

Editorial

Crime against Women: Recent Judicial Trends

According to National Crime Records Bureau's (NCRB) recent report 'Crime Clock-2005', which tracked criminal activities over the last year, the country reported one crime against women every three minutes; one molestation every 15 minutes; one rape every 29 minutes, one dowry death every 77 minutes, and one sexual harassment case every 53 minutes. Among the crimes listed by the NCRB, rape, molestation, sexual harassment, and dowry deaths were reported more frequently. The figures could be much higher as only those crimes, which were reported to the police under the Indian Penal Code (IPC), were listed on the Clock. Out of all the crimes against women rape is most heinous one. Delhi is the least safe city for women. In 2004, it accounted for 30% of rapes recorded in the country's 35 major cities, according to the Bureau. There were 457 reported rapes in the city out of 1510 cases reported in others.

Rape can occur anywhere, even in the family, where it can take the form of marital rape or incest. It occurs in the Community, where a woman can fall prey to any abuser. In the United States, national statistics indicate that a woman is raped every six minutes. In 1995, the case of Brazilian Jogger rape and murder in New York City's Central Park had drawn international attention to the problem. The incident occurred only a few years after an earlier sensational jogger-assault case in which the victim- an American assaulted in the same general area of the park-barely survived after her assailants left her for dead. Relations between residents of the Japanese island of Okinawa and American were thrown into turmoil in 1995 after two marines and a sailor allegedly kidnapped and raped a 12 years old girl.

Recently in the year 2004 famous Hanna Foster rape and strangulation by an Indian driver Maninder Pal Kohli in UK, Poetesses Madhumita murder case of Lucknow, U.P., and Dhanjoy's death sentence, drawn media attention internationally on this issue. The United Nation's Special Rapporteur report underlines the importance of education to sensitize the public about the special horrors of rape, and sensitivity training for the police and hospital staff who work with victims.

Indian Judiciary is also aware of the demand of the time and responding accordingly in the form of some historical recent judicial decisions. Serving justice in record time, an **Alwar Fast Track Court** on **April 12, 2006** sentenced 23 years old **Management Student, Biti Hotra Mohanty**, son of **Orissa DGP-level IPS Officer B.B. Mohanty**, to **seven year's rigorous imprisonment** for raping a **German Scholar**.

Mohanty was also slapped a **fine of Rs.10000** for the offence that took place on **March 20, 2006** at a **Hotel in Alwar**. The victim had sent SMS to her friends in India and abroad soon after, telling them of her plight. The Court admitted these messages as evidence, along with the victim's testimony. The Chief Judicial Magistrate (I) Ravindra Kumar Maheshwari, who created judicial history as the entire case was disposed off in just nine working days (within 22 days of the incident), pronounced the judgment. The attitude of the Judge Maheshwari played a major role in the case. Many of the legal experts in the country would have taken the view that since the victim went with Mohanty to the hotel and had drinks and dinner, it amounts to implied consent and therefore, was not a case of rape.

The perceived immoral character of a rape victim has led to acquittal of many rapists. More than two decades ago, a public campaign over Supreme Court acquitting **Constables Tukaram and Ganpat** in **1979** of custodial rape charges, after disbelieving the testimony of the victim, finally led to **the Criminal Law Amendment in 1983. Section 114-A**, introduced in the **Indian Evidence Act** by the amendment, says the court shall presume lack of consent in cases of custodial rape, where sexual intercourse by the accused is proved and the woman states that she did not consent. Rape by police officers, public servants, jail, hospital, remand home staff and gang rape are included in the section.

Similarly, breaking all the previous records, in one of the speediest trials for a rape case involving a 47 years old **German Woman**, the '**fast track court**' in **Jodhpur**, decided within **16 days**. Taking *suo motu* cognizance of the case, the **Rajasthan High Court** directed the State Government to ensure speedy investigation within a month. The court issued a notice to the DGP to ensure that the Forensic Report be made available to the **Trial Court** by **May 16, 2005**.^{23, 24} He bettered the record of the **Jodhpur Fast Track Court**. Based on the philosophy of "**justice delayed means justice denied**" and '**Right to Speedy Trial**' provided under **Article 21** of the **Indian Constitution**. The Delhi HC acting on the same lines, pronounced judgment on **January 6, 2005** in the infamous **MAMC, Medical Student's 'gang rape case'**. The verdict came **within two years of the incident**.

It must be a record in the annals of Indian jurisprudence: completion of a criminal trial in five hours, with the rape bid accused getting five years of rigorous imprisonment. Rohtas District and Sessions Judge, Arun Kumar

Srivastava, on October 19, 2006 pronounced Deo Kumar Chaudhary alias Teman Chaudhary, of Dhawan village, guilty of attempting to rape a minor girl on July 27, 2006 and sentenced him to five years of rigorous imprisonment. In fact, the Court concluded the deposition of the victim, all six witnesses, including the victim's father and brother and the Investigating Officer, besides the defendant, in about four hours. The judge took the next hour to deliver the Judgement. According to the prosecution, eight-years old victim and her five-year old brother were on the way to collect grass for their cattleheads when Deo, a 30 years old farm worker, lured them with a five-rupee note to a secluded Poultry Farm, at Dhawa. The siblings started crying when Deo tried to rape victim.

Nokha Circle Inspector supervised the case on July 27, 2006 and recorded statements of the victim, her father, brother and others. Alleged accused was arrested on August 2, 2006. on August 14, 2006, police filed a chargesheet against him for rape, and his uncle Brij for assault. Their bail petition were rejected by the Sasaram Chief Judicial Magistrate and the District Judge on August 18, 2006, and September 12, 2006, respectively. The Sasaram Court's feet come close on the heels of a State level meeting of District Magistrates, District Police Chiefs and District Judges, convened jointly by the State Government and the Patna High Court. The meeting in Patna, on October 14, 2006, underlined the importance of speedy trial of cases.

The same Court earlier completed trial in a rape case in two days and awarded seven-years imprisonment to the accused, on July 27, 2006. The Supreme Court on March 12, 2006 asked High Courts and lower Courts not to mention the victim's names in their Judgements to prevent rape victims from getting socially ostracized. The Union Cabinet has given its nod for the introduction of a Bill in Parliament to amend the CrPC, 1973. The proposed changes include raising the strength of women judges to deal with rape case. The Ministry of Women and Child Development has decided that each rape victim will get compensation of up to rupees two lakhs.

In a historical Judgment Hon'ble Supreme Court on **July 13, 2006** has ruled that **a woman can't be prosecuted for rape**. This ruling was given by a bench of **Justices Arijit Pasayat and S.H. Kapadia**, reversed an order of **M.P. High Court** on the point. The High Court had upheld the framing of charges against Priya Patel of Sagar under **Section 376(2) (g), IPC**, dealing with the punishment for '**gang rape**'. Priya challenged the framing of charges against her in the **M.P. High Court** contending that **a woman can't be charged with the offence of 'rape'**. The **M.P. High Court** was of the view that **though a woman can't commit rape, if she facilitated the act of rape, Explanation-I to Section 376(2), IPC** would come into operation and she could be prosecuted for "**gang rape**".

However, Priya's Counsel argued that the High Court missed the **essence of Section 375** which defines rape as an offence of which **penetration** was a necessary element. As a woman can't commit "rape", she can't certainly be convicted of commission of "**gang rape**" and **Explanation-I to Section 376(2), IPC has no application**.

The Hon'ble Apex Court ruled, "**A bare reading of Section 375, IPC makes the position clear that rape can be committed only by a man**. The Section itself provides as to when a man can be said to have committed rape. **That can't make a woman guilty of committing rape. This is conceptually inconceivable....**". The bench said if it was **permissible under law** and the **facts warranted**, she could be **charged with abetting rape**.

Meant to do away with the tough questioning resorted to by defense lawyers to browbeat and shame rape victims in courts normally presided over by male judges, the Bill proposes amendments to the **Criminal Procedure Code** to make it mandatory for all rape cases to be tried only by women judges. The Central Cabinet on 03-08-2006 clears this Bill. The Bill has been drafted on the basis of recommendations of the Law Commission of India. To further strengthen the victims who are normally bombarded with uncomfortable questions during cross-examination, the Bill allows the assaulted woman the comfort of her lawyer's presence during '**in-camera**' trial by the opposite counsel. Another provision in the Bill gives victims of any alleged wrongdoing the **right to appeal against acquittal of the accused. Currently only the State can go for appeal**.

In another significant amendment, the Bill proposes that **video recordings by prosecuting agencies on scenes and events relating to the crime, including statements of witnesses and accused, be treated as admissible evidence by courts. Till now electronic evidence was treated as circumstantial**, this could be relied upon only as **corroborative evidence**. The need for a witness protection programme in India has long been felt. The 198th report of the 17th Law Commission of India, headed by the Chairman, Justice M. Jagannandha Rao, submitted to government of India a fortnight ago, has recommended a Witness Identity Protection (WIP) Programme. Although this is not as comprehensive as a full flagged witness-protection programme but at least it is a beginning. This report is still to be tabled in Parliament. Report distinguishes between identity protection and physical protection of witnesses; the latter can happen only if the states give logistical support.

Mukesh Yadav

Cholelithiasis and ABO Blood Group

*Dr. Chetan Maibam , **Dr. G.S. Moirangthem , **Dr. K. Lekhachandra Sharma , **Dr Kh. Saratchandra ,
***Dr. Suchitra Chongtham

Senior Resident

** Associate Professor, Department of Surgery, RIMS Imphal,

PG Student, Department of Biochemistry, RIMS Imphal

Corresponding author: Dr. Chetan Maibam, Department of Surgery,
Regional Institute of Medical Sciences, Imphal

Abstract

Objective: To study the relationship between cholelithiasis and ABO blood group. *Method:* 150 patients of ultrasonography proven cholelithiasis were confirmed on operation. The ABO grouping and R^h typing of all the patients were done by standard agglutination technique and results were analysed. *Result:* cholelithiasis is more common in female (88%) and age group of 31-40 yrs. has the maximum number of patients. Patients with blood group 'O' has maximum number (41.33%) followed by blood group 'A' (30.76%). *Conclusion:* Patients with blood group 'O' has maximum number in our study. As the number of the patients in our study is too less, it cannot be concluded that blood group 'O' is a risk factor for cholelithiasis. But it has generated an area of interest for future research.

Keywords: Cholelithiasis, ABO blood group, Ultrasonography.

Introduction:

Recently, quite a good number of studies has appeared in the medical literature linking certain blood groups and rhesus typing as risk factor for cholelithiasis, in addition to the established factors such as parity, obesity, diet, socio-economic and geographical location. ABO blood groups have been shown to be associated not only with various diseases but also with metabolic process including cholesterol metabolism¹. The findings of different authors are however not uniform. Some studies revealed the incidence of cholelithiasis is highest in blood group 'A', another study points towards 'AB' group whereas a few other studies are of the opinion that there is no definite relationship between gall stones and any particular blood group. Whatever the results may be, the findings of these authors have generated an area of interest wherein lots of future research can be undertaken. In the midst of these controversies, we also have taken up a prospective study on 150 patients of cholelithiasis to ascertain whether such relationship exists or not.

Material and method:

During the period of 01/02/2003 to 31/06/2003, we did this study on 150 patients whose ultrasonography revealed cholelithiasis. The ultrasound findings of gallstones in all patients were confirmed on operation. The ABO grouping and R^h typing of all patients were done at the blood bank department,

RIMS, Imphal by standard agglutination technique.

Results:

As expected, the incidence of cholelithiasis is more in female (n=132, 88%) as against male (n=18, 12%). The maximum number of patients belongs to the age group of 31-40 years of age. Coming to the main theme of our study, the number of patient belonging to the blood group 'O' is 62 (o +ve: 60, o-ve: 2; 41.33%) highest in the series which is followed by blood group 'A' with 46 nos. (30.76%) Regarding parity, number of patients with parity 4 and above is 48 (36.36%).

Discussion:

Quite a good number of studies have come up recently to include blood group as one of the risk factors for gallstone. But, different authors are giving different conclusions. Chakravarti and Chakravarti² did a study on 321 patients and 688 controls in order to search a probable association between ABO blood groups and cholelithiasis. They were of the opinion that blood group 'A' subjects are having somewhat higher risk for gallstone. Kratzer et al³ had a study on 1030 blood donors and within that blood 'AB' was highest (12.1%) in their series. Another study on 171 consecutive patients with symptomatic gallstone was carried out by Tatu Juvonen and Onni Niemela⁴ and revealed a predominance of blood group 'A' (44%) followed by 'O' (31%) and 'B' (17%). They also further commented that blood group A had more stones with less than 25% cholesterol or no cholesterol than those with other groups. Group 'A' patients tended to have more numerous gallstones of smaller size. Chen et al⁵ in their series of 236 subjects having gallstone did not however show any co-relation between blood group and cholelithiasis. 'A' group of 174 hospital patients was studied by Monaci et al⁶ to discover the incidence of blood group in comparison,

with a similar analysis of a representative sample (1872 people) of the Amiata Community as a whole and it is felt that there is no statistical proof that one or more of these blood groups is more prone to gall stone, at least in Amiata.

In our limited series of 150 patients of gall cholelithiasis 62 (41.33%) belong to blood group 'O', 46 (30.67%) belong to 'A' group, 26 (17.33%) to 'B' group and 16 (10.67%) belong to blood group 'AB'. Though 'O' group is having the highest number, it will be premature to come to a definite conclusion that a particular blood group is related to gall stone diseases as the number in our study is too less. However, it has definitely opened an area of interest where further research can be done to ascertain whether the relationship of ABO blood group and cholelithiasis is probable or coincidental.

Conclusion:

A study about the probable relationship of ABO blood group and cholelithiasis was conducted on 150 patients, which revealed highest incidence of cholelithiasis among the patients of blood group 'O', rhesus positive. However, in view of the less number of patients in this series, we do not like to conclude at this juncture that blood group 'O' is one of the risk factors for gall stone diseases. However, we are prompted to do further study on this topic and we should be able to come out with the result of statistically significant in larger series in near future.

Table I-Age/Sex Incidence

| Age in Years | Male | Female | Total |
|--------------|-----------|------------|------------|
| 10-20 | 2 | 12 | 14 |
| 21-30 | 6 | 18 | 24 |
| 31-40 | 6 | 50 | 56 |
| 41-50 | 2 | 26 | 28 |
| 51-60 | 2 | 18 | 20 |
| 61-70 | - | 4 | 4 |
| 71-80 | - | 4 | 4 |
| Total | 18 | 132 | 150 |

Table II-Parity

| No. of parity | No. of patients |
|---------------|-----------------|
| 0 | 2 |
| 1 | 10 |
| 2 | 26 |
| 3 | 20 |
| 4 and above | 48 |

* No. of unmarried female patient: 13

Table III-ABO grouping & Rh typing

| ABO & R ^h | No. of patients |
|----------------------|-----------------|
| A +ve | 46 |
| A -ve | - |
| B +ve | 26 |
| B -ve | - |
| AB +ve | 14 |
| AB -ve | 2 |
| O +ve | 60 |
| O -ve | 2 |

References:

- Whincup PH, Cook DG, Philips AN, Shaper AG. ABO blood group and ischaemic heart disease in British men. *BMJ* 1990; 300: 1679-82.
- Chakravarti MR, Chakravarti R. ABO blood groups in cholelithiasis. *Ann Gnet* 1979; 22(3): 171-2.
- Kratzer W, de Lazzer K, Wiensneth M, Muche R, Kachele V. The effect of ABO, Rhesus and Kell blood group antigens on gall stone prevalence. A sonographic study of 1030 blood donors. *Dtsch Med Wochenschr* 1999 May 14; 124(19): 579-83.
- Tatu Juvonen, Onni Niemela. ABO blood group and gallstone disease. *BMJ* 1992; 305:26-7.
- Chen CY, Lu CL, Lee PC, Wang SS, Chang FY, Lee SD. The risk factors for gallstone disease among senior citizens: an Oriental study. *Hepatogastroenterology* 1999 May-June; 46(27): 1607-12
- Monaci R, Meoni S, Bini D, Morganti G. Association between ABO blood groups and gall bladder calculi: a dissenting opinion. *Minerva Med* 1984 Oct. 6; 75(38): 2221-6

Study of Organophosphorus Poisoning in Surat, India

Gupta SK,* Kumar S, Sheikh MI,*****

*Tutor (Corresponding author),

**Professor and Head, Dept of Forensic Medicine and Toxicology, Government Medical College, Surat, Gujarat, India,

*** Professor and Head, Dept of Forensic Medicine and Toxicology, SMIMER, Surat, Gujarat, India

Abstract

Study of organophosphorous poisoning cases at new civil hospital and govt.medical college, Surat. During the period January 2004 to December 2005, total of 4160 cases were brought for autopsy amongst these 413 cases of poison were investigated and an interesting change in trend and nature of poisoning is observed. Among 413 cases of poisoning, 116 (28.1%) cases of organophosphorous poisoning and 84 (20.3%) cases of aluminum phosphide poisoning. In the majority of cases manner of death was suicidal. Maximum cases were in age group 21-30 yrs which accounts for 33.65% of the total. Males outnumber the females.

Kew Words: Organophosphorus, Poison, Aluminum Phosphide, Death.

Introduction:

Poisoning as a mode of suicidal death is known from antiquity. Poisoning among all age groups and both sexes is seen everywhere and the incidence of poisoning with reference to insecticides, pesticides and rodenticides has become more common than others in the modern times because of their easy availability, low cost, efficacy of action and rapid death.

Organophosphorous compounds are extensively used as pesticides in agriculture in India. Organophosphorus and aluminum phosphide are the commonest cause of suicidal poisoning in India.

Poisoning both accidental and intentional is significant contributor to mortality and morbidity throughout the world. According to WHO, three million acute poisoning cases with 22,000 deaths occur in developing countries particularly among agricultural workers. This figure could be just the tip of the iceberg since most cases of poisoning actually go unreported, especially in third world countries.

