillin	Amanitins
8	Berlin Blue	Thallium
9	Calcium Salts	Oxalates, Fluorides
10	Dantrolene	Malignant hyperthermia
11	Desferrioxamine	Iron, aluminium
12	Diazepam	Chloroquine
13	Dicobalt edetate	Cyanide
14	Digoxin specific Fab antibody fragments	Digitalis glycosides (digoxin)
15	Dimercaprol	Arsenic, Lead, Mercury
16	4, Dimethyl aminophenol (4 -DMAP)	Cyanide
17	Ethanol	Methanol, ethylene glycol
18	Flumazenil	Benzodiazepines
19	Glucagon	Beta-blockers
20	Glucose	Insulin
21	Guanidine	Botulism
22	Hydroxocobalamine	Cyanide
23	Isoprenaline	Beta-blockers
24	Methionine	Botulism
25	4, Methylpyrazole	Ethylene glycol, methanol
26	N-Acetylpenicillamine	Mercury
27	Naloxone	Opiates
28	Neostigmine	Peripheral anticholinergics
29	Oximes	Organophosphates
30	Oxygen	Cyanide, carbon monoxide, hydrogen sulfide
31	Oxygen (Hyperbaric)	Carbon monoxide
32	Penicillamine	Copper
33	Pentetic acid (DTPA)	Radioactive metals
34	Phentolamine	Alpha adrenergics
35	Physostigmine	Central anticholinergics
36	Phytomenadione (Vitamin K)	Coumarin derivatives

37	Potassium hexacyanoferrate (Prussian blue)	Thallium
38	Propranolol	Beta adrenergics
39	protamine sulfate	Heparin
40	Pyridoxine	Isoniazid
41	Sodium nitrite	Cyanide
42	Sodium nitroprusside	Ergotism
43	Sodium salicylate	Beryllium
44	Sodium thiosulfate	Cyanide
45	Succimer (DMSA) i.e 2,3-dimercaptosuccinic acid	Lead, arsenic, mercury
46	Tocopherol	Carbon monoxide
47	Toluidine blue	Methaemoglobinaemia
48	Trientine (triethylene tetramine)	Copper
49	Unithiol (DMPS)i.e 2,3-dimercaptopropane sulfonate	Lead, Arsenic, Mercury

Legal Duties of a Doctor in Poisoning Case

1. Inform the Nearest Magistrate/Police Officer

It is a wrong concept repeated in many standard textbooks of Forensic Medicine in India, mentioning that the private doctors can report only the homicidal poisoning cases and are under no legal obligation to report the suicidal/accidental poisoning cases to the police. However the Government doctors have to report all cases of poisoning, whether accidental, suicidal or homicidal.

Some authors have justified by quoting section 39 CrPC. As per Sec. 39 CrPC it is the duty of the public to give information of commission of certain offences of IPCs mentioned under 39 CrPC, which includes Sec. 302, 303 and 304 IPC (that is to say offences affecting human life), to the nearest magistrate/police officer. They say that Section 309 IPC (offence of an attempt to commit suicide) or section 284 IPC (offence relating to accidental poisoning) have not been included in the section 39 CrPC which requires the public to give information.

But we know that though offences like 376 IPC (rape) and 320 IPC (grievous hurt) which are not included in 39 CrPC, the doctor is bound to report the case to the police, as he is in knowledge of the commission of offence and also involved in collection of evidentiary materials. Therefore non reporting of suicidal and accidental poisoning cases on the basis of 39 CrPC is not justified and reasonable. Besides the doctor is not the competent authority to decide the manner of poisoning. He may make mistake trying to do so as many a times the patient/relative may give incorrect or biased history due to personal motives or benefit⁵. Wrong report/opinion/decision by treating doctor can create legal complication in the case and invite problem for himself. If the doctor does not inform the police in any of the cases, he may be penalized under sec. 176 IPC (omission to give notice or information to public servant by a person legally bound to give), under sec. 201 IPC (causing

disappearance of evidence of offence) or under Sec. 202 IPC (intentional omission to give information of offence by person bound to inform). Therefore it is prudent and safe advice that all cases of poisoning, irrespective of the manner, whether accidental, suicidal or homicidal should be reported to the police [6].