The incidence of poisoning in India is uncertain due to lack of data at central level. It has been estimated that about 5 to 6 persons per lakh of population die due to poisoning every year.

The commonest cause of poisoning in India and other developing countries is pesticide, the reasons being agriculture based economic. In India, organophosphates form the largest bulk of pesticide poisoning. Since 1985, aluminum phosphide poisoning has been reported as the commonest cause of intentional poisoning in northern parts of India, viz., Haryana, Punjab and Rajasthan

In this study, at new civil hospital and govt.medical college, Surat, we have recorded the changing trends in the poisoning of the last two years and made some recommendations for the treatment and prevention of the newer poisons on the rampage in this belt.

Material and methods:

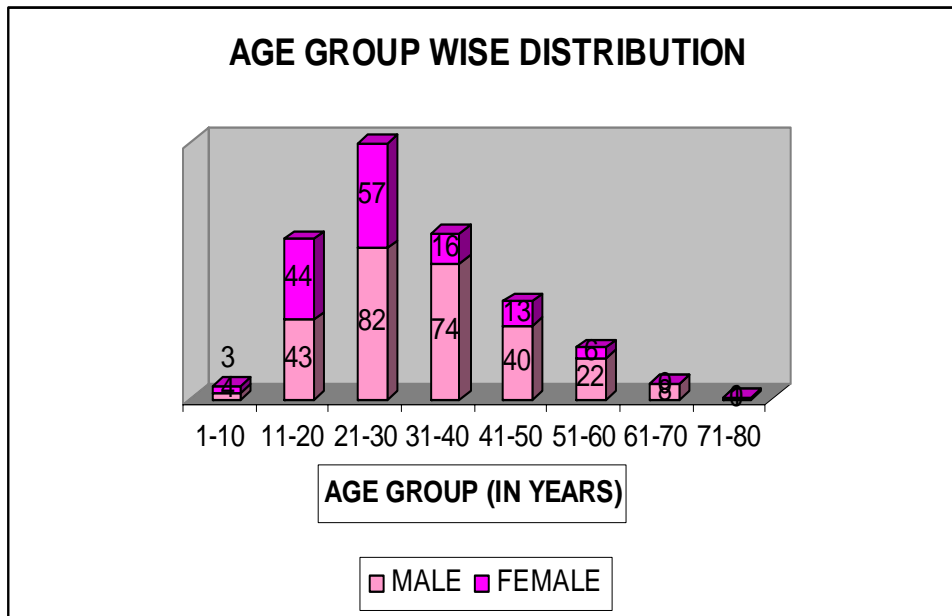
In the present work, prospective study of the cases that has died due to poisoning during the year 2004-05, and is subsequently brought for autopsy at new civil hospital and govt.medical college surat, has been done. The cases were analyzed to study the different types of poison consumed categorically in all age groups, sex and occupation, with special reference to organophosphorus compound poisoning.

During the period January 2004 to December 2005, total of 4160 cases were brought for autopsy at new civil hospital and govt.medical college, Surat. Amongst these 413 cases brought for autopsy with alleged history of ingestion of poison were investigated and changes in trend and nature of poisoning is observed. Amongst 413 cases; 223 in year 2004 and 190 cases in years 2005 which were brought to autopsy. The detailed approach has been based on questionnaire concerning age, occupation, marital status, brief history of case, history of ingestion of poisoning and manner of death. In the first report cause of death kept pending for chemical analysis and final opinion regarding cause death given on advent of chemical analysis report. We have received report from chemical analysis in 380 cases, in 33 cases report were not received yet

TABLE- 1
AGE GROUP WISE DISTRIBUTION

| AGE GROUP (In Years) | MALE | FEMALE | NO. OF CASES |
|----------------------|------------|------------|--------------|
| 1-10 | 3 | 04 | 07 |
| 11-20 | 43 | 44 | 87 |
| 21-30 | 82 | 57 | 139 |
| 31-40 | 74 | 16 | 90 |
| 41-50 | 40 | 13 | 53 |
| 51-60 | 22 | 06 | 28 |
| 61-70 | 08 | 00 | 08 |
| 71-80 | 01 | 00 | 01 |
| TOTAL | 273 | 140 | 413 |

Bar diagram shows age group wise distribution



The table depicts distribution of cases over age in groups of 10 yrs each. The so plotted bar diagram has its peak in age group 21-30 yrs holding a total of 139 cases which accounts for 33.65% of the total. Age group 31-40 years holds 90 cases (21.79%). In younger age group (21-30) female outweigh male

TABLE - 2
DISTRIBUTION OF CASES ACCORDING TO MARITAL STATUS

| SEX | MARITAL STATUS | | TOTAL |
|--------------|----------------|------------|------------|
| | MARRIED | UNMARRIED | |
| MALE | 212 | 61 | 273 |
| FEMALE | 97 | 43 | 140 |
| TOTAL | 309 | 104 | 413 |

Out of 273 males 212 (77.65%) were married and 61 (22.35%) were unmarried. Among total of 140 females, 97 (69.28%) were married and 43 (20.72%) were unmarried.

TABLE- 3 : DISTRIBUTION OF CASES ACCORDING TO OCCUPATION

| SEX | OCCUPATION | | | | | | TOTAL |
|--------|------------|----------|--------|-----------|---------|--------|-------|
| | EMPLOYEE | BUSINESS | LABOUR | HOUSEWIFE | STUDENT | OTHERS | |
| MALE | 43 | 61 | 144 | 00 | 21 | 04 | 273 |
| FEMALE | 01 | 01 | 02 | 97 | 34 | 05 | 140 |
| TOTAL | 44 | 62 | 146 | 97 | 55 | 09 | 413 |

The most striking observation is that 36% cases are from labour class and majority of these labourers are male. This was followed by housewives, 23%.

**TABLE- 4
FREQUENCY OF TYPES OF POISONS**

| NAME OF POISON | NO. OF CASES | PERCENTAGE |
|-------------------|--------------|------------|
| AL. PHOSPHIDE | 84 | 20.3 |
| HYDROCHLORIC ACID | 47 | 11.4 |
| CARBONMONOXIDE | 03 | 0.70 |
| COPPERSULPHATE | 01 | 0.20 |
| DHATURA | 03 | 0.70 |
| D.D.T | 01 | 0.20 |
| DICLOFENAC. | 01 | 0.20 |
| KEROSENE | 01 | 0.20 |
| LEAD | 01 | 0.20 |
| ENDOSULFAN | 11 | 2.66 |
| PROPOXUR | 51 | 12.34 |
| ORGPHOSPHATE | 116 | 28.11 |
| PARACETAMOL | 01 | 0.20 |
| PHENYL | 02 | 0.50 |
| UNDETECTED | 33 | 8.00 |
| UNKNOWN | 52 | 12.6 |
| ZINC PHOS | 03 | 0.70 |
| PYRETHROID | 02 | 0.50 |
| TOTAL | 413 | 100 |

Table shows, 116 out of 413 cases constituting 28.1% consumed Organophosphorus compound poison followed by aluminum phosphide comprising 20.3% cases. Undetected cases were those in which we have not received report from chemical analysis. Unknown cases were those in which chemical analysis could not detect any substance in viscera and opinion was based on various factors such as history, treatment taken in the hospital etc.

**TABLE- 5
FREQUENCY OF ORGANOPHOSPHORUS COMPOUND POISONING DURING YEAR 2004-2005**

| SL.NO. | NAME OF POISON CONSUMED | FREQUENCY | PERCENTAGE (%) |
|--------|-------------------------|------------|----------------|
| 1. | Methyl Parathion | 33 | 28.44 |
| 2. | Monocrotophos | 35 | 30.17 |
| 3. | Phenathionone | 03 | 02.58 |
| 4. | Phorate | 06 | 05.17 |
| 5. | Quinolphos | 22 | 18.96 |
| 6. | Diamethoate | 14 | 12.06 |
| 7. | Dichlorphos | 02 | 01.72 |
| 8. | Parathion | 01 | 00.86 |
| | Total | 116 | 100 |

The table shows the frequency of Organophosphorus compound poison consumed during the year 2004 – 2005.

Among the eight categorized organophosphates 30.17% cases are of monocrotophos and parathion holds the least proportion of 0.86%.

Next to monocrotophos, methyl parathion and quinolphos contribute about 28.44% and 18.96% respectively.

Discussion :

In India, organophosphate insecticides are used extensively in agriculture.

Because of their easy availability organophosphate pesticides is a significant cause of morbidity and mortality. In Study of poisoning cases at new civil hospital and govt.medical college, Surat, during the period January 2004 to December 2005, total of 4160 cases were brought for autopsy at new civil hospital and govt.medical college, Surat. Amongst these 413 cases brought for autopsy with alleged history of ingestion of poison were investigated and an interesting change in trend and nature of poisoning is observed. Among 413 cases of poisoning, 116 cases of organophosphorous poisoning and 84 cases of aluminum phosphide poisoning.

In the present study the incidence of poisoning cases which were brought for autopsy is 10.14% which is somewhat nearer to study of Gulbarga Prakash M. and K.S.N. Reddy in 1993 i.e. 11.14% in their study. In 1995 Tiwari P. K. at Government Medical College Surat, observed the incidence of poisoning to be 13.19% in his study during year 1991-1995.

In 1997 Gargi J. et al at Amritsar found the incidence of poisoning to be, 3.9%. In 1999 Sheikh M.I. et al observed incidence of poisoning to be 7.08%.

Different studies carried out at this center during different year shows the following frequency of cases. In 1995 – 13.92%; in 1997 – 7.08% and in 2004 – 2005 is 10.14%.

This study reflects that in both the years' number of male victim (66%) and of females (34%) remains constant. Male outnumbered females. Similar study done by Dr. P.K. Tiwari in 1996 had same results. In the present study, the victims who were married account for 74.8% which includes male and female both; 25.2% of cases were unmarried.

Occupations of the cases were inquired to know as to which group of persons are consuming more poison. This study reflects that persons

occupied in labour work account for 35.35% followed by housewives accounting for 23.49%.

In the present study the age group of 21-30 years account for 33.65% followed by age group 31-40 years which accounts 21.79%. Similar findings were reflected in the study of Dr. P.K. Tiwari & Prakash. M. & K.S.N. Reddy Gullaburga. In all age groups, males out number the females except in age group 1-10 yrs and 11-20 yrs which comprise one case less in comparison to females.

The study done by Sheikh M.I. et al during the year 1999 incidence of Organophosphorous poisoning were 43.16 %. In the present study poisoning by Organophosphorus group of poison surpassed all others types of poison which accounts for 116 (28.1%) cases out of total number 413 cases which is followed by 84 (20.3%) cases due to aluminum phosphide poison.

This is in contrast with the study done by Tiwari P.K. during 1996; which shows aluminum phosphide being the foremost. Also the study done by Gargi. J. at Amritsar during year 1997-98 reflects that aluminum phosphide was at the top among other poisoning i.e. 38.23%; Organophosphorus poisoning account for 17.64% case.

In the study done by Sharma D.C. et al, to know profile of poisoning cases and report by state chemical lab, Punjab it was observed that aluminum phosphide was the most common type of poison consumed in suicidal, homicidal and accidental deaths due to poisoning. It accounts for 32.6%.

In all the cases viscera were subjected for chemical analysis at Forensic Science Laboratory, Surat from where result was obtained in 376 cases (91%) whereas in 37 cases (9%) report were not received. In 43.1% cases viscera were reported positive for different compound of organophosphorous. Monocrotophos emerges as the leader among others (30.17%). Others are Methyl parathion (28.44%); Quinolphos (18.96%); Diamethoate (12.06%); Phorate (5.17%); Phenatotrionone (2.58%); Dichlorphos (1.72%) ; Parathion (0.86%).

Result :

During the period January 2004 to December 2005, total of 4160 cases were brought for autopsy at new civil hospital and govt. medical college Surat. Amongst 413 cases of poisoning, 116 cases (28.11%) belong to organophosphorous compound poisoning and 84 cases (20.31%) from aluminum phosphide poisoning. the manner of death was suicidal in 410 cases and accidental in 03 cases. maximum cases were in age group 21-30 yrs which hold 139 cases which accounts for 33.65% of the total. age group 31-40 yrs holds 90 cases (21.79%) and stand just next to peak value. males accounted for 273 cases (66.10%), whereas female account for 140 cases (33.90%). Most of these cases were found in married group which accounts for 309 cases (74.81%).

The most striking observation was that 36% (146) cases were from labour class and majority of these laborers are males. This was followed by housewives, 23 % (97). on basis of chemical analysis report organophosphates were categorized in to 8 category it was observed that out of 116 cases of organophosphorous poisoning, 35cases (30.17%) belong to monocrotophos compound and 33 cases (28.44%) were from methyl parathion compound poisoning. Undetected cases were those in which we have not received report from chemical analysis. The opinion was based on history of ingestion of poison and post mortem

findings. Unknown cases were those in which report from chemical analysis were not confirmatory

References :

1. Pillay V.V. Textbook of Forensic Medicine & Toxicology, 14th edition Hyderabad: Paras Publishing; 2004, p.350-352,479-481
2. Sheikh MI, et al. Changing trends of poisoning in Surat. Intl j Med Toxicol Legal Med. 2004; 6: 17-21
3. Mathiharan K, Patnaik Amrit K. Organophosphorous and allied poisons: in: Modi's Medical Jurisprudence and Toxicology, 23rd edition, 2005, New Delhi: Butterworth India. P. 91
4. Tiwari PK, A Study of existing and emerging trends in poisoning in Surat city, 1996
5. Reddy KSN. The Essential of Forensic Medicine & Toxicology, 24th edition, Hyderabad, K. Sagunadevi;2005, p.419-423
6. Dikart WL, Kiestra SH, Sangester B. the use of atropine and oximes in organophosphorous intoxication: a modified approach . J Toxicol Clin Toxicol 1988; 26: 199-208
7. Merrill D, Mihm F. plolong toxicity of organophosphate poisoning. Crit Care Med 1982; 10: 550-551
8. Bardin PG, Stephen F, Johan AM, Alwyn P, James RJ. Organophosphorous and carbamate poisoning. Arch Internal Med 1994; 154: 1433-1441
9. Meena HS, Murthy OP, Bose S, Bhatia S, Dogra TD. Aluminum Phosphide Poisoning, J Forensic Med Toxicol. 1989; 11: 19-30
10. Polson CJ, Green MA, Lee MR. Clinical Toxicology, 3rd edn. London: Pitman Books Limited; 1983. p. 241

Precautions while Conducting Silver Nitrate Test for Detection of Aluminium Phosphide

*Dr. Y. S. Bansal, **Dr. Dalbir Singh, ***Dr. Puneet Setia, ****Mr. S. D. Attrey,

*Assistant Professor

**Additional Professor and Head

***Senior Resident

****Senior Toxicologist

Department Of Forensic Medicine, PGIMER, Chandigarh.

Abstract

Aluminium phosphide is commonly used as a grain preservative in predominant wheat producing belt of North India. It has gained importance as a grain preservative over the years, but simultaneously due to its high toxicity with no known medical antidote, it is also the most common offender in suicidal poisoning. The most common and widespread chemical test used for its detection is silver nitrate test. In this paper we are going to highlight how the analysis using silver nitrate test is to be done ideally, to prevent false positive results.

Key words: aluminium phosphide, silver nitrate, lead acetate, poison, antidote.

Introduction

Aluminium phosphide is one of the commonest offenders of suicidal poisoning in north India (1). The silver nitrate test is the common, easy to use method that is most commonly used as a screening test, especially because of its high sensitivity (2). But this test is not without its fallacies.

Silver nitrate test

Take 5 ml of gastric aspirate with 15 ml of water in flask and cover its mouth with a filter paper impregnated with silver nitrate (0.1N). On heating this at 50°C for 15 – 20 minutes, blackening of filter paper develops which is indicative of presence of phosphene (2-4).

Problems with silver nitrate test

As such silver nitrate test is a very sensitive and specific test for detection of aluminium phosphide. But it also gives positive reaction with sulphur compounds. It is invariably seen that viscerae sent for chemical examination, due to delay in transportation and examination and improper preservation, get decomposed. Hydrogen sulphide is one of the gases that are liberated during decomposition. This hydrogen sulphide can react with silver nitrate giving a false positive reaction for aluminium phosphide.

How to avoid false positive reaction?

Normally filter paper impregnated with silver nitrate solution is used. A filter paper impregnated with lead acetate solution, in addition to silver nitrate, should also be used. If only the silver nitrate paper is blackened then phosphorus or phosphides may be present. If both papers are blackened then sulphides may be present and the result is inconclusive. In that situation the confirmatory ammonium molybdate test should be carried out. (5-6)

Discussion

Aluminium phosphide is one of the most common suicidal poisons, especially in North India (1). Many a time questions have been raised in the court of law regarding the detection techniques of this particular poison as a plea is taken that the person has not consumed aluminium phosphide poison and its presence in viscera is only a result of phosphene getting liberated during decomposition. Both hydrogen sulphide and aluminium phosphide give positive reaction with silver nitrate and it is a known fact that hydrogen sulphide is liberated due to decomposition. Therefore an utmost care should be taken while conducting the silver nitrate test for aluminium phosphide. This would entail the use of the confirmatory test in every case of suspected aluminium phosphide poisoning (6). However the same can be avoided by using a parallel lead acetate impregnated paper along with silver nitrate test. Only those cases in which the lead acetate test is inconclusive will the need for the confirmatory test arise. Some of the authors have recommended that since silver nitrate produces blackening due to reaction with hydrogen sulphide in the air, another filter paper impregnated with silver nitrate has to be kept outside as control(2). Even with this, false positive test due to hydrogen sulphide being liberated due to decomposition cannot be ruled out. Therefore we recommend the use of lead acetate in every case of suspected aluminium phosphide poisoning.

References :

1. D. Singh, I J Dewan, S tyagi. Changing trends in acute poisoning in Chandigarh zone: a 25 year autopsy experience from a tertiary care hospital in north India. Am J Forensic Med Pathol, 1999; 20(2): 203 – 210.
2. Krishan Vij. Textbook of forensic medicine and toxicology, principles and practice. 2nd ed. New Delhi. B. I. Churchill Livingstone Pvt. Ltd. Section II chapter 14.
3. Dr. K.S. Narayan Reddy. The essentials of forensic medicine and toxicology. 22nd ed. Hyderabad. K Suguna Devi. Chapter 25.
4. V.V. Pillay. Handbook of forensic medicine and toxicology. 13th ed. Hyderabad. Paras Publisher. pp 342.
5. Basic analytical toxicology, international programme on chemical safety. World Health Organization, Geneva. 1995. pp 206.
6. Prof. T.D.Dogra, Lt. Col. Abhijit rudra editors. Lyon's medical jurisprudence and toxicology. 11th ed. New Delhi. Delhi law house. pp 1308.

Current Trend of Poisoning in Jamnagar: An Experience of Tertiary care Teaching Hospital

*B.D. Gupta MBBS, M.D., **J.H. Hapani MBBS, **V.N.Shah MBBS

*Professor & Head,

**Junior Resident

Department of Forensic Medicine & Toxicology

M. P. Shah Medical College, Jamanagar-361008

Phone no- +91-0288-2710595 (R)

E-mail: bdquin@yahoo.com

Abstract

A one-year study was carried out among the poisoning cases admitted in the department of medicine of G.G.Hospital, Jamnagar during the period of 1-1-2005 to 31-12-2005. A total of 268 cases were registered. A total of 124 cases were due to poisoning and 144 cases due to various bites. Of 124 cases, 89 (71.77%) were males. Majority of the victims fell in the age group of 20-29 (42.74%). 54.83% patients were from rural area. Main route of poisoning was ingestion (89.51%). Commonest poisoning was organophosphorus compound in our region. Majority of cases were of suicidal cause. Mortality noted in organophosphorus compound in our hospital was 66.93%.

Key words : Poisoning, ingestion, organo phosphorus compounds.

Introduction:

Since civilization poison and poisoning is known to mankind. As the period advanced, poison was not only used to kill others but also used for suicidal purpose. Many compounds were used as poison and they vary in different regions as per the availability and access. India is an agricultural country with predominant population from rural area (60-80%), therefore, pesticides are the most common compounds used for poisoning¹. Poisoning is seldom included as a priority for the health research in India, even though hundreds of people are losing their lives prematurely from pesticide poisoning². Hence, this study was carried out to analyze the various trends in acute poisoning in this region with the aim that it will help immensely the health policy maker to equip health care institutes accordingly.

Methods:

The study was conducted in the department of Forensic Medicine and Toxicology, M.P.Shah Medical College, Jamnagar. The study was carried out using record case sheet obtained from the record section of G.G.Hospital, Jamnagar. All the case records for the stipulated period of one year i.e. 1-1-2005 to 31-12-2005 were collected and all necessary information were obtained and recorded in the predesigned proforma. Later on from that proforma, we analyzed the various aspects of poisoning, tabulated and compared it with various studies.

Results:

Total hospital admissions in the department of Medicine were 11,029 during the study period of one year and out of that 268 cases were of medico legal nature (2.42%). Out of these 268 cases a total of 124 cases were due to poisoning. Cases of snakebite, other bite and animal stings

are not included in this study. This study pertains to these 124 cases of poisoning only. Of these 124 cases, 89 (71.77%) were males and 35 (28.22%) were females. Male to female ratio was nearly 2.5:1. Most of the cases were from 20-29 age groups (42.74%) and least from more than 50 years of age groups (6.45%). Age wise distribution of 124 cases of acute poisoning is shown in table - 1. 113 patients were Hindu, consisting of more than 90 % of total cases. High prevalence of poisoning (54.83%) was from rural area of Jamnagar district. Out of 124 cases 85 (68.54%) were married and 39 (31.45%) patients were unmarried. The commonest poisoning was organophosphorus compounds (OPC) in our study. Distribution of poisoning cases and case their fatality rates are shown in table-2. We recorded 75 cases (60.48%) of organophosphorus poisoning followed by Aluminium phosphide poisoning 10 cases (8.06%) and drug ingestion 7cases. Most common route of poisoning was ingestion (89.51%) followed by inhalation (10.48%). Suicidal poisoning was highest i.e. 81 cases (65.32%), followed by accidental (28.22%). Homicidal poisoning was very rare (0.80%) in our study. Mortality due to poisoning was very high in our institute (66.93%). 144 cases were due to various bites. Maximum cases of snake bite i.e.72 cases (50.00%) and mortality due to snake bite was 16.66% and all mortality was due to neurotoxicity only. Not a single mortality was noted in other bites like scorpion sting (21 cases), insect bites (4 cases) and unknown bite (47 cases). All the cases of bites were treated as per standard treatment and we have concentrated in acute poisoning leaving the discussion of cases of bites.

Discussion:

The incidence of poisoning was very high among young i.e. in the age group of 20-29 years (42.74%) which declined in the old age group more than 50 years (6.45%). Incidence of poisoning in present study is in consistency with the studies done by Gupta³ et al and Gargi⁴ et al. In present study the incidence of poisoning was found to be higher in male (71.77%) compare to females (28.22%) and similar finding were also noted by Evan⁵. A 21 year retrospective study(1980-2000) of trend of acute poisoning in Northern India (Jammu and Chandigarh) conducted by Sharma et al⁶ showed that deaths due to poisoning were higher in males compare to females (ratio was 2:1) and young adults formed the majority (21-25 years). The increased incidence of poisoning in males may be because they are more exposed to occupational hazards and stress and strain, as compared to females in general. Sethi et al⁷ observed higher incidence of poisoning in married person (69.18%) as compared to unmarried. We also observed the similar trend of poisoning in our region. It may be due to stressful life of person due to various social customs and family problems. Over and above this reason, we also want to say that by the age of 20-29, most of the population in India get married. In our study, poisoning is more common in rural area (54.83%). This is because 1) most of the population in India is still rural 2) rural population use pesticides or agricultural poisons like OPC for their occupation of farming. Therefore, OPC is very easily available to them. But urban population is also not spared by this menace, as incidence of poisoning is almost similar to rural population (46.17%).

In all 124 cases the stomach was taken for analysis purpose. However, a report of analysis was not received in any of the cases. The concept of conducting such analysis and other investigations like plasma cholinesterase estimation for the purpose of diagnosis and prognosis of poisoning in living patients is not yet developed and such facility is also not available in most of the institute in our country, our institute is no exception. Many studies now observed that the trend of poisoning is gradually shifting from rural to urban population.^{4, 8} If this trend observed in our study continues, we presume that in coming years the incidence of poisoning in urban areas may supersede the incidence of poisoning in rural areas because the difference between the two is becoming narrower and narrower. It is seen that suicidal poisoning is most common (65.32%). Commonest compound used for these purpose was one of the organophosphate poisons (60.48%). Owing to easy availability, pesticides have always been extremely popular in India for committing suicide⁹. The higher incidence of suicidal poisoning may be due to various socio-

economic factors, urbanization, lack of employment, etc. However, few studies reveal that trend of poisoning is now shifting from organophosphorus compound to Aluminium phosphide compound in urban area¹⁰. This is in contrast to our study and that is the reason to conduct this study to know the general pattern of poisoning that would help in early diagnosis and treatment, which in turn should reduce the mortality. However, in our study also at present poisoning due to aluminium phosphide has emerged as second most common poisoning. Homicidal poisoning involving pesticides has always been rare owing to disagreeable odor and taste, which most of these chemicals possess¹¹ and it may be the reason for extremely rare incidence noted by us in our study and other authors as well.^{3, 4, 6} Mortality due to organophosphorus compound is very high (66.93%) in our study this is due to the time span lapsed between consumption of poison and initiation of treatment which was about 3 and half hours. Also the fatal dose of most of the OPC poisons is less than one gram while the common ingestion on any given time in any of the cases could be far more than the fatal dose. Therefore, in such cases if treatment is initiated within minutes of consumption of poison then only mortality could be reduced. Ventilatory support is the main stay of the treatment.¹² However; practically it may not become possible to provide ventilatory support in all cases. When Over and above, less availability of ventilatory support, which is the main stay of treatment for respiratory paralysis could also be one of the reasons of high mortality.

Table-1 : Age wise distribution of poison cases

| Age groups (years) | No of patients (124) | Percentage |
|--------------------|----------------------|------------|
| 12- 19 | 12 | 9.67 |
| 20-29 | 53 | 42.74 |
| 30-39 | 38 | 30.64 |
| 40-49 | 13 | 10.48 |
| More than 50 | 8 | 6.45 |

Table-2 : Distribution of poisoning cases and case fatality rate

| Poisoning | Cases | Mortality | Percentage |
|-----------------------------|-------|-----------|------------|
| Organophosphorous compounds | 75 | 60 | 80.00 |
| Aluminium compounds | 10 | 7 | 70.00 |
| Alcohol | 6 | 0 | 00.00 |
| Drugs | 7 | 1 | 14.28 |
| Unknown | 14 | 10 | 71.41 |
| Phenyl | 7 | 4 | 57.14 |
| Kerosene | 5 | 1 | 20.00 |
| Total | 124 | 83 | 66.93 |

References :

1. Bawaskar HS and Joshi SR. Organophosphorus poisoning in agricultural India- Status in 2005. *J Assoc Phys India* 2005; 53: 423-24.
2. Buckley NA, Robert D and Eddleston M. Overcoming apathy in research on organophosphate poisoning. *BMJ* 2004; 329: 1231-1233.
3. Gupta BD and Vaghela PC. Profile of fatal poisoning in and around Jamnagar. *Journal of Indian Academy of Forensic Medicine*. 2005; 27(3): 45-48.
4. Gargi J, Rai H, Chanana A, Rai G, Sharma G, and Bagga IJS. Current trend of poisoning- a hospital profile. *J Indian Med Assoc* 2006; 104:72-3.
5. Evan JG. Deliberate self-poisoning in oxford area. *Br. J Prev Soc Med* 1967; 21:97-107.
6. Sharma BR, Harish D, Sharma V, and Vij K. Poisoning in northern India: changing trends, causes and prevention thereof. *Med Sci Law* 2002; 42:251-57.
7. Sethi B, and Lal N. Demographic and socioeconomic variables in attempted suicidal poisoning. *Indian J Psychiatry* 1975; 17: 100-2.
8. Smith AJ. Self poisoning with drugs: worsening situation. *BMJ* 1972; 4:157-9.
9. Dhatarwal SK, and Singh H. Profile of deaths due to poisoning in Rhotak, Haryana. *J Forensic Med Toxicol* 2001; 18: 28-29.
10. Khosla SN, Nand N, Kumar P, Trehan V. Muscle involvement in aluminium phosphide poisoning. *J Assoc Phys India* 1988; 36: 289-90.
11. Pillay VV. *Comprehensive Medical Toxicology*. 1st Ed. Bangalore: Paras publications; 2003. p.191.
12. Goel A, Joseph S, Dutta TK. Organophosphorus poisoning: predicting the need for ventilatory support. *J Assoc Phys India* 1998; 46: 786-90

End of Life Care Support: Ethical and Legal Scenario in India

Dr. Mukesh Yadav
HOD & Associate Professor
Deptt. of Forensic Medicine
Rural institute of Medical Sciences & Research
Saifai, Etawah, U.P.
Email: drmukeshy14 @rediffmail.com
Mobile No.: 9411480753

Abstract

Should terminally ill patients be made to endure painful therapy or opt for end of life care support that will limit treatment but facilitate a less painful death? It is often a most difficult decision, which many families and medical fraternity routinely face. This is an emotional, ethical, economic, social and medicolegal issue. The issue is of a patient's rights as a citizen. Every medical intervention requires the consent of the patient. He reserves the right to refuse treatment, even if it is to his detriment. The exercise of this right should not be misinterpreted as an attempt to commit suicide or euthanasia.

This paper deals with ethical and legal guidelines in dealing with a case where patient is put on life care support system and decision to end of life care support. Paper has also made a sincere attempt to differentiate between euthanasia and end of life care support, various guidelines as per the Organ Transplantation Act, 1994, and the Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations-2002, Indian Society of Critical Care Medicine (ISCCM) Guidelines, etc.

Key Words: Ethics, Euthanasia, Death, Life Care Support, Organ, Terminal Care.

Introduction:

The 'End of Life Care Support', is an issue which medical fraternity especially doctors involved in critical care, across the world, faced with every day. Almost 70% to 90% of patients dying in Intensive Care Unit (ICU), in Europe, and the US, die in a managed manner under some kind of restriction of life support or withdrawal of treatment. [1] But in India, families rarely opt for it due to more emotional bondage and less scientific knowledge. Everyday, thousands of families across the world face similar situations, where they see a loved one dying slowly and painfully. When life-support intervention does not help mitigate suffering, it only adds to the agony of a draw-out-death.

Indian Society of Critical Care Medicine (ISCCM) formulated guidelines for doctors caring for the critically ill and sends to the Law Commission of India to study the issue. The Law Commission of India has submitted a draft Bill on 'medical treatment of terminally ill patients'. The Bill defines 'terminally ill' and 'the various ways of limiting treatment' and gives 'legal guidelines for withholding' or 'withdrawal of treatment'. When passed, the Bill will go a long way in protecting patients' rights. Most of all, it will also help the doctors from frivolous litigations for committing 'euthanasia'.

Indian Scenario:

Sixty years-old Karibasamma's request in 2003 to the Karnataka Government to permit her opt for mercy killing has yet again revived the euthanasia

debate in the country. She Pleaded that the State should allow for euthanasia on **humanitarian grounds**. Karibasamma, a retired teacher, claimed to be experiencing severe pain besides mental torture and confined to bed for the past six years following a slipped disc, has approached the Court in this regard. Having no plans to commit suicide as it was against law; she has already donated her body to the Anatomy department of the J.J.M. Medical College, Davangere after her death. [2]

Is Fast un-to-death has Legal Sanction?

In the rancorous debate over euthanasia, assisted suicide and other ways for terminally ill patients to end their lives, doctors note that one option is always legal: a sane, alert person can simply refuse to eat or drink. It is an option rarely taken, but the first survey of nurses whose patients took it has contradicted the popular assumption that such a death is painful. Almost all the 102 Oregon Nurses surveyed said their patients who refused water and food had died "good deaths," with little pain or suffering, generally within two weeks. The Study published in a Journal [3, 4], raises difficult questions for those on both sides of the debate. Its authors hesitated to publish it for fear of encouraging suicides. They went ahead, the lead author side, because it was clear that some patients were already choosing such deaths and the medical community needed to set standards.

In the study, 102 of the 429 Hospice Care Nurses who were mailed questionnaires replied that they

had cared for at least one patient who chose to hasten death by declining food or fluids. (Hospice care typically takes place at home). The Nurses were asked to describe the patients and rank their deaths on a Scale from 0 to 9, with 9 being "a very good death". Overall, Nurses give the deaths a median Score of 8. Eight Nurses rated their patients' deaths as "bad" (a score of 0 to 4). Twelve said they thought their patients had a mental disorder, including some who were clinically depressed.

Dr. Timothy E. Quill, a Professor of Medicine and Psychiatry at the University of Rochester, claims such deaths are "legally acceptable and seem to be more morally acceptable than assisted suicide". Death in this manner comes more quickly to patients in the last stages of a terminal illness than it would to a healthy person. [4]

A terminally ill patient Chess Player, Kolavennu Venkatesh had moved the Andhra Pradesh High Court on seeking permission to "advanced his death" so that his organs could be used by other, is upset at the delay in getting permission to switch off his life support system. Citing on his plea, the High Court directed the Director of Medical Education to constitute a team of doctors to study the issue and give its report. The team visited the petitioner and his family. The Committee is believed to have submitted its report to the government. The doctors attending on K. Venkatesh say that he cannot move his body but can speak faintly. They also say that his days are numbered and his organs need to be removed within minutes of his death to fulfill his wish to donate them. The disease struck Venkatesh at the age of ten, cutting off his career as a budding chess player. He was admitted in hospital on July 26, 2004, after he developed high fever. His condition has deteriorated since then. [5]

Principal Secretary (Medical and Health), Andhra Pradesh, I. V. Subba Rao told Sujata, mother of K. Venkatesh on the phone: Organs can only be harvested in the case of natural death or brain death. "Neither of these conditions can be applied in my son's case. It will be too late to harvest organs in case of natural death as by then the organs would have been infected and brain death is not an option here"- Sujata.

Sujata said her son was not seeking mercy killing. She said mercy killing is what a person who cannot bear the pain of his disease requests for. "What my son seeks is not mercy killing. It is not that he cannot bear the pain of the wants to be of use to others. No one understands his selfless wish". [6]

Sunil Arora (44) and Rekha Aggarwal (48), both suffer from the disorder Muscular Dystrophy. Sunil's brother, Sumit is also affected by the unsuccessful bid to end his life has got them talking. Sunil and

Rekha point to the odds that are stacked against their leading anything close to a normal life. "I worry about what will happen to us after my parents. We can't even change our position while sleeping at night our parents have to help. I pray that we die before them," says Sunil, who took voluntary retirement from Punjab National Bank after his movement became severely concern for the Arora brothers, but the inadequacy of a supportive infrastructure is.