The doctor can call the nearest police station and inform about the case and note down the police diary number for future reference with date and time on the register maintained by the hospital or by himself. In many big hospitals they have a police post inside the hospital itself where they are directly informed and they in turn report to the respective jurisdiction police station where the incident happened. In case the police station does not give diary number he can call the police control room by dialing number 100 and ask for diary number. It will prevent the doctor from future litigation against not informing the police/magistrate. If the doctor fails to inform the magistrate/police, it is a punishable offence under Sec. 176 IPC (omission to give notice or information to public servant by person legally bound to give). If the police require information's regarding the case, the doctor must divulge all information's. There is no scope for professional secrecy (Sec 175 CrPC). If no information is given or wrong information is given deliberately, he becomes culpable under Sec 202 and 193/177 IPC respectively. If it is a case of food poisoning which may be accidental, originating from a public eatery like hotel, canteen or public function (marriage/festival dinner), it should be reported to the public health authority so that suitable preventive steps can be taken.

2. Dying Declaration

If the patient is in serious condition and may die the doctor should inform the nearest magistrate to record the dying declaration. Dying declaration is a written or oral statement of a person, who is dying as a result of some unlawful act, relating to the material

facts of cause of his death or bearing on the circumstance (Sec.32 (i) IEA) [3]. If there is no time to wait for magistrate, he should record the dying declaration himself in the presence of an independent witness like nurse or emergency staff. But the doctor should make sure that the patient is medically fit and in sound mind and compos mentis to give the statement to be valid in the court of law.

3. Detailed Medico-Legal Documentation and Proper Maintenance of Records [7]

The attending doctor should record all the findings and prepare a proper MLC report. He must record the preliminary particulars i.e, full name, age, sex, occupation, date and time, brought by whom and history of dying declaration whether necessary or not. In case of suspected poisoning, the diagnosis should not be mentioned as unknown poisoning. In such case, if its nature of poisoning is not clear, it should be mentioned as poisoning nature not known. Ask proper history of the nature of poisoning/ amount/ time of consumption/ route of consumption / previous suicidal attempt/ drug abuse/ psychiatric illness/ any disease etc from the patient/ relatives/ eye witness. It will help in proper management as well as to know the nature of poisoning for medico-legal purpose. Sometimes the relative will bring the remnant of the poison consumed. It should be properly recorded in the MLC and forwarded to the investigating officer in a sealed condition with proper label to be tested in the Forensic Science laboratory. It also helps as a control sample for the toxicologist when testing the gastric lavage sample or postmortem viscera for the poison. It makes the job of the toxicologist easier for the detection of the specific poison. The recording of the nature of poison in the MLC and in postmortem report makes the toxicologist job-easier in detection of poison. The MLC records should be kept in a safe custody as per the hospital protocol. Usually the hospital has a medical record division to maintain and handle the records. Otherwise the doctor has to maintain his personal record of the MLC cases dealt by him.

4. Preservation of Sample

In poisoning cases Blood and urine are the sample of choice. It can be collected in a clean glass or plastic container with standard screw cap. For blood ideally two samples should be collected, 10 ml each, one with preservative and other without preservative. The one with preservative can use anticoagulant EDTA and Sodium fluoride. Now a days vacutainer are used to collect blood sample which already contains

the anticoagulant and the preservative. The urine can be collected (20ml) with thymol preservative. Ideally two samples should be taken, one immediately after the victim arrives and the bladder should be completely emptied. The second sample should be taken 30 minutes after the first sample. The second sample will give the blood level of the poison [6]. Urine is a very good sample for screening drugs. However the attending physician should collect all the available relevant samples for evidence of poisoning such as vomitus, gastric lavage, urine, faeces, clothes stained with vomitus/ fluid etc. The gastric lavage is commonly done as per need in emergency medicine for management of poisoning by ingestion except for some contra indications. The first lavage sample is ideal for the detection of poison consumed in the stomach. Subsequent lavage will cause dilution of the poison present. The lavage sample can be preserved by adding pure NaCl crystals (approx. 4 gm/100 ml) to it as preservative to prevent decomposition of the sample. Ideally all the samples should be kept in refrigeration at about 4 degree celcius and submitted to the Forensic Science laboratory as early as possible.