Medical and legal arguments over euthanasia may be a tangled knot, but for those who suffer from the debilitating disease that is muscular dystrophy, is really one of human dignity. Muscular dystrophy a neuromuscular disorder is often lumped with locomotor disability that encompasses problems of an orthopaedic nature restricting mobility. "Our problem is more severe. First you lose your mobility, then even your heart and lungs are affected,"- Sanjeev Sachdeva (40), who has been battling the disease. Sachdeva runs an NGO working for the disabled, along with Anjali Aggarwal, who is also affected by dystrophy. [7]

"My father was a Chronic Obstructive Lung Disorder patient, which required hospitalization often. In August 2006, he suffered a major chest infection. Even after a week in the ICU, he did not recover. Doctors said he would require a ventilator forever. I knew his suffering was being prolonged, so we decided along with my mother to withdraw treatment. Since we did not want him to die in the ICU among strangers, we brought him home. He survived a few hours, and by then everybody could meet him. His eyes were donated to two children. In retrospect it was a tough decision we have no regrets. When someone is suffering so much its' best to withdraw treatment"-Resident, Lucknow. [1]

"My father had Chronic Rheumatic Arthritis and Bronchitis for over 15 years. In July 2006, he developed a breathing problem. After a Pulmonary Function Test (PFT), our doctor suggested hospitalization. Father walked into the ICU himself. Initially, he was recovering, but suddenly the hospital called to say his condition had deteriorated: an antibiotic had reacted. He also developed a chest infection, which was detected late. They put him on a ventilator. Doctor said his chances were slim. Meanwhile, hospital expenses were mounting everyday. We realized the futility of continuing therapy. The family decided to withhold treatment. The decision was tough because when he walked into the ICU, we could not imagine he would die... Perhaps it was for the best"- **Resident, New Delhi.** [1]

Whenever a patient especially a young one has been put on to a ventilator and doctors have little

hope of his survival, and even his family understands that the mounting Intensive Care Unit (ICU) expenses are also putting them down.

A study revealed that of 143 deaths that occurred in 49 patients, about 25% of them were not intubated and ventilated but failed to recover and then had no further escalation of therapy, and 8% had withdrawal of therapy. [1]

Compared to the West where limitation of therapy precedes 90% deaths in India, the rate is around 22% to 50% in elite hospitals of Delhi and Mumbai. In smaller Cities, it's virtually unacceptable. That's because there is no culture of withdrawing or withholding treatment. Moreover, the laws are not clear. Doctors in India are scared about taking such decision. [1]

Dilemma faced by the Attendants:

Should they continue therapy and let the patient cling on painfully to life? or

Simply opt for withdrawal or limitation of treatment?

What is 'end-of-life care'?

It's that period when life is artificially prolonged for a chronically or a terminally ill patient. The question is **should death be put off, by continuing life support systems? or should doctors and the patient's family decide that it's inhuman to prolong life in this manner?** Treatment in search of a cure, in the face of hopeless prognosis, is travesty of medical care and goes against principles of physicians' obligation to act in the best interest of the patient.

Difference between 'end of life care' and 'Euthanasia':

However, end-of life care should not be confused with euthanasia. Euthanasia or Physician Assisted Suicide is a situation when a doctor, after great deliberation, induces the death of a patient who requests him for it. While the decision for euthanasia is always unilateral and taken by the individual, the decision for withholding end-of-life care is never unilateral: the doctors and family both make it. And even in such cases, care is never withdrawn, instead, life-prolonging treatments are replaced by treatment that provide relief from pain and facilitate a peaceful, dignified process of dying.

Role of Doctor and Family:

The doctor and the family are the major players here, since most ICU patients are sedated and intubated. The family is the surrogate decision-maker. Initially, most families want full intensive care to be given. Requests to Limit or withdraw treatment are usually made after a few days, when the futility of treatment becomes evident and the financial burden starts mounting by then.

Studies show roughly 20% families ask for some sort of limited treatment. Another 20% insist on continuing life-support even if it's futile. The rest agree to limit life support measures at some point during the ICU stay. The doctor's role is vital, as he has to explain the futility of treatment. Linked to the issue of a slow death are a patient's rights to refuse treatment; even if it is to his detriment. The exercise of this right should not be misinterpreted as an attempt to commit suicide. In the US, citizens can express their preference for the manner of treatment towards end of life. [1]

What are ethical guidelines?

As per MCI-2002 guidelines [9] practicing euthanasia shall constitute unethical conduct. However, on specific occasion, the question of withdrawing supporting devices to sustain cardio-pulmonary function even after death, shall be decided only by a team of doctors and not merely by the treating physician alone. A team of doctors shall declare withdrawal of support system. Such team shall consist of the doctor in-charge of the patient, Chief Medical Officer / Medical Officer in-charge of the hospital and a doctor nominated by in-charge of the hospital from the hospital staff or in accordance with the provisions of the Organ Act [8, 9]. **(Chapter VI, Point 6.7)**

Guidelines as per Transplantation of Human Organ Act [8]:

Alternatively decision should be taken according to Section 3 (6), Chapter II of the Act [8] in cases of Brain Stem Dead by a board of medical experts consisting of the following:

- i. The Registered Medical Practitioner in-charge of the hospital (Administrative In-charge) in which brain stem death has occurred,
- ii. An independent Registered Medical Practitioner, being a specialist to be nominated by the Registered Medical Practitioner in-charge of the hospital, from a panel of names approved by the Appropriate Authority, and
- iii. A Neurologist or Neurosurgeon to be nominated by the Registered Medical Practitioner in-charge of the hospital, from a panel of names approved by the Appropriate Authority, and
- iv. The Registered Medical Practitioner treating the person whose brain stem death has occurred.

Before withdrawing support cardiopulmonary (doctor must ensure in the event of patients brain stem death that a certificate as specified in Form-8 has been signed by all the members of the Board of Medical Experts.

The patient shall be carefully examined twice after an interval of about six hours (minimum time interval between the First and last testing).

ISCCM Guidelines: [10]

Safeguards suggested include:

1. A **'competent'** patient has a right to refuse life support and his call is binding on doctors, provided it is an **'informed decision'**. A terminally ill patient is said to be competent if he is not mentally unsound or a minor and is conscious enough to take an informed decision.
2. In the case of an incompetent patient or a competent patient unable to take an informed decision, the doctor can decide to pull the plug if that is in the **'best interests'** of the patient and if it is based on the opinion of a body of **three medical experts**.
3. The assessment of **'best interests'** would **not be confined to medical interests** but include **'ethical, social, moral, emotional and welfare considerations'**.
4. The experts will be selected from a **Standing Panel** published in the gazette by the **Director General of Medical Services**.
5. The doctor taking the decision to withdraw life support measures **must maintain a register** giving a complete account of the **basis of his decision**.
6. But if the patient or his family wants life support measures to continue, they can **move the High Court that the doctor's decision is unlawful**.

Legal Scenario:

The Law Commission headed by the **Supreme Court Judge M. Jagannadha Rao**, in its **400 pages report** due to be tabled in Parliament, is a legal document that authorizes doctors in certain situations 'to withhold' or 'withdraw' 'life support measures' such as **ventilators** and **artificial feeding**. The **Law Commission** tried to clarify that **"withdrawal of life support to patients is totally different from euthanasia and assisted suicide"**. **Euthanasia**, which is legal in only two countries, **Netherlands** and **Belgium**, and one State in the **US, Oregon**, is an act of any person, including a doctor, to kill a terminally ill patient by giving drugs.

Assisted Suicide is an act of a patient who receives the assistance of a doctor and takes drugs with the intention of committing suicide.

On the other hand, **denial of life support**, which is legal in most countries, including India, applies to situations where the patient is in a critical condition or under coma and has been artificially kept alive through modern technology.

Law Minister, Mr. H. R. Bharadwaj said **"we are of the view that euthanasia and assisted suicide must continue to be offences under our law"**.

Attempting suicide is a penal offence under Section 309, IPC. The High Courts of Bombay[11] and Delhi[12] have held Section 309 unconstitutional. In

a case Rathnam P [13] before a Division Bench of the Supreme Court, it was argued that provisions of Section 309, IPC are arbitrary, monstrous and barbaric and offend the equality clause under Article 14 of the Indian Constitution.

The Division Bench by invoking Article 21 has held that since 'right to live' does not include 'right to die', Section 309, IPC is violative of Article 21 of the Indian Constitution. It is true that the Division Bench judgment of the Supreme Court stands overruled in another case in 1996 [14], the Court observed: "the right to life including the right to live with human dignity would mean the existence of such a right up to the end of natural life. This also includes the right to a dignified life up to the point of death including a dignified procedure of death. In other words, this may include the right of a dying man to also die with dignity when his life is ebbing out". The Supreme Court in this case has summed up the law of the land by observing that the right to live with human dignity includes the right to terminate natural life after commencement of natural process of certain death. The SC upheld the judgment of Andhra Pradesh High Court of 1988 [15].

In 1972, the Law Commission recommended abolition of Section 309 IPC. In UK, there is no punishment for abetment of suicide. In a number of countries, including UK, euthanasia or mercy killing is permitted. In 1983, Dutch Parliament permitted mercy killing under strict guidelines. In 1996 case [14] the Court has recognized the right to die with dignity. Hence, a dying man who is terminally ill or in a Persistent Vegetative State (PVS) can be permitted to prematurely terminate his life.

If any law comes in conflict with constitutional rights, it will have to yield. According to the **Sati Act [16]**, abetment of Sati means that if any widow commits Sati or if someone abets or glorifies it, the act is punishable. On the similar ground if any body glorifies 'euthanasia' it should be dealt with stern action.

Need for Creating Social Awareness:

Caught between mounting expenses and doctors unwilling to withdraw treatment, families often taken away patients without doctor's consent. LAMA (Leave Against Medical Advice) is quite common here. Another problem is the **lack of social awareness**. Legal professional confuse it with euthanasia. The issue of forging life support is confounded by its misinterpretation as suicide or abetting suicide. This sensitive issue has become a casualty of confusion even before it has been made public. Contrary to speculation in the media over the last few months, the **Law Commission's Report does not seek to legalize euthanasia or mercy killing**.

Summary and Conclusions:

There is intense need to legally define the meaning of 'terminally ill' and 'the various ways of limiting treatment' and give detailed 'legal guidelines for withholding' or 'withdrawal of treatment' in such cases. By making clear-cut difference between 'euthanasia', 'end of life care' and other related terms along with creating awareness among the medical as well as law professionals, and general public will go a long way. Thus preventing from unnecessary confrontation and filing of frivolous writ petitions.

Before making any law on this issue it will be better to deliberate on it on various scientific forums, with religious leaders, and social organizations, because the issue involves ethics, law, religion and economics, etc.

As for withdrawal of life support measures is concerned, the report proposes a law providing safeguards against the existing danger of the patient being hauled up on the charge of **attempting to commit suicide** or the **doctor being tried for abetting suicide** or **attempting culpable homicide**. It is only when the safeguards prescribed in the proposed recommendations are followed that the decision to withhold or withdraw medical treatment to a terminally ill patient will be treated as lawful.

References:

1. **R-1**-Sujata Dutta Sachdeva, 'Dying With Dignity', Sunday Times, October 15, 2006: 6
2. **R-2**-Arti, 'Right to Die?', Daily Excelsior, Magazine (J&K), Sunday, June 15, 2003: 1.
3. **R-3**-New England Journal of Medicine, September 2003.
4. **R-4**-Fasting to easy death (The New York Times), Hindustan Times, August, 01, 2003: 10.
5. **R-5**-Ashok Das, 'Dying man on strike for euthanasia', Hindustan Times, December 12, 2004: 01.
6. **R-6**-Mridula Chunduri, 'Time running out for dying chess champ', The Times of India, December 14, 2004: 05.
7. **R-7**-Anuradha Mukherji, 'Give us the right to die with dignity', The Times of India, December 21, 2004: 05.
8. **R-8**-The Transplantation of Human Organ Act, 1994
9. **R-9**-The Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations-2002.
10. **R-10**- Manoj Mitta "Can doctors pull the plug? Withdrawal of Life Support isn't Mercy Killing", 'Times of India, Delhi Edition, August 5, 2006: 10
11. **R-11**--Maruti Sripati Dubai v. State of Maharashtra (1987) Cr. L.J 549.
12. **R-12**- Delhi High Court.
13. **R-13**-Rathnam P v. Union of India (1994) 3 SCC 394.
14. **R-14**-Gian Kaur v. State of Punjab (1996) 2 SCC 648.
15. **R-15**-Chenna Jagadeshwer v. State of A.P. (1988) Cr. LJ 549
16. **R-16**-The Sati Prevention Act, 1987.
17. Pachnanda Jain, Ex.-Justice, Rajasthan High Court, 'Greatfully Dead', The Times of India, New Delhi, October 18, 2006: 14.
18. Dr. Farhad Kapdia, Dr Manoj Sing, Dr Jigeeshu Divatia et al, Limitation and withdrawal of intensive therapy at the end of life: Practices in Intensive Care Units in Mumbai; 2005.

Forensic Anthropology in India

Ruma Purkait, Ph.D.
 Institutional Affiliation Department of Anthropology,
 Saugor University,
 Saugor, M.P. – 470 003
 Tel : 07582-264475 extn. 128, 09425655579 (M)
 Email: r.purkait@gmail.com

Abstract

The role of Forensic Anthropologist in the investigation and reconstruction of crime has been dealt in detail. An attempt has also been made by the author to discuss the current status of the subject in India.

Key Words: Forensic Anthropology, Identification, Human Skeleton

Introduction:

A need was felt to explore the basic subjects to multidisciplinary specialities. One of the best examples is confluence of Medicine with Forensic Science and more precisely Forensic Medicine with Anthropology as Forensic Anthropology.

For a very long time the overworked medical profession and Law enforcement agencies tried to work in the subject with fragmentary patch ups. The science of Forensic Medicine looked for assistance in their 'Reconstructive and Investigative medicine' towards the subject of Anthropology which is in nutshell the study of man - 'the total man'. It deals with man's physical makeup and his pattern of social and cultural behaviour in the present and past. The major two divisions may be considered as Physical and Social Anthropology. When the knowledge of Physical Anthropology is applied to crime investigation and reconstruction, it becomes the subject of Forensic Anthropology.

The rise of the subject in United States was well recognised when formal establishment as a section was made in the American Academy of Forensic Sciences in 1972 (1). For many years the assistance of Forensic Anthropology was utilised by the Medico legal profession, investigative agencies and law enforcing agencies but without any independent recognition. In India even today the status is not much better as has been recognised in United States. A global approach is needed to recognise scientific assistance the subject can provide with its professional multidisciplinary approach.

The Forensic Anthropologist makes important contribution to investigations related to destruction trauma as in explosion, air and land crashes, fire, chemical destruction, cases where bodies have been disposed off or secreted and have become

skeletonised and in archaeological excavation. The science of Forensic Anthropology includes photographic superimposition, facial reproduction, and determination of time since death, analysis of past injury and medical treatment, anatomical variant and the most important establishment of identity of skeletonised human remains. It is the expertise of Forensic Anthropologist to decide whether the remains are human or animal or inorganic material. Once he decides that the remains are human he proceeds further to estimate the physical norms like stature and estimation of age at death, racial affiliation, sex and other factors which goes to contribute towards identity. The necessary task of Anthropologist includes an expert opinion on the reconstruction of trauma and to suggest or identify the type or size of weapon(s) used and number of blow sustained by the victim.

Though in nature's reproduction, human skeleton appear to be symmetrical and has the same number of bones (206+1), no two skeletons are identical. The Anthropologist with passage of time gains experience in examination of hundreds of remains and develops a very valuable skill and becomes familiar with the delicate variation in the human skeletons. The experienced hand of the Forensic Anthropologist frequently leads to positive identification. Most of the old skeletal injuries found on examination lead to definite identity on the basis of history, clinical record and photo images (2). Any medical interference in the treatment of hard part injuries like dental treatment assist in positive identification.

In India, medico-legal cases pertaining to bones are mostly examined by the doctors of the Forensic Medicine department or the Forensic Science laboratory where such cases are referred. However, over the last few years, with growing awareness of

the role and expertise of Forensic Anthropologist a need is felt to employ their services. India being a multiracial country, the need is greater as Anthropologists have the training, skill and familiarity of subtle racial variation in human skeleton which a medical man lacks.

Moreover unlike in the past when identification from skeletal parts was based on examination of morphological traits, with time this mode of assessment has given way to more precise and definite anthropometric measurements which when processed through modern statistical techniques (Discriminant function analysis) make identification more objective. An Anthropologist, through years of training in anthropometry has an advantage over a medical person.

In India more than thirty Universities run Graduate and Postgraduate courses in Anthropology, out of which five Universities have already introduced Forensic Anthropology as an independent paper at Post Graduate level. Delhi University was the first to take the initiative in 1984. Forensic Anthropology as a part of Forensic Science is also taught as a certificate course in five other Universities.

With growing popularity of the subject among the students and the awareness of its practical utility, Forensic Anthropology in India has slowly begun to take shape as a recognised field, separate from the parent subjects of Forensic Medicine and Anthropology.

Acknowledgement:

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References:

1. Kerley ER. Recent development in Forensic anthropology. Yearbook Phys. Anthropol., 1978; 21 : 160-173.
2. Mann RW and Ubelker DH. The Forensic Anthropologist. FBI Law Enforcement Bulletin, 1990; July issue: 20-23.

Is The Femur Bone Insufficient Material for DNA Extraction?

*Dr. Kirpal Singh Azad, MD, **Dr. Shilekh Mittal, MD, DNB, ***Dr. Ashok Chanana, MD, DNB, ****Dr. Hakumat Rai, MS

*Medical Officer, Forensic Medicine, Govt. Medical College, Amritsar

**Demonstrator, Forensic Medicine, Govt. Medical College, Chandigarh

***Associate Professor, Forensic Medicine, Govt. Medical College, Amritsar

****Additional Professor, Forensic Medicine, Govt. Medical College, Amritsar

For crime detection, science has opened new ventures. The latest entry of molecular biology i.e. DNA profiling has been accepted as near 100% foolproof method of identification. Currently, it is being used for establishing paternity, identification of the subject, crime detection etc from the trace evidences. The courts give adequate significance to the reliability of this test. And as such courts decide many criminal or civil issues.

A case for DNA testing was send to the Department of Forensic Medicine & Toxicology, Govt. Medical college, Amritsar by local police authorities on 4/9/2003. The concerned doctor of the department dispatched the material to the reputed and recognized DNA laboratory of the country. But the report was very disappointing.

The case history relates to an illicit relation between a female and police personnel. The product of their illicit affair resulted in pregnancy and subsequently delivery of an illegitimate child which was concealed by the mother for which she was charged U/s 318 IPC. On the statement of mother DNA test was asked for by the police from this department to ascertain the paternity of the newly born in issue who had died and the body recovered from a pond which was initially subjected to autopsy and later on buried. Within about one month, the body of the

newborn was exhumed by the Magistrates order with a request for DNA test of the mother and the alleged father and the exhumed dead body of the new born. Blood samples from the mother and alleged father were collected and femur bone from the exhumed child was collected following all the prerequisites and methods of preserving the tissue without wasting. The tissue was send to the DNA laboratory through authorized messenger. From birth to recovery of DNA from the infant, femur bone as per the police record was less than a month old. The report in this case was received after six months where the examination revealed that DNA profiling was done by Amp/STR® profiles plus loci were used for DNA profiling and the data was analyzed by Unix geriscan and genotyper software.

The report highlighting DNA profile was positive in blood samples but DNA profile from femur bone of the child did not yield any DNA profile (Fig. No 1,2,3 &4). On receipt of the report, the basic issue i.e. the paternity establishment and alleging illicit sexual intercourse, delivering illegitimate child and concealing the birth of the child vanished like waves of sea. So the occurrence of the crime and its detection from DNA profiling proved to be utter failure.



Fig. No. 1

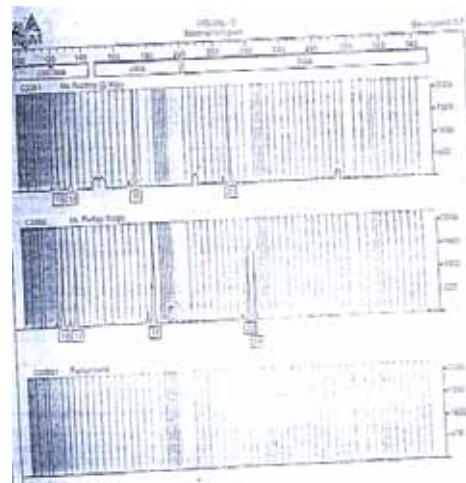


Fig. No. 2

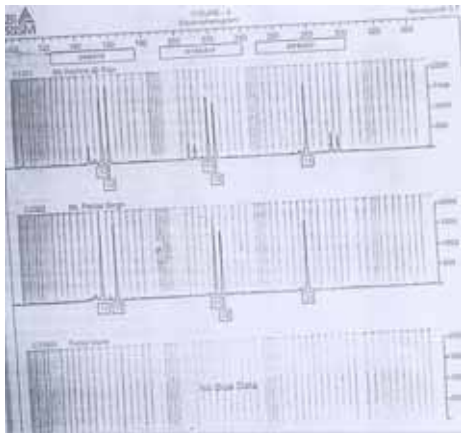


Fig. No. 3

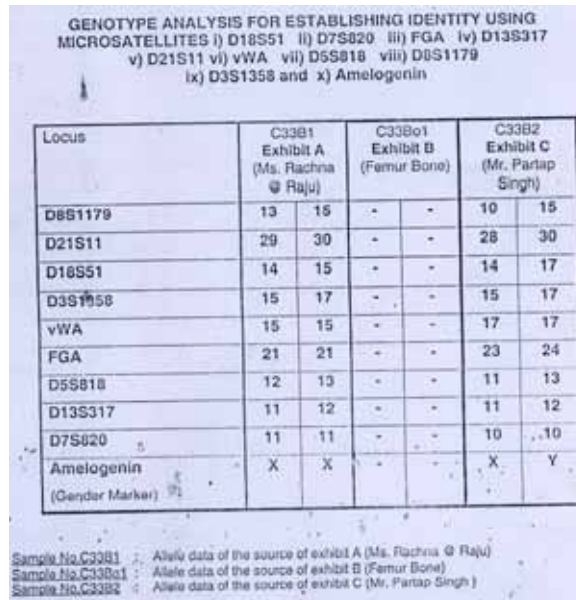


Fig. No. 4

Discussion

DNA profiling has been recognized and highlighted internationally as a near sure test for identification. Workers have identified DNA from biological materials and trace evidences like salivary stain, seminal stain, blood stain, mutilated remains and even in very old skeletal remains. One workers has quoted the detection of DNA leading to identity from salivary stain found on the postage stamp adherent to an envelope. Similarly other worker identified the person from DNA profiling from the material found on cigarette butts, tooth brushes etc. With these results, this test became of paramount significance for the officers busy in crime detection. So whenever they found such biological material, they became hopeful that they have almost solved the case leading to apprehension of the culprit at the earliest. But a strange event has come up from our experience in this case about how much we should depend on DNA profiling from bony tissue which resists putrefaction for many years and a disgusting reports showing inability to demonstrate DNA profiling from relatively fresh bone. This situation raises a big question mark on the reliability and dependability of such test for identification. So two things come in mind i.e. either the scientist analyzing may be correct in their place or their opinion is doubtful.

So in the end authors are of the opinion that Government of India under the Ministry of Home Affairs should set up its own DNA laboratory and DNA profiling should be secondary test. If the primary test carried out in the past are not

indicative of anything, only then the material should be subjected to DNA profiling.

Clinical Profiles, Treatment and Complications of Snake Bites A One-Year Retrospective Study

*B.D.Gupta MBBS, M.D., **V.N.Shah MBBS

*Senior Professor & Head,

**Junior Resident

Department of Forensic Medicine & Toxicology

M. P. Shah Medical College, Jamanagar-361008

Phone no- +91-0288-2710595 (R).

E-mail: bdgujn@yahoo.com

Abstract

A total of 144 cases of various animal bites and stings were registered during year 2005. Fifty per cent of these cases were due to snakebites only. Young male patients from rural area with the mean age of 31 were commonly the victims of snake bites. The commonest symptoms noted were edema and swelling over bite marks (65.62%), followed by pain (53.12%). Among neurotoxic symptoms nausea, vomiting (18.75%) and ptosis (12.5%) were most common than other features. Most common toxicity was noted in the form of neurotoxicity which, resulted in 18.75 per cent mortality. Average polyvalent Anti Snake Venom (ASV) administered was 160 ml in divided dosage with mean duration of ASV therapy was 24 hours. Average hospital stay was 2.3 days for the cases of snakebites.

Key Words: Snakebites, Neurotoxicity, Anti Snake Venom.

Introduction:

Venomous snakes found all over the world sparing few countries and therefore cases of snakes bite were reported from all over the world¹. Total number of snake bites in world is around 500,000 per year with approximately forty thousand to one lakh deaths as reported by various authors.^{1, 2, 3} The incidence being relatively higher in tropical countries as compared to developed countries⁴. Approximately 330 species of snakes exist in India, of which about 70 species are venomous. The commonest venomous snakes are common krait, cobra, saw scaled viper and Russell's viper². Pit viper (Hyphanale- hyphanale) is equally deadly, though not recognized by many and that could be one of the causes of increased mortality by pit viper envenomation.⁵ Although, according to an estimate, there is about 50,000-1, 00,000 deaths a year worldwide caused by venomous snakes bite. In India, there are estimated 10,000 to 50,000 deaths per year due to venomous snakebite³. Though, polyvalent ASV is highly effective against the four common species of snakes and it is freely available, deaths accounted to snakebite are very high. However, indication of ASV are known, the dose is not fixed⁴ and reactions due to ASV are serious⁶ and limiting factors for the administration of ASV, though it is a life saving drug. With the view in all above factors in mind, we studied clinical profile of snakebites and treatment regime followed in such cases in our hospital. We also tried to analyze possible factors responsible for mortality due to envenomation.

Materials and Methods:

The study was conducted in the department of Forensic Medicine and Toxicology, M.P.Shah Medical College, Jamnagar. The study was carried out using record case sheets obtained from the record section of G.G.Hospital, Jamnagar. All the case records for the stipulated period of one year i.e. 1-1-2005 to 31-12-2005 were collected and all necessary information were obtained and recorded in the predesigned proforma. Later on from that proforma, we analyzed the various aspects like clinical features, complications and treatment modalities offered during hospital stay of the patients.

Results:

A total of 268 medico legal cases of various poisonings registered in the department of Medicine, G.G.Hospital, Jamnagar during year 2005, of which 144 cases accounted to various bites. Snakes bites were commoner than other bites and resulted in 72 admissions (50%). Eight cases were excluded from study as either handwriting was not deciphered or information required was incomplete or patients absconded without any treatment. Therefore, 64 cases of snake bites were analyzed further for clinical profile, treatment and complications. Almost all ages were affected ranging from 12 years to 75 years with mean age of 31. Age distribution of cases is given in Table-1. 38 were males and 26 were females with male: female ratio of 1.46:1. Most of the cases were from rural area (village) of Jamnagar district. i.e. 53 cases (82.81%). Out of 53 cases, 32 cases were first visited either Primary Health Centre

(PHC) or Community Health Centre (CHC) but only six were given anti snake venom (ASV) or test dose of ASV. The average time taken from the bite to initiation of treatment was 3.5 hours for patient coming from village and 2.7 hours for patients residing in Jamnagar. Out of 64 cases 22 were neurotoxic bites (34.37%), 6 were Vasculotoxic and 22 were uncomplicated. In 14 cases, there were only local reaction and no signs of envenomation.

The commonest symptoms noted were edema and swelling over bite marks (65.62%), followed by pain (53.12%), nausea and vomiting (18.75%) and ptosis (12.5%). All clinical features are summarized in Table-2. Mortality noted in our study is 18.75 per cent (12 cases) and all were accounted to neurotoxicity. 31 patients were administered anti snake venom as an antidote. Mean duration of ASV therapy was 24 hours ranging from 6 hours to 72 hours and average hospital stay was 2.3 days. Average ASV administered was 160 ml in divided dosage. There was no fixed protocol for the administration of ASV according to the severity of envenomation and treatment regime was different in different units of medicine wards.

Discussion:

Snakebite is a serious public health problem in India as 10,000-50,000 die annually due to snake bites^{2, 3, 7, 8}. In the present study, snakebites were the common bite and constitute 50% of the total cases of bites. This higher incidence of snakebites is probably because of two reasons; 1) majority of the cases come to hospital for the treatment as a fear of envenomation and death, 2) most of the population in India is still rural and when farmers work in the fields they do not have any protective gears commonly. Also they work in dark during night time. Many cases were reported in rainy (monsoon) season because increase surface mobilizations of snakes occur due to water logging of the snakes holes. Snakes bite is common among young male (as in our study the mean age was 31 years) and rural population is more affected than urban in account of their mobility in the field⁹.

The good practice observed in our region was that none of the patients tried any of the housed hold,

traditional, remedial medicine or any harmful procedures like- application of tourniquet, cutting the wound and sucking etc. Most of the patients (67.18%) took visit to nearby PHC or hospital immediately for the treatment of snakebites. In southern Maharashtra viperine bite is more common⁹ resulting in vasculotoxicity but in our region commonest bites were neurotoxic (34.37%). We believe that clinical classification is better for the treatment and prognosis of snake bites as compare to conventional classification of bites as per identification of species of snakes. It is because, in majority of cases the species of snakes could not be identified due to inconclusive description of snake by the patients or in many cases patient may have not seen the snakes at all. The commonest symptoms noted were edema and swelling over bite marks (65.62%), followed by pain (53.12%). Nausea and vomiting (18.75%) and ptosis (12.5%) were important early symptoms for the development of neurotoxicity. In our study all mortality (18.75%) were accounted to neurotoxicity only. It is a known fact that death may result from 20 minutes to 6 hours after bites from cobra and it also depends on the site of bite¹⁰. All cases were not treated with ASV but patients with only signs and symptoms of envenomation were treated with antivenin. Two patients were presented to hospital in drowsy state along with ptosis and difficulty in taking breaths were received ASV without test dose and improved dramatically. 0.25-0.5ml 1:1000 adrenaline was administered along with 200 mg of hydrocortisone single dose in each case prior to administration of ASV. There has been report that use of 0.25 ml of 1:1000 adrenaline given subcutaneously immediately before administration of antivenom serum to patients with envenomation after snake bite reduces the incidence of acute adverse reactions to serum.¹¹ In none of the cases the ASV was given locally. ASV is not effective against local effects of venom as they are caused by kinins and activation of complements and do not require ASV¹⁰. The average ASV needed to treat patient of snakebite was 160 ml (16 vials).

Table 1: Age and sex wise distribution of cases

| Age Group (years) | Male | Female | Total (%) |
|-------------------|------|--------|-----------|
| >12-19 | 10 | 2 | 18.75 |
| 20-29 | 12 | 7 | 29.68 |
| 30-39 | 7 | 9 | 25.00 |
| 40-49 | 2 | 5 | 10.93 |
| >50 | 7 | 3 | 15.62 |
| Total | 38 | 26 | 100 |

Table 2 : Frequency of clinical features of patients with snake bites: #

| Clinical features | Frequency | Percentage |
|-----------------------------|-----------|------------|
| Bite marks | 52 | 81.25 |
| Edema & Swelling | 42 | 65.62 |
| Bleeding | 7 | 10.93 |
| Pain | 34 | 53.12 |
| Weakness | 2 | 3.12 |
| Sweating | 2 | 3.12 |
| Numbness/tingling | 4 | 6.25 |
| Nausea/vomiting | 12 | 18.75 |
| Giddiness | 8 | 12.50 |
| Necrosis | 8 | 12.50 |
| Aspiration pneumonia | 1 | 1.56 |
| Headache | 3 | 4.68 |
| Sleepiness/drowsiness | 7 | 10.93 |
| Diplopia | 1 | 1.56 |
| Ptosis | 8 | 12.50 |
| Froth in mouth | 2 | 3.12 |
| Change in voice | 2 | 3.12 |
| Unconsciousness* | 4 | 6.25 |
| Hemetemesis | 1 | 1.56 |
| Hematuria | 1 | 1.56 |
| Hemoptysis | 1 | 1.56 |
| Difficulty in taking breath | 3 | 4.68 |

In many patients there may be more than one sign or symptom at a time.

* All four unconscious patients were cyanosed and dead at the time of arrival in hospital.

References :

1. Warrell DA. Animal toxins. In: Cook G (ed). Manson's Tropical Diseases. 20th edn, 1996. ELBS with WB Saunders, London.468-515.
2. Pillay VV. Comprehensive medical toxicology. 1st Ed. Banglore: Paras publications; 2003. p.552.
3. McNamee D. Tackling venomous snake bites world wide. *The Lancet* 2001; 357:1680.
4. Warrell DA. The clinical management of snake bites in the southeast. *Asian J Trop Med Public Health* 1999; 30: s1-s67.
5. Guideline for the treatment of snake bites in South East Asia Region. WHO Publications, New Delhi. 2005.
6. Karunaratne KE de S and Anandadas JA. The use of antivenom in snakebite poisoning. *Ceylon Med J* 1973; 1: 37-43.
7. Porgens N. Snake venoms, their biochemistry and mode of action. *Science* 1953; 117: 47-51.
8. Ahuja ML, Singh G. Snake bite in India. *Ind J Med Res* 1954; 42:661-686.
9. Natasha R. Clinical study of viperine snakebite in southern Maharastra. *International journal of medical toxicology and legal medicine* 2002; 4: 1-4.
10. Subramanyam, BV(ed) Modi's Medical Jurisprudence and Toxicology, 22nd ed. 1999; Butterworth.
11. Premawardhena A P, De Silva C E, Fonseka M M D, Gunatilake S B, De Silva
12. H J. Low dose subcutaneous adrenaline to prevent acute adverse reactions to antivenom serum in people bitten by snakes: randomised, placebo controlled trial. *BMJ* 1999; 318:1041-1043.
13. Reid H.A, Theakston R.D. the management of snakebites. *WHO Bulletin*, 1983; 61: 885-895.

Clinico-pathological profile of ethylene dibromide poisoning

*Rajesh Bardale MD, **P. G. Dixit MD (FM), MD (Path), ***Manish Shrigiriwar MD

*Lecturer

**Professor & Head

***Associate Professor

Dept. of Forensic Medicine Govt. Medical College

Nagpur (Maharashtra)-Pin-440 003.

E-mail: bardalerv@yahoo.co.in

Abstract

Ethylene dibromide (EDB) is widely used for fumigating the grains, vegetables and fruits. In an attempt to analyze clinical, biochemical and autopsy profile of persons died due to EDB poisoning, the present three year retrospective study is undertaken. The study involves 14 deaths due to acute EDB poisoning comprising of 8 (57.14%) men and 6 (42.85%) women. 71.42% patients presented with altered sensorium and 28.57% presented with abdominal pain, nausea and vomiting. Autopsy showed congestion, pulmonary edema, visceral and gastrointestinal bleeding, massive hepatic necrosis and degeneration and necrosis of tubular epithelium of kidney.

Key words: Poisoning, Ethylene dibromide, Grain preservative.

Introduction:

Ethylene dibromide (EDB) is an organic compound, easily available in India and widely used for fumigating the grains, vegetables and fruits. The increasing use of this agent in agriculture industry has caused great concern in recent times, apart from fatalities from acute intoxication; the public health implications are potentially great, as it is carcinogen and genotoxic (1).

Survey of Indian literature reveals that few reports of EDB poisoning related acute illness or deaths have been published (3-7). The present study was undertaken with an aim to analyze the clinical, biochemical and autopsy profile of persons died due to EDB poisoning.

Methods:

This is a three-year retrospective study conducted at department of Forensic Medicine, Govt. Medical College, Nagpur, which is a tertiary care teaching hospital located in the central part of India. The data for analysis were obtained for the year July 2003 to June 2006. The study includes 14 cases identified as deaths due to EDB poisoning. A standard proforma was designed to ensure consistency for the whole sample. The relevant data were obtained from the police requisition forms, autopsy reports, forensic science laboratory report, clinical case records and histopathology report.

Results:

Of the 14 cases studied, 08 (57.14%) were male and 6 (42.85%) were female. Mean age was 31.64 year (standard deviation 13.84 year) with a range of 18 to 55 years (Table No. 1). The stated amount of EDB consumption ranged from 1 to 5 ampoule (average 2.1 ampoule, each ampoule contains 3 ml of liquid). In all cases there was history of oral ingestion of

EDB. The period of survival ranged from 10 to 123.5 hours with an average of 70 hours (Table No.2). It was a suicidal attempt in all cases and significantly all cases were referred to Nagpur from neighboring state, Madhya Pradesh.