In case of food poisoning the doctor should collect the contaminated food. If the food poisoning has affected a group of people in the society, it should be reported to the public authority for taking precautions and controlling. All the samples should be properly sealed, labeled (name of the patient, material preserved, date and time) signed and handed over to the investigation officer for onward transmission to the FSL for toxicological analysis⁸. He also must preserve other evidence of poisoning like bottle/cup/tumbler used, clothe or bed sheets stained by the vomit/urine/faeces or poison container for possible future examination and corroboration. It is very important duty of the treating physician to preserve all the available and relevant evidence in a proper manner and hand it over to the investigating officer.

Many a times the doctor may be careless, not knowing its legal implications. If the doctor intentionally fails to preserve the samples, he is liable to be punished under Sec. 201 IPC (causing disappearance of evidence).

5. Recommend for Medico-Legal Postmortem in Case of Death

If the patient dies of suspected poisoning or was brought dead to the hospital the doctor should not issue a death certificate. The police should be informed and the deceased body should be forwarded

for medico-legal postmortem to ascertain the poison and the exact cause of death.

6. Opinion in Poisoning Cases

The opinion in cases of death due to suspected poisoning or patient survived of suspected poisoning should be given carefully. The investigating officer will seek the medicolegal opinion on the case from the treating doctor in non fatal cases or from the autopsy doctor who conducted the postmortem in fatal cases. The doctor should take a holistic approach while formulating the opinion. He has to interpret the toxicology report considering its physiological effects/clinical manifestation on the body in relation to the concentration and the postmortem findings. Ideally we should have both the qualitative and quantitative report of the poison detected so that it can be correlated with the fatal dose. For this the doctor should be aware of the therapeutic and toxic dose of the common drugs and poisons. Generally the clinical findings in treatment papers, postmortem findings and viscera chemical analysis report is sufficient to opine on the final cause of death.

Ideally we should have the qualitative and quantitative report of the poison detected to opine on the cause of death in the case and the doctor should be aware of the therapeutic as well as toxic or fatal dose of the common poisons, However in India the doctors are generally don't receiving the quantitative report of all the poisons except alcohol. It may be due to lack of sophisticated equipments like GC-MS, LC-MS, ICP-MS, GC MS/MS, LC-MS/MS etc. The doctor should be careful while opining just based on qualitative report only. There are also exceptional cases where the viscera chemical analysis report may be negative In spite of clear positive postmortem findings suggestive of poisoning. In such cases the doctor needs to be careful in giving final opinion. But after ruling out natural pathology/anomalies, he can still give poisoning as the probable cause of death based on the postmortem findings. There are many cases where the accused has been convicted, even though the viscera reports were negative. The judge relied on the circumstantial evidence and the postmortem report.

The court has said that the mere non detection of the poison does not mean that the death was natural (Mahavir Vs state of Bihar, 1972 AIR 1331, SCR (3) 639). In another case supreme court has observed that- In a case of unnatural death inviting Sec 304-B IPC or Sec 306 IPC, as long as there is evidence of poisoning, identification of the poison may not be

absolutely necessary. Even when a viscera report is sought for, its absence is not fatal to the case and rejected the contention of the accused (Bhupinder Vs State of Madhya Pradesh, criminal appeal no. 1774, 2008). Similarly the court has said that - What assistance a man of science can give he gives, but it is too much to say that the guilt of the accused must in all cases, should be demonstrated by the isolation of the poison (Anant Chintaman Lagu Vs The State of Bombay, AIR 1960, SC 500). There are some genuine reasons to give false negative report [9]. One such circumstance is when the patient of poisoning case admitted and treated in the hospital for few days. It is very much probable that the poison might have been metabolized and eliminated or excreted from the body. The doctor needs to be aware of the facts which can give false negative or false positive reports. The specific questions that needs to be kept in mind while framing opinion are [10]:

- a. Whether the poison was sufficient to cause death or is this a fatal level.
- b. Whether it is sufficient to affect the actions of the deceased so as to cause the death.
- c. Whether it is insufficient to have any involvement in the cause of death.