Out of 14 patients, 10 (71.42%) presented with altered sensorium and 4 (28.57%) with abdominal pain, nausea and vomiting. In 12 (85.71%) patients, deranged renal and hepatic functions were noted in form of oliguria, anuria, and hematuria, bleeding diathesis with gastrointestinal bleed and development of acute renal failure and coagulopathy. Hepato-renal involvement became apparent as early as day one, however, majority had it on day two onwards. The ECG was normal except in one case, which demonstrated sinus tachycardia. Severe metabolic acidosis was a prominent feature nearly in all cases. Jaundice was manifested in 6 (42.85%) patients who survived for more than 50 hours. There is leucocytosis with decrease in count of RBCs and platelets. Urine showed presence of albumin, sugar, occult blood and RBCs. The indirect bilirubin increased more than direct one. Two patients (14.28%) had 53-mg/dL blood sugar at admission. The serum proteins were found within normal limit. The blood urea and serum creatinine was raised from day one onwards and the increase was in average of 160 mg/dL and 7.83 mg/dL respectively. The SGOT and SGPT were also found to be raised and the increase was more than 64 times in SGOT and about 100 times in SGPT. The alkaline phosphatase increased about 40 times and PT and PTT were found to be prolonged. The patients received supportive treatment, gastric lavage, inotropic support, diuretics, bicarbonates, vitamin K and exchange transfusion.

Gross examination at autopsy showed congested and edematous lungs. Liver was congested and in two cases subcapsular hemorrhage was recorded. Kidneys showed cortical hemorrhages. Gastro-intestinal bleed was noted in 12 cases and jaundice in 6 cases. Reddish colour, bilateral pleural effusion was noted in one case. Microscopy revealed congestion and hemorrhages in cerebral cortex, congestion and oedema in heart; congestion, oedema and fresh hemorrhages were noted in lungs. Liver showed massive hepatic necrosis (central lobular) and degeneration. Spleen and pancreas were congested. Kidneys showed congestion, necrosis and degenerative changes in tubular epithelium.

Discussion:

Reviewing deaths due to poisoning in India, the recent trend suggests that in northern part aluminium phosphide has emerged as a major player. However, in southern area, still Organophosphorus compound has maintained its premier position (2). In present study, all cases were referred from nearby Chindwara, Seoni and Jabalpur belt of Madhya Pradesh. The area is known for taking wheat as a major crop and EDB is used extensively in this pocket to preserve wheat.

Ethylene dibromide is a colourless, clear, heavy liquid with sweet chloroform like odour. It is marketed in India with trade name of Brofume, Celimide, Fumogas etc. It is available in 3-ml ampoules with a specific gravity of 2.15-2.17 at 27-degree Celsius (approximately 2160 mg EDB/ml) (8). The oral LD50 (lethal dose) of EDB is 108 mg/kg for rats, 250 mg/kg for mice and 55 mg/kg for rabbit (9). In human being, exact fatal dose and fatal period is not known, however, about 3 ml of ingestion is considered to be fatal (8). In the present series, the dose appears to be average 6 ml and average period is 70 hour. EDB has biological half-life of less than 48 hours in rats, chicks, mice and guinea pigs. EDB is readily and rapidly absorbed from the lungs, when breathed as vapors, from the gastrointestinal tract when ingested or through the skin when applied topically (8,9).

The presenting clinical features are mainly confined to the central nervous system and gastrointestinal tract but subsequently hepato-renal involvement predominates with involvement of coagulation cascade. The mechanism of acute EDB toxicity is unknown, but could result from its properties as an alkylating agent, which can interrupt many critical metabolic processes and lead to cell death (1). The finding of present study reveals that renal and hepatic involvement is a major concern in EDB poisoning (1,3,4,8). The hepato-renal involvement is manifested by appearance of jaundice, bleeding

diathesis, deranged PT and PTT and increased SGOT, SGPT. Massive hepatic necrosis is manifested by raised alkaline phosphatase. Scanty urine, anuria, oliguria, increased creatinine and urea and degeneration of tubular epithelium indicate acute renal failure.

Recognition of hepato-renal syndrome is of paramount importance for management of patients. Nevertheless, Prakash et al (5) had reported a case of acute renal failure with toxic hepatitis that was managed successfully. Thus early recognition of EDB poisoning would offer help in management of these cases.

Autopsy findings of congestion, pulmonary edema, visceral and gastro-intestinal bleeding, massive hepatic necrosis and degeneration and necrosis of tubular epithelium supports progressive hepato-renal involvement by EDB.

In conclusion, it can be added that hepato-renal involvement is a prominent feature in EDB poisoning and early recognition of the signs and symptoms would offer help in management of these cases. In view of high mortality caused by this agent and growing popularity as a "sure-success" suicidal agent, it is suggested that either EDB should be banned or a restricted sale should be practiced.

Table No.1: Demographic profile of cases

| Sex | No. of cases | Age in years (mean) | Age in years (range) |
|--------|--------------|---------------------|----------------------|
| Male | 8 | 34.87 | 18-55 |
| Female | 6 | 27.33 | 20-41 |
| Total | 14 | 31.64 | 18-55 |

Table No.2: Survival period in fatal cases

| Duration of survival (in hours) | No. of cases (n= 14) | % of cases |
|---------------------------------|----------------------|------------|
| < 24 | 2 | 14.28 |
| 25-48 | 2 | 7.14 |
| 49-72 | 4 | 28.57 |
| 73-96 | 2 | 14.28 |
| 97-120 | 2 | 14.28 |
| 121-144 | 2 | 14.28 |

References:

- 1) Letz G A, Pond S M, Osterloh J D, Wade R L, Becker C E. Two fatalities after acute occupational exposure to ethylene dibromide. JAMA 1984; 252: 2428-31.
- 2) Pillay V V. Comprehensive Medical Toxicology. 1ed 2003. Paras publisher, Hyderabad.
- 3) Saraswat P K, Kandara M, Dhruva A K, Malhotra V K, Jhanwar R S. Poisoning by ethylene dibromide-six cases: A clinicopathological and toxicological study. Indian J Med Sci 1986; 40:121-23.
- 4) Gupta A, Varma A, Kothari R P. Ethylene dibromide poisoning in Uttaranchal. Journal Assoc Phys India 2003; 51:1282.
- 5) Prakash M S, Sud K, Kohli H S, Jha V, Gupta K L, Sakhuja V. Ethylene dibromide poisoning with acute renal failure. First reported case with non-fatal outcome. Renal Failure 1999;21:219-22.
- 6) Singh S, Chaudary D, Garg M, Sharma B K. Fatal ethylene dibromide ingestion. Journal Assoc Phys India 1993; 41:608.
- 7) Raman P G, Sain T. Clinical profile of ethylene dibromide poisoning. Journal Assoc Phys India 1999; 47:712-13.
- 8) Garg P K, Jha D, Agarwal A, Jani U J. Ethylene dibromide poisoning. Journal Assoc Phys India 2002; 50:1063-65.
- 9) Extoxnet-extension toxicology network. Downloaded from <http://pmep.cce.cornell.edu/profiles/extoxnet/dienochlorglyphosate/ethylene-dibromide-ext.html>.

Bone Cut : Whether Simple or Grievous or Dangerous?

*Dr. O.P. Aggarwal, **Dr. A.D. Aggarwal, **Dr. Harpreet Singh

*Professor, **Assistant Professor

Department of Forensic Medicine, M.M. Medical College, Mullana, Ambala.

Abstract

It is common practice throughout the country that while doing medicolegal examination, the doctors on seeing cut on the bone with naked eye declare the injury as grievous, without X-ray examination for ascertaining the extent of the cut. In the eyes of the doctor cut means fracture, but this cut does not find a place under Seventh Clause of Section 320 IPC describing the grievous hurt. So various courts have disagreed with the doctor and declared such an injury simple in nature.

Key Words: Bone, cut, simple, grievous, dangerous, opinion.

Introduction:

The grievous injury as per Clause Seventhly of Section 320 IPC reads a "fracture or dislocation of a bone or tooth." A structural break in the normal continuity of a bone is by definition a fracture. Cut as per the dictionary can only mean 'to penetrate, separate or lacerate with a sharp instrument.' Cut is not sufficient to convey that a fracture has been suffered. This leads to inadequacy of specific evidence on the question whether the injured had suffered a fracture or not. [6]

Case History:

In a case [1] the accused dealt a kirpan blow, which landed on the left shoulder of victim. The injured was removed to the Civil Hospital for treatment where doctor examined him and found the injury on his person, which was described as:

"Incised wound 5 cm x ¾ cm x underlying bone was cut on the one upper aspect of the left shoulder running obliquely backwards and medially. Its front end being in the clavicular line. It was 6 cm from the lateral side of the left shoulder joint and 5 cm from the neck. Fresh bleeding was present. Corresponding cut mark on the shirt was present". The injury was declared grievous in nature, caused with a sharp edged weapon. A case under sections 307 / 326 / 324 / 323 / 34 IPC was registered against the accused.

The Sessions Court found this injury to be grievous in nature on the opinion of the doctor that it had endangered the life of the injured. Therefore the trial court found the accused guilty of the offence punishable u/s 326 IPC. The accused was acquitted of the charge u/s 307 IPC. He was awarded to four years rigorous imprisonment and fine of Rs.1000.

Feeling aggrieved against the above order of conviction and sentence, the accused came up in appeal in the High Court. The High Court observed that:

1. On a bare perusal of the injury, it left no doubt that the doctor had failed to mention the extent

of the cut to the bone of the left shoulder, what to say as to stating as to which portion of the bone was cut.

2. The injury was not subjected to X-ray examination for ascertaining the extent of the cut to the bone under this injury. Under these circumstances it cannot be said by any stretch of imagination that the bone was fractured or dislocated as provided under the clause seventhly to Section 320 IPC.
3. The Trial Court had found this injury to be grievous in nature that it had endangered the life of the injured. In this regard it is noteworthy that injury was with sharp edged weapon on a non-vital part of the body like shoulder without extensive damage to the underlying bone, cannot be said by any stretch of imagination having endangered the life of the injured.
4. Under these circumstances the findings of the trial court regarding the injury being grievous in nature is not sustainable. On the other hand, the accused is guilty of the offence punishable under section 324 IPC.

Cases Referred:

The above-referred view is also supported from the findings of the Apex Court [2]. In that case the conviction of the accused for the offence under 326 IPC was set aside as the doctor did not find any fracture of serious nature. In another case [3] the court had taken similar view by holding the appellants guilty of an offence under 324/34 IPC, as the doctor had not given the extent of the cut regarding the injuries. In a case [4] Court had taken a similar view as the doctor had not given any reason for declaring the injury as grievous. In a case [5] an injury was described as "an incised wound 8cm x 3cm with cut on the underlying radius bone measuring 3cm x 1cm on posterior lateral aspect of the right forearm just above the right wrist joint. The wound was profusely bleeding." So the injury was not considered as grievous under the clause

seventhly to Section 320 IPC as there was no fracture or dislocation of the bone in this case. The doctor had declared the injury grievous only on the basis of clinical examinations. The High Court set aside the findings recorded by the learned Trial Court and Lower Appellate Court that the injury was grievous. The court also observed that before declaring the injury as grievous, it must be seen, whether the cut in the bone, as per the medical report, is superficial or it dislocates the bone or there is a fracture. In a case [6] when the expert used the expression "maxilla cut", the court was of the opinion that it had to be understood reasonably. The expert did not say that there was a "cut on the maxilla" instead what was specifically stated was that the "maxilla was cut." The court expressed anguish against the manner in which the expert had tendered the evidence. If the medical expert is not experienced and does not tender the evidence on that aspect voluntarily, the prosecutor must lead evidence on that specific aspect. Even if an inexperienced prosecutor omits to lead to relevant evidence the court must seek clarification to elicit relevant evidence. In another case [7] an identical question arose for the consideration of the division bench of the Punjab & Haryana High Court. In that case injury was caused by gandasi cutting the bones; but no X-ray was done to prove the nature of the injury. In the MLR it was mentioned that the underlying bone was cut along the direction of the wound. The injury was declared grievous without x-ray examination. The division bench held that the opinion declaring the injury grievous based on mere visual observation fell through and was ignored by the learned trial court. In a case [8] the injuries were declared grievous on the basis of probing the same with a finger only and no x-ray examination was done to ascertain the depth of the bone cut. In these circumstances it was held that the doctor himself could not deny that the depth of the cut could not be given in examination by a naked eye especially when a surer opinion could be obtained after getting the injury x-rayed. It was held that the opinion of the doctor based on casual observations cannot be accepted and the injury could not be termed as grievous; when opinion was on the basis of visual examination only and no x-ray examination had been performed. Similar decisions have been held in two other cases [9, 10].

Conclusion:

A medical witness called in as an expert to assist the court is not a witness of fact and the evidence given by the doctor is really of an advisory character given on the basis of the symptoms found on examination. The expert witness is expected to put before the court all materials inclusive of the data which

induced him to come to the conclusion and enlighten the court on the technical aspects of the case by explaining the terms of science so that the court although not expert may form its own judgment on those materials after giving due regard to the experts opinion because once experts opinion is accepted, it is not the opinion of the doctor but of the court. Therefore as per various court judgments a cut on the bone is Simple in nature and not grievous as it does not fall under the seventh clause of section 320 IPC. So the doctors should avoid declaring such an injury grievous without X-ray examination, however if interested then they should write 'underneath bone fractured' and not 'cut on the bone.'

References :

1. Raj Singh v. State of Punjab, 1992, Suppl 15 CCR: 519.
2. Kailash Prasad Kanodia v. Sate of Bihar, AIR 1980, SC: 106.
3. Dula Singh v. State of Punjab, 1986, RCR: 72.
4. Teja Singh v. State of Punjab, 1986, RCR: 293.
5. Lakhbir Singh v. State of Punjab, 2004, RCR: 829.
6. Sreenivasan v. State of Kerala, (KER) 2006(3) AICLR: 408.
7. State of Punjab v. Manga Singh , (P&H) 1992, (2) RCR: 144.
8. Jassa Singh v. Sate of Punjab, (P&H) 1983, (1) RCR: 406.
9. Baldev Singh v. State of Punjab, (P&H) 1996, (1) RCR: 790.
10. Kashmir Singh v. Sardul Singh (P&H) 2003 (2) RCR 658.

Poisoning Mortality in Chandigarh: An Overview

*Dr. D. Harish, M.B.B.S., M.D., *Dr. B. R. Sharma, M.B.B.S., M.D., **Dr. K. H. Chavali, M.B.B.S., M.D., ***Dr. Anup Sharma, M.B.B.S., M.D.,

*Reader,

**Senior Lecturer,

***Junior Resident,

Dept. of Forensic Medicine and Toxicology, Govt. Medical College & Hospital, Chandigarh - 160030 India

Correspondence: Dr. B. R. Sharma, # 1156 – B, Sector – 32 B, Chandigarh – 160030. India

E-mail: drbrsharma@yahoo.com

Abstract

A 10 years' autopsy study (1996-2005) of deaths due to poisoning was carried out in the department of Forensic Medicine & Toxicology, GMCH Chandigarh. The objective of the study was to ascertain the various aspects of deaths due to poisoning and to find remedial measures to decrease the incidence of poisoning cases. The incidence of deaths due to poisoning was found to be persistently increasing. Maximum number of cases (49%) was observed in adolescents and young adults (age group: 16-25 years). Male-female ratio was 1.9: 1. Rural-urban ratio was 1.5:1. Among the male victims, married outnumbered unmarried in the rural population, while in the urban population, reverse was observed. Among the females, married outnumbered unmarried in both rural and urban population. Aluminium phosphide (ALP) (50%) was found to be the "Poison of choice" for suicides and suicide was the most common (94%) mode of poisoning. Based on the conclusions of the study various suggestions have been put forward to decrease the incidence of poisoning.

Key Words: Aluminium Phosphide, Death, Rural, Urban.

Introduction:

A poison is any substance, which when administered to the body through any route, produces ill health, disease or death. "Any poisonous substance", as per Sec. 284 of the Indian Penal Code, is that substance, which, if taken, will endanger human life, or will be likely to cause hurt or injury to any person. Law takes into cognizance mainly the intention of the person (mens rea) administering the poisonous substance. If the intention is to treat the person, it is not a crime, but if the intention is to cause hurt, disease or death of the person, it is a crime. In India, we have ample legislation in our statute books dealing with the poisons/ poisonous substances (Sections 273-78, 284, 324, 326 & 328 of Indian Penal Code deal with the offences relating to drugs and poisons.) However, the menace still is there to stay.

Acute poisoning is a medical emergency, which poses a major health problem all over the world. Its type, associated morbidity and mortality varies from place to place and changes over a period of time. The incidence of poisoning is rising in India. More than 50,000 people die of poisoning every year¹. Easy availability of numerous poisonous substances due to rapid development in science & technology, vast growth in industrial & agricultural set up has tremendously increased the incidence of poisoning cases. A number of chemical substances, which were developed to save the agricultural products from rodents and pests so as to protect the human

being from starvation, are in fact themselves becoming man eaters².

Poisoning in pediatric age group usually occurs due to accidental ingestion of commercial & household poisonous products, but in adolescents and adults intentional self-poisoning is more common³. Knowledge of general pattern of poisoning in a particular region will help in early diagnosis and treatment of such cases, thus leading to a decrease in mortality and morbidity. In view of the foregoing observation a study was conducted with the objectives to ascertain and analyze the various aspects of poisoning and to find the remedial measures to decrease the incidence of poisoning.

Materials and methodology:

This retrospective study was conducted in the department of Forensic Medicine & Toxicology, Govt. Medical College Hospital, Chandigarh; during the period from January 1996 to December 2005. The reports of 712 cases of deaths due to poisoning brought to the mortuary for medico-legal autopsy were the subjects of the study. The age and sex of the deceased, their marital and socio-economic status, type of poison consumed, mode of death, etc were ascertained from the autopsy records and the hospital records.

Observations:

During the period under study, a total of 3178 medico legal autopsies were conducted by the department, of which 712 (24%) were alleged poisoning deaths. The percentage of the poisoning

deaths was observed to be steady at 19% during the 1st half of the study period, i.e., 1996 - 2000. Thereafter it rose sharply to 27% in 2001, 31% in 2002, to again decrease to 21% in 2003. It then rose to 25% in 2004 and 24% in 2005. **(Table 1)**

Young adults, of the age group 21-25 years, accounted for the maximum number of victims, 210 (30%), followed by the age group 26-20 years, 135 (19%). Taken together, the 16-25 year group accounted for 49% of the victims poisoning. This was followed by the 26-30 yrs age group, 117 (16%) cases. Extremes of age, the less than 10 years and the more than 60 yrs groups, comprised 0.4% and 1% victims, respectively. **(Table 2)**

Aluminium Phosphide was the most common poison consumed, being responsible for 359 (50%) deaths, followed by the insecticides, 169 (24%) deaths. Cyanides and nitrobenzene compounds were involved in the least number of cases, 02 (0.3%). In 53 (7%) cases, the report of the Chemical Examiner/Toxicologist was pending at the time of conclusion of the study and in 70 (10%) cases; no definite opinion regarding the cause of the death could be given. **(Table 3)**

Of the male victims, 291 (63%) were from a rural background, of which 172 (59%) were married. In comparison, only 79 (46%) of the urban males were married. As regards the female victims, a total of 135 (54%) were from the rural background; however, 98 (73%) rural and 84 (74%) urban were married at the time of consuming the poison. **(Table 4)**

Suicide was the most common mode of poisoning death, 669 (94%) cases, followed by accident, 38 (5%) cases. Homicide accounted for 5(1%) deaths.

(Table 5)

Discussion:

The incidence of poisoning, intentional or accidental is on the rise despite the best efforts of legislative, punitive, social and educational machinery to combat this menace. The popular notion that poisoning causes minimal suffering prior to death and that it is less grave a sin than causing death by violence, has only helped in rapid rise of incidence of poisoning cases⁴.

An increase in the percentage of deaths due to poisoning from 19% in 1996 to 24% in 2005 & the maximum incidence in the age group of 16-25 years noticed in our study is in conformity with the reports of other workers.⁵⁻⁹ The younger age group is most susceptible to the lure of riches – the modern society's yardstick of success. Frustrations caused by the inability to cope with the highly competitive, indifferent & materialistic society have resulted in increased poisoning in younger generation. Some of the other important reasons are failure in exams or love affair, scolding / humiliation by peers and

parents, inability to live up to the expectations of others etc.

Sixty percent victims who, with lesser resources than their urban counter parts, find it more difficult to make their both ends meet, were from rural background. This, compounded by the usually large family size, high illiteracy, ignorance and superstitions, complete dependence on the fate of their crop- both in the field and in the market etc are responsible for this trend.

An early marriage in the rural community, along with its added familial responsibilities, social customs, limited resources etc may be the factors responsible for married males (60%) outnumbering unmarried males in the rural population. A continuous hunt for a suitable employment, it being a mandatory prerequisite for marriage, the associated disillusionment and frustrations etc leading to depression may be responsible for the reverse trend in urban population i.e. unmarried males (55%) outnumbering married.

In case of females the percentage of married victims was almost the same in rural (73%) and urban (74%) in our study. This indicates that woes of the married female have no rural or urban barriers. Dowry, cruelty by the in-laws, family quarrels, mal-adjustments in married life, low level of education, infidelity, unemployment, dependence of the women on husband / in-laws etc are some of the important factors contributing towards the preponderance of married women in both the rural and urban communities.

Maximum number of deaths was due to ingestion of aluminium phosphide (50%). This compound has emerged as "Poison of choice" for suicides. The awareness in the general public of the almost painless death, unavailability of any antidote, the certainty of death by ingestion of just a single tablet has led to maximum deaths due to ALP poisoning. Our finding is in conformity with those of other workers.⁹⁻¹¹

Suicide was the most common mode of poisoning (94%). This endorses our views that the inability to cope up with the demands put forth by the standards set by the materialistic modern society is the major culprit. Different workers in this field have also found similar results in their studies.¹⁰⁻¹²

Conclusion:

To summarize, the following conclusions can be drawn:

Poisoning deaths have doubled from 19% in 1996 to 24% in 2005.

The age group most commonly affected was 16-25 years (49%).

The male-female ratio was 1.9:1.

The rural-urban ratio was 1.5:1.

Among the male victims, married outnumbered the unmarried in the rural community, while the reverse was observed in the urban.

Among the females, married outnumbered the unmarried in both rural and urban communities.

Aluminium phosphide has acquired the dubious distinction of being the "Poison of choice" for the suicides.

Suicide was the most common mode of poisoning (94%).

Suggestions:

All the hospitals should have a separate toxicology unit under the supervision of Forensic- Medicine & Toxicology specialists, dealing exclusively with the poison cases.

Poison Information/Control Centers on the pattern of AIIMS New Delhi and MGIMS Sevagram should be created throughout the country. These will be of immense benefit to the common man.

The storage and sale of insecticides / pesticides particularly Aluminium phosphide, organo-phosphates, organo-chlorates etc should be controlled through strict regulations by the concerned authorities. 'Over the counter' sale of all these compounds should be banned.

The Ministry of Agriculture, Govt. of India, constituted a "Working group for laying down safety measures in the use of Aluminium phosphide," in 1991. Its recommendations were: 1) Some emetics should be incorporated in the formulation of the tablets. 2) Each tablet should be dispensed in unbreakable, hard, perforated plastic pack.¹² However, these recommendations will be of help only if strictly followed.

Help lines should be set up with the active cooperation of Governmental and Non-Governmental Organizations (NGOs) so that help in the form of counseling etc can be provided to prevent the suicidal poisoning among the younger generation.

Promoting education among the general public to annul the myths & superstitions. Educating the society about the equal status of a girl child

and condemnation of dowry system can be of great value.

Table 1 : Year wise distribution of poisoning cases

| Year | Total Autopsies | | Poisoning Cases | |
|--------------|-----------------|------------|-----------------|--------------|
| | No. | % | No. | % |
| 1996 | 226 | 07.11 | 42 | 18.59 |
| 1997 | 264 | 08.31 | 49 | 18.57 |
| 1998 | 287 | 09.03 | 53 | 18.47 |
| 1999 | 303 | 09.53 | 58 | 19.14 |
| 2000 | 352 | 11.08 | 67 | 19.03 |
| 2001 | 372 | 11.71 | 100 | 26.88 |
| 2002 | 288 | 09.06 | 89 | 30.90 |
| 2003 | 338 | 10.64 | 71 | 21.01 |
| 2004 | 369 | 11.61 | 92 | 24.93 |
| 2005 | 379 | 11.93 | 91 | 24.01 |
| Total | 3178 | 100 | 712 | 23.98 |

Table 3 : Type of Poisoning

| Poison | Number of Cases | |
|-----------------------|-----------------|-------|
| | No. (n=712) | % |
| Aluminium Phosphide | 359 | 50.42 |
| Insecticides | 169 | 23.74 |
| Alcohol | 45 | 06.32 |
| Corrosives/ Irritants | 09 | 01.26 |
| Diazepam | 03 | 00.42 |
| Cyanides | 02 | 00.28 |
| Nitrobenzene | 02 | 00.28 |
| Report pending | 53 | 07.44 |
| No definite opinion | 70 | 09.83 |

Table 5 : Mode of Death

| | Suicide | Accident | Homicide | Total |
|------------|---------|----------|----------|------------|
| No. | 669 | 38 | 05 | 712 |
| % | 93.96 | 05.33 | 00.71 | 100 |

Table 2 : Age and Gender distribution of cases

| Age Group (In years) | Males | | Females | | Total | |
|----------------------|------------|-----------|------------|-----------|------------|-------|
| | No. (n=46) | % (65.17) | No. (n=24) | % (34.83) | No. (n=71) | % |
| 0-10 | 03 | 100 | 00 | 00 | 03 | 00.42 |
| 11-15 | 11 | 78.57 | 03 | 21.43 | 14 | 01.97 |
| 16-20 | 74 | 54.82 | 61 | 45.18 | 135 | 18.96 |

| Age Group (In years) | Males | | Females | | Total | |
|----------------------|------------|-----------|------------|-----------|------------|-------|
| | No. (n=46) | % (65.17) | No. (n=24) | % (34.83) | No. (n=71) | % |
| 21-25 | 130 | 61.91 | 80 | 38.09 | 210 | 29.49 |
| 26-30 | 82 | 70.09 | 35 | 29.91 | 117 | 16.43 |
| 31-40 | 75 | 68.81 | 34 | 31.19 | 109 | 15.31 |
| 41-50 | 54 | 75.00 | 18 | 25.00 | 72 | 10.11 |
| 51-60 | 32 | 71.11 | 13 | 28.89 | 45 | 06.32 |
| > 60 | 03 | 42.86 | 04 | 57.14 | 07 | 00.98 |

Table 4 : Rural and Urban distribution of cases

| Sex | Rural | | | Urban | | | Total |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | Married | Unmarried | Total | Married | Unmarried | Total | |
| Males | | | | | | | |
| No. | 172 | 119 | 291 | 79 | 94 | 173 | 464 |
| % | 59.11 | 40.89 | 62.72 | 45.67 | 54.53 | 37.28 | 65.17 |
| Females | | | | | | | |
| No. | 98 | 37 | 135 | 84 | 29 | 113 | 248 |
| % | 72.59 | 27.41 | 54.44 | 74.34 | 25.66 | 44.84 | 34.83 |
| Total | | | | | | | |
| No. | 270 | 156 | 426 | 163 | 123 | 286 | 712 |
| % | 63.38 | 36.62 | 59.83 | 56.99 | 43.01 | 40.17 | 100 |

References :

1. Aggarwal P, Handa R, Walia JP. Common poisoning in India. JFMT 1998; 15 (1): 73
2. Sharma BR, Harish D, Singh S, Vij K. Poisoning scenario in Northern India-Challenges and Sugeestions, JMGIMS 2002; 7 (1): 37-42
3. Sinha US, Kapoor AK, Agnihotri AK, Srivastava PC. A profile of Poisoning cases admitted in SRN Hospital, Allahabad with special reference to Aluminium phosphide poisoning. JFMT 1999; 16 (1): 40 - 43.
4. Sharma BR, Harish D, Sharma V, Vij K. The epidemiology of Poisoning: An Indian view point. JFMT 2002; 19 (2): 5-11.
5. Bhullar, D.S., Oberoi S.S., Aggarwal O.P., Tuli. H. Profile of Unnatural deaths (between 18-30 yrs. of age) in Govt. Medical College/Rajendra Hospital, Patiala (India) JFMT 1996; 13 (3&4): 5-8.
6. Meena, H.S., Murty O.P., Bose S., Bhatia S., Dogra T.D. Aluminium Phosphide Poisoning JFMT 1994; 11 (3&4): 19-30.
7. Singh D. Changing trends in Acute poisoning, Amer. JFMP 1999; 20 (2): 203-210.
8. Sharma B. R. Trends of Poisons/Drugs abused in Jammu. JFMT 1996; 13 (2): 7-12.
9. Bajaj R. and Wasir H.S. Epidemic Aluminium Phosphide poisoning in Northern India. Lancet 1988; 11: 820.
10. Sagar M.S, Sharma R.K, Dogra T.D. Analysis of Changing patterns of Unnatural Fatalities in South Delhi (comparative study of 1977-80 & 1988-91) JFMT 1993; 10 (1 & 2): 21-25.
11. Lall SB, Peshin SS, Seth SS Acute poisoning: a ten years retrospective hospital based study; Ann Natl Acad Med Sci (India) 1994; 30 (1): 35-44.
12. Singh D., Dewan I, Vashista R.K., Tyagi S.: Aluminium Phosphide Poisoning – Autopsy and Histopathological Findings. JFMT 1995; 12 (1 & 2): 16-20.

Legal and Ethical Aspects of Casualty Services in India

Dr. Mukesh Yadav
HOD, Associate Professor
Deptt. of Forensic Medicine
Rural Institute of Medical Sciences & Research Institute, Saifai, Etawah
Email: [drmukeshy14 @radiffmail.com](mailto:drmukeshy14@radiffmail.com)
Mobile No. 09411480753

Abstract

Dealing with a medicolegal case has always been a daunting task for an ordinary doctor. Dragging unnecessarily into legal battle, harassment by the law enforcement agencies, wasting precious time into the court of law, whenever called upon as a witness are common apprehension of a doctor. These fears always prompted medical fraternity to keep away from accident cases or any other case of medicolegal nature who is in real need of medical care.

Feeling aggrieved by the indifferent and callous attitude on the part of the medical fraternity at the various State-run hospitals as well as private hospitals, in getting treatment for the serious injuries sustained by victims of the road traffic accidents, lead to filing of many cases in the court of law to protect their 'right to life' guaranteed by the Indian Constitution.

This paper deals with a case report of a victim which later on turned to be a medicolegal case after about one month of incident. Paper discusses all the issues involved from ethical, legal and in view of landmark Judgements of Apex Court on the issue of accident victims. Paper also deals in brief about the Constitutional obligations of the Government for preserving one of the most important Fundamental Right, 'the right to life' of its citizens.

Key words: Accident, medicolegal, emergency, victim, court.

Introduction:

The number of deaths occurring on account of road side accidents is on the increase due to lack of timely medical attention. The reason is on account of the prevailing police rules and Criminal Procedure Code, which necessitate the fulfillment of several legal formalities before a victim can be rendered medical aid. The rationale behind this complicated procedure is to keep all evidence intact. However, time given to the fulfillment of these legal technicalities sometimes takes away the life of a person seriously injured.

Members of public escorting the injured to the nearest hospital are reluctant to disclose their name or identity as they are detained for eliciting information and may be required to be called for evidence to Courts in future. Similarly, the private practicing doctors are harassed by the police and are, therefore, reluctant to accept the roadside casualty. It is submitted that human life is more valuable and must be preserved at all costs and that every member of the medical profession is under an obligation to provide such aid as may be necessary to help him survive from near-fatal accidents.

Every injured citizen brought for medical treatment should instantaneously be given medical aid to preserve life and thereafter, the procedural criminal law should be allowed to operate in order to avoid negligent death. There is no legal impediment for a medical professional when he called upon or

requested to attend to an injured person needing his medical assistance immediately. **The effort to save the person should be the top priority not only of the medical professional but also even of the police or any other citizen who happens to be connected.**

Preservation of human life is of paramount importance. That is so on account of the fact that once life is lost, the status quo ante cannot be restored as resurrection is beyond the capacity of man. The patient whether he be an innocent person or be a criminal liable to punishment under the laws of the society, it is the obligation of those who are in-charge or the health of the community of preserve life so that the innocent may be protected and the guilty may be punished. Social laws do not contemplate death be negligence to tantamount to legal punishment.

A doctor at the Government hospital positioned to meet the State obligation is, therefore, duty bound to extend medical assistance for preserving life. Every doctor whether at a Government hospital or otherwise has the professional obligation to extend his services with due expertise for protecting life. No law or State action can intervene to avoid / delay the discharge of the paramount obligation cast upon member of the medical profession, **the obligation being total, absolute and paramount. Laws of procedure whether in statutes of otherwise which would interfere with the discharge of this**

obligation cannot be sustained and must, therefore, give way.

Every doctor should be reminded of his total obligation and be assured of the position that he does not contravene the law of the land by preceding to treat the injured victim on his appearance before him either by himself or being carried by other.

The standard of care in emergency cases implies three obligations, viz., (i) screening the patient; (ii) stabilizing the patient's condition; and (iii) transfer or discharge of the patient for better treatment. The emergency health services in our country must be provided keeping in view these three requirements.

Scenario in Western Countries:

There it was found that private hospitals were turning away uninsured, indigent persons in need of urgent medical care and these patients were often transferred to or dumped on public hospitals and the resulting delay or denial of treatment had sometimes disastrous consequences. To meet this situation the U.S. Congress has enacted the **Consolidated Omnibus Budget Reconciliation Act of 1986 (for short 'COBRA')** to prevent this practice of dumping of patients by Private Hospitals. By the said Act all hospitals that receive Medicare benefits and maintain emergency rooms are required to perform two tasks before they may transfer or discharge any individual:

The hospital must perform a medical screening examination of all prospective patients, regardless of their ability to pay;

If the hospital determines that a patient suffers from an emergency condition, the law requires the hospital to stabilize that condition and the hospital cannot transfer or discharge, is appropriate as defined by the statute.

Indian Scenario in dealing with emergency cases:

Some apprehensions are expressed by the medical fraternity because of some **misunderstanding about the law of procedure** and the **police regulations** and the **priorities in such situations**. It should be clear now that there is no legal impediment for a medical professional when he is called upon or requested to attend to an injured person needing his medical assistance immediately. There is also no doubt that the effort to save the person should be the top priority not of the medical professional but even of the police or any other citizen who happens to notice such an incident or a situation.

But on behalf of the medical profession there is one more apprehension which sometimes prevents a medical professional in spite of his desire to help the person, as he apprehends that he will be a

witness and may have to face the police interrogation which sometimes may need going to the police station repeatedly and waiting and also to be a witness in a court of law where also he apprehends that he may have to go on number of days and may have to face sometimes long unnecessary cross-examination which, sometimes may even be humiliating for a man in the medical profession and **in our opinion it is this apprehension which prevents a medical profession who is not entrusted with the duty of handling medicolegal cases** to do the needful, he always tries to avoid and even if approached, directs the person concerned to go to a State hospital and particularly to the person who is in-charge of the medicolegal cases.