The doctor must take into account many factors, while interpreting the toxicological report:

- a. Route of administration
- b. Synergistic effect of drugs
- c. Age, sex, body weight, genetic factors, tolerance, environmental exposure and general health condition of the individual.
- d. Whether the drug/poison is therapeutic, chronic high level or acute overdose.
- e. When the presence of even trace amount of highly toxic substance is established, the cause of death may be justified as poisoning.
- f. Postmortem drug redistribution
- g. False positive and false negative toxicology results

7. Chronic Poisoning Case

The doctor has to be aware of the chronic poisoning cases in his area. Certain cases like chronic arsenic poisoning has been reported in certain parts of India due to high level of arsenic in the ground water. It gets deposited in the body after many years of people consuming contaminated water leading to skin manifestation or systemic disorder. There has also been heavy metal chronic poisoning due to

consumption of locally made ayurvedic medicine containing high level of arsenic. When such poisoning comes into his knowledge it his duty to report it to the concerned public authority, so that action can be taken to prevent the damage. It is under privileged communication that doctor can inform the concerned public authority as a duty to protect the interest of the community or the state. There can be false positive results of insecticide due to consumption of water or vegetable contaminated with insecticides like organophosphates. The doctor can always consult a Forensic Medicine doctor to clear any medico-legal queries before framing opinion.

Medico-Legal Discussion

As per section 324 IPC (voluntarily causing hurt by dangerous weapon or means), 326 IPC (voluntarily causing grievous hurt by dangerous weapon or means), poison is also considered as a dangerous weapon/means which can cause hurt/ grievous hurt.

It is also worth knowing that with advancement of science the criminals have started using sophisticated chemical weapons/poisons which acts fast in trace amounts and are very fatal and not easily detectable, like radioactive substance (polonium), sarin gas, VX, Sulphur mustard etc. The doctor needs to be updated about the latest development and trends/epidemiology of common poisons in his area to manage poisoning case more effectively.

Conclusion

This article is meant to bring medicolegal awareness among the doctors treating the poisoning

cases to manage the patient and also assist the legal investigation.

References

1. T Millo, AK Jaiswal, Kulbushan Prasad. The Indian laws relating to Drugs and Poisons. *Journal of Forensic Chemistry and Toxicology* 2017;3(1):17-21.
3. Prabhas C Sarkar. *Criminal major acts*, 8th Edn, 1999, oriental law house, New Delhi.
4. VV Pillay. *Modern Medical Toxicology*. 1st Edn, jaypee brothers Medical publishers (P) Ltd, New Delhi, P-36.
5. KrishanVij. *Textbook of Forensic Medicine and Toxicology, Principle and Practice*, 8th Edn, 2011, Reed Elsevier India Pvt Ltd.
6. Anil Aggarwal. *Textbook of Forensic Medicine and Toxicology*. 1st Edn. 2014, Avichal Publishing company, New Delhi, 2014.p.567,578.
7. EJ Rodrigues, SS Banaulikar. *Medico-legal duties in Casualty services*. *IJM TLM* 2007;9(2):12- 16.
8. AkJaiswal. T Millo, C Behera. *Do,s and Don'ts for different personals involved in crime investigation of poisoning deaths in India*. *JFMT* 2007;24(1):55-59.
9. AK Jaiswal et al. *Death is due to poisoning but Viscera report is negative*. *IndianJournal of Forensic Medicine and Pathology*. 2015;8(1):29-36.
10. T Millo, AK Jaiswal, Akhilesh R Jhamad. *Forensic Toxicology reporting and Interpretation - A Review*. 2010;31(1):76-85.
11. Jason Payne-James, Anthony Busittil, William Smock. *Forensic Medicine, Clinical and Pathological Aspects*. 1st Edn. 2003, Greenwich Medical Media Ltd, London, 2003.p.627.
12. *National Formulatory of India*, 2016, Ministry oif Health and Family Welfare, Govt of India.