Medical profession is a very respectable profession. Doctors are looked upon by common man as the only hope when a person is hanging between life and death, but they avoid their duty to help a person when he is facing death when they come to know that it is a medicolegal case. (3) (Para 15)

Apex Courts' Assurance:

"We, therefore, have no hesitation in **assuring the persons in the medical profession** that these apprehensions, even if have some foundation, **should not prevent them from discharging their duty as a medical professional to save a human life** and to do all that is necessary but at the same time we hope and trust that with this expectation from the **members of the medical profession, the police, the members of the legal profession, our law courts and everyone concerned** will also **keep in mind that a man in the medical profession should not be unnecessarily harassed for purposes of interrogation or for any other formalities and should not be dragged during investigations at the police station** and it should be avoided as far as possible.

We also hope and trust that our law courts will **not summon on a medical professional to give evidence unless the evidence is necessary** and even if he is summoned, attempt should be made to see that **the men in this profession are not made to wait and wait time unnecessarily** and it is known that **our law courts always have respect for the men in the medical profession** and they are called to give evidence when necessary and attempts are made so that **they may not have to wait for long**". (3) (Para 16)

Call as witness only when necessary:

"We have no hesitation in saying that **it is expected of the members of the legal profession** which is the other honorable profession **to honour the persons in the medical profession** and see that they are **not called to give evidence so long as it**

is not necessary. It is also expected that **where the facts are so clear it is expected that unnecessary harassment of the members of the medical profession either by way of request for adjournments or by cross-examination should be avoided** so that the apprehension that the men in the medical profession have which **prevents them from discharging their duty to a suffering person who needs their assistance utmost, is removed and a citizen needing the assistance of a man in the medical profession receives it**". (3) (Para 16)
Right to Compensation for basic Human Right violation:

The Constitution envisages the establishment of a Welfare State at the Federal level as well as at the State level. In a Welfare State the primary duty of the Government is to secure the welfare of the people. Providing adequate medical facilities for the people is essential part of the obligations undertaken by the Government in a Welfare State. The Government discharges this obligation by running hospitals and health centers which provide medical care to the person seeking to avail of those facilities.

Article 21 imposes an obligation on the State to safeguard **'the right to life'** of every person. Preservation of human life is thus, of paramount importance. The Government hospitals run by the State and the Medical Officers employed therein are duty-bound to extend medical assistance for preserving human life.

Failure on the part of a Government hospital to provide timely medical treatment to a person in need of such treatment results in violation of his 'right to life' guaranteed under Article 21. In respect of deprivation of the constitutional rights guaranteed under Part III of the Constitution the person is well settled that **adequate compensation** can be awarded by the Court for such violation by way of redress in proceedings under **Article 32** and **226** of the Constitution.

How to Handle a Medicolegal Case?

The Committee under the Chairmanship of the Director-General of Health Services (27-04-1985) had taken the following decisions:

"Whenever any medicolegal case attends the hospital, the medical officer on duty should inform the duty Constable, name, age, sex, of the patient and place and time of occurrence of the accident, and should start the required treatment of the patient. It will be the duty of the Constable on duty to inform the concerned police station or higher police functionaries for their action. Full medical report should be prepared and given to the police, as soon as examination and treatment of the patient is over. The treatment of the patient would not wait for

the arrival of the police for completing legal formalities.

Zonalisation has been worked out for the hospitals to deal with medicolegal cases will only apply to such cases brought by the police. The medicolegal cases coming to hospital of their own (even if the incident has occurred in the area of other hospital) will not be denied the treatment by the hospital where the case reports, nor the case will be referred to other hospital because the incident has occurred in the area which belongs to the zone of any other hospital. The same police formalities as given in the Para-I, above will be followed in these cases.

All Government Hospitals, Medical Institutes should be asked to provide the immediate medical aid to all the cases irrespective of fact whether they are medicolegal cases or otherwise. The practice of certain Government Institutions to refuse even the primary medical aid to the patient and referring to the other hospitals simply because they are medicolegal case is not desirable. However, after providing the primary medical aid to the patient, patient can be referred to hospital if the expertise facilities required for the treatment are not available in that institution". (3) (Para 3)

Patient as 'Consumer' and Medical Services as 'Service':

In another case (4), it has been held that the expression 'consumer' as defined in section 2(i)(d) (ii) of the COPRA, 1986 includes persons getting or eligible for medical treatment in government hospitals and that the expression 'services' as defined in Section 2 (i) (o) of the Act includes services provided in the government hospitals also. The said question has been considered in the decision of this Court in another case (1).

Need for through investigation in each case:

There is need for holding a through investigation in each case reported to the authorities or by the media. Investigation may be done on the lines of already decide case by the Apex Court to get the positive feed back and necessary remedial measures needed periodically to solve the problem or prevent the recurrence in future.

The State Government appointed an **Enquiry Committee** headed by **Shri Justice Lilamoy Ghose, a retired Judge of the Calcutta High Court**. The terms and reference of the said Committee were:

- A. **Enquiry into the circumstances** under which the patient / victim of accident was denied admission to the State Government hospitals.

- B. **Fixing responsibilities for dereliction of duties** if any, on the part of any government official in this respect.
- C. **Recommendations on actions against the government officials** who have been found wanting in the discharge of their official duties in this respect.
- D. **Recommendations on actions** that should be taken by the State Government to rule out the recurrence of such incident in future and to ensure immediate medical attention and treatment to patients in real need.

Remedial measures:

The Committee has suggested some remedial measures to rule out recurrence of such incidents in future and to ensure immediate medical attention and treatment to patients in real need.

- (i) The Primary Health Centres should attend the patient and give proper medical aid, if equipped.
- (ii) At the hospitals the Emergency Medical Officer, in consultation with the Specialist concerned on duty in the Emergency Department, should admit a patient whose condition is moribund / serious. If necessary the patient concerned may be kept on the floor or on the trolley-beds and then loan can be taken from the cold ward. Subsequent necessary adjustment should be made by the hospital authorities by way of transfer / discharge.
- (iii) A Central Bed Bureau should be set up which should be equipped with wireless or other communication facilities to find out where a particular emergency patient can be accommodated when a particular hospital finds itself absolutely helpless to admit a patient because of physical limitations. In such cases the hospital concerned should contact immediately the Central Bed Bureau which will communicate with the other hospitals and decide in which hospital an emergency moribund / serious patient is to be admitted.
- (iv) Some casualty hospitals or **traumatology unit** should be set up at some points on regional basis.
- (v) The intermediate group of hospitals viz., the district, the subdivision and the State General Hospitals should be upgraded so that a patient in a serious condition may get treatment locally.

The recommendations of the Committee have been accepted by the State Government and **memorandum dated 22-08-1995** has been issued wherein the following directions have been given for

dealing with patients approaching **Health Centres /OPD / Emergency Department of Hospitals:**

- (i) Proper medical aid within the scope of the equipments and facilities available at Health Centres and hospitals should be preserved in office. The guiding principle should be to see that no emergency patient is denied medical care. All possibilities should be explored to accommodate emergency patients in serious condition.
- (ii) Emergency Medical Officer will get in touch with Medical Superintendent / Deputy Medical Superintendent / Specialist Medical Officer for taking beds on loan from cold wards for accommodating such patients as extra-temporary measures.
- (iii) Medical Superintendent of hospitals will issue regulatory guidelines for admitting such patients on internal adjustments amongst various wards and different kinds of beds including cold beds and will hold regular weekly meetings for monitoring and reviewing the situation. A model of such guidelines is enclosed with this memorandum which may be suitably amended before issue according to local arrangements prevailing in various establishments.
- (iv) If feasible, such patients should be accommodated in trolley-beds and, even, on the floor when it is absolutely necessary during the exercise towards internal adjustments as referred to at (iii) above.

Maintenance of Medical Records:

Having regard to the drawbacks in the system of **maintenance of admission registers** of patients in the hospitals, it has been directed that the Medical Superintendent and Emergency Medical Officers of the hospitals should take the following actions to regularize the system with a view to avoiding confusion in respect of Admission / Emergency Attendance Registers:

- (v) Clear recording of the name, age, sex, address, disease of the patient by the attending Medical Officers;
- (vi) Clear recording of date and time of attendance / examination / admission of the patient;
- (vii) Clear indication whether and where the patient has been admitted, transferred, referred;
- (viii) Safe custody of the registers;
- (ix) Periodical inspection of the arrangement by the Medical Superintendent;
- (x) Fixing of responsibility of maintenance and safe custody of the registers.

Fixing Identity:

With regard to identifying the individual Medical Officers attending to the individual patient approaching OPD / Emergency Department of a hospital on the basis of consulting the hospital records, it has been directed that the following procedure should be followed in future:

A copy of the duty roster of Medical Officers should be preserved in the office of the MS incorporating the modifications done for unavoidable circumstances;

Each Department shall maintain a register for recording the signature of attending Medical Officers denoting their arrival and departure time;

The attending Medical Officer shall write his full name clearly and put his signature in the treatment document;

The MS of the hospital shall keep all such records in safe custody;

A copy of the Bed Head Ticket issued to the patient should be maintained or the relevant data in this regard should be noted in an appropriate record for future guidance.

Feedback is important:

It is appreciated that Hospital Superintendent / Medical Officer-in-charge may have difficulty in implementing these guidelines due to various constraints at the ground level and, as such, feedback is vital to enable government to refine and modify the order as will ensure a valid working plan to regulate admission on a just basis. **Detailed comments** are, therefore, **requested with constructive suggestions.**

Further suggestions:

1. In order to have proper and adequate emergency health services and to create an infrastructure for that purpose it is necessary to bear in mind the high risk occasions such as festivals and high risk seasons when there is a greater need for such services.
2. The medical facilities available at the Primary Health Centres should be upgraded and the hospitals at the district level should be suitably provided to deal with serious cases and that the number of beds in the hospitals should be increased to meet the growing needs of the population.
3. A Centralized Ambulance Service may be created for all the hospitals and that the ambulance services may be created for all the facilities necessary for giving primary medical aid and treatment to the patient.
4. The Emergency Units at the hospital should be fully equipped to manage all the emergency

cases and the Medical Officers should be available there round the clock.

5. The denial of treatment to a patient should be specifically made a cognizable offence and further it should be made actionable as tort.

Ethical Guidelines:**Duties of Physicians to their Patients:**

Though a physician is not bound to treat each and every one asking his services except emergencies for the sake of humanity and the noble traditions of the profession, he should not only be ever ready to respond to the calls of the sick and injured, but should be mindful of the high character of his mission and the responsibility he incurs in the discharge of his professional duties. In his ministrations, he should never forget that the health and lives of those entrusted to his care depend on his skill and attention. A physician should endeavour to add to the comfort of the sick by making his visits at the hour indicated to the patients.

Duties for referring patient to another physician:

A physician advising a patient to seek service of another physician is acceptable; however, in case of emergency a physician must treat the patient. No physician shall arbitrarily refuse treatment to a patient. However, for a good reason, when a patient is suffering from ailment which is not within the range of experience of the treating physician, the physician may refuse treatment and refer the patient to another physician. (8) **(Chapter II, Point 2.1.1)**

The patient must not be neglected:

A physician is free to choose whom he will serve. He should, however, **respond to any request for his assistance in an emergency.** Once having undertaken a case, the physician should not neglect the patient, nor should he withdraw from the case without giving adequate notice to the patient and his family. Provisionally or fully registered medical practitioner shall not willfully commit an act of negligence that may deprive his patient or patients from necessary medical care. **(8)(Chapter II, Point 2.4)**

"The MCI, therefore, expects that all medical practitioners must attend to sick and injured immediately and it is the duty of the medical practitioners to make immediate and timely medical care available to every injured person whether he is injured in accident or otherwise. It should be the duty of a doctor in each and every casualty department of the hospital to attend such person first and thereafter take care of the formalities under the Criminal Procedure Code. The life of a person is far more important than the legal formalities. A doctor should not feel himself handicapped in extending immediate help in such cases fearing that he would

be harassed by the police or dragged to Court in such case.”

Fixing Identity of the Doctor:

A physician shall write his name and designation in full along with registration particulars in his prescription particulars in his prescription letter head.

(8) (Chapter III, Point 3.7.2) ‘Note’ in this Chapter at the end specifically mentioned that “in Government hospitals where the patient-load is heavy, the name of the prescribing doctor must be written below his/her signature.

Display of Registration numbers:

Every physician shall display the registration number accorded to him by the State Medical Council / Medical Council of India in his clinic and in all his prescriptions, certificates, money receipts given to his patient. **(8) (Chapter I, Point 1.4.1)**

Maintenance and Issue of Medical Record:

Every physician shall maintain the medical records pertaining to his indoor patients for a period of three years from the date of commencement of the treatment in a standard proforma laid down by the Medical Council of India and attached as **Appendix 3. (8) (Chapter I, Point 1.3.1)**

If any request is made for medical records either by the patient / authorized attendant or legal authorities involved, the same may be duly acknowledged and document shall be issued within the period of 72 hours. **(8) (Chapter I, Point 1.3.2)**

Misconduct:

The following acts of commission or omission on the part of a physician shall constitute professional misconduct rendering him liable for disciplinary action:

If he commits any violation of these regulations.

If he does not maintain the medical records of his indoor patients for a period of three years as per regulation 1.3 and refuse to provide the same within 72 hours when the patient or his authorized representative makes a request for it as per the regulation 1.3.2.

If he does not display the registration number accorded to him by the State Medical Council / Medical Council of India in his Clinic and in all his prescriptions, certificates, money receipts, etc. issued by him or violates the provisions of regulation 1.4.2. **(8)(Chapter VII, Point 7.1 -7.3)**

Punishment and Disciplinary Action:

Every care should be taken that the code is not violated in letter and spirit. In such instances as in all others, the Medical Council of India / or State Medical Council have to decide upon the facts brought before them. **(8) (Chapter VII, Point 8.1)** Decision on complaint against delinquent physician

shall be taken within a limit of six months. **(8) (Chapter VII, Point 8.4)**

Summary and conclusions:

It is the constitutional obligation of the State to provide adequate medical services to the people to preserve human life. Whatever is necessary for this purpose has to be done. The State cannot avoid its constitutional obligation in that regard on account of financial constraints. In the matter of allocation of funds for medical services the said constitutional obligation of the State has to be kept in view. It is necessary that a time-bound plan for providing these services should be chalked out keeping in view the recommendations of the Committee as well as the requirements for ensuring availability of proper medical services in this regard as indicated by the Court and step should be taken to implement the same.

Adequate Publicity is the need of the hour:

As directed by the Apex Court to make every doctor aware of their duty towards accident victims in emergency, adequate publicity to this decision highlighting this aspect should be given by the **national media, Doordarshan and the All India Radio**. The **Registry** shall forward adequate number of copies of this judgment to every **High Court** so that without delay the respective **High Courts** can forward them to every **Sessions Judge** within their respective jurisdictions and the Sessions Judges in their turn shall give due publicity to the same within their jurisdictions. The **Medical Council of India** shall forward copies of this judgment to every **Medical College** affiliated to it. Copies of the judgment shall be forwarded to **every State Government** with a direction that wide publicity should be given about the relevant aspects so that **every practicing doctor** would soon become aware of the position. (3) (Para 9)

But unfortunately none of the above mentioned authorities did any sincere efforts in this regard. Even if it is done immediately after the pronouncement of decision it should be repeated at adequate time intervals to refresh the memory of those directed to follow the decision in public interest.

Need for Reminding Ethics:

The Code of Medical Ethics framed by the Medical Council was approved in **October 23, 1970**. This only reveals an unfortunate state of affairs where the decisions are taken at the higher level, good intentioned, and for public good, but unfortunately do not reach the common man and they remains text good to read and attractive to quote- **Justice G.L. Oza**. (3) (Para 13)

It could not be forgotten that seeing an injured human being in a miserable condition the human

instinct of every citizen moves him to rush for help and do all that can be done to save his life. It could not be disputed that in spite of development: economic, political and social still citizens are human beings and over and above more when a man in such a miserable state hanging between life and death reaches the medical practitioner either in a hospital (run or managed by the State), public authority or a private person or a medical profession doing only private practice he is always called upon to rush to help such an injured person and to do all that is within his power to save life. So far as this duty of a medical professional is concerned it's coupled with human instinct, it needs neither decision nor any code of ethics nor any rule or law. (3) (Para 14) The MCI has already revised the Code of Medical Ethics in 2002. (8)

Though, State of West-Bengal alone was a party in this case, (10) other States, were also suggested to take necessary steps in the light of the recommendations made by the Committee, the directions contained in the memorandum of the Government of West-Bengal dated 22-08-1995 and the further directions given by the Court. (10)(Para 16)

The Union of India was a party in this case and since it is the joint obligation of the Centre as well as the State to provide medical services it was expected that the Union of India would render the necessary assistance in the improvement of the medical services in the country on these lines. (10)(Para 17)

References:

1. Indian Medical Association v. V.P. Shantha (1996) 6 SCC 651
2. Consumer Education and Research Centre v. Union of India (1995) 3 SCC (L & S) 604
3. Nilabati Behera v. State of Orissa (1993) 2 SCC 746
4. Consumer Unity & Trust Society v. State of Rajasthan (1991) 1 CPR 241 (NC)
5. Parmanand Katara v. Union of India (1989) 4 SCC 286: 1989 SCC (Cri) 721
6. Rudal Sah v. State of Bihar (1983) 4 SCC 141: 1983 (Cri) 798
7. Khatri (II) v. State of Bihar (1981) 1 SCC 627: 1981 SCC (Cri) 228
8. The Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations-2002
9. Dr. R. K. Sharma, Legal Aspects of Patient Care, 'emergency Services in Hospitals: Supreme Court Guidelines', First Edn.-2000; ISBN No.; 81-7724-006-4: 82-83.
10. Paschim Banga Khet Mazdoor Samity and Others v. State of W.B. and Others, 1996 (4) SCC 37, Writ Petition (c) No. 796 of 1992 (under Article 32 of the Constitution of India) (Before S.C. Agrawal and G.T. Nanawati, JJ.)
11. Ratanlal & Dhirajlal, the Indian Penal Code, twenty Eight Edn.-1997; 321, 472.

