Original Paper

Delayed Toxicological Reports in Poisoning Deaths – Indian Scenario

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ABSTRACT

In most parts of India, in cases of medicolegal autopsy where poisoning is suspected, the final opinion as to the cause of death is generally kept reserved, pending the chemical analysis report from the Forensic Science Laboratory (FSL). This study analyzes the time consumed at various levels, right from the dispatch of the viscera after preservation, to giving the final opinion regarding the exact cause of death. It comprises a retrospective analysis conducted between January 1996 and December 2003 in the mortuary of Kasturba hospital, Manipal, India. The results indicate that the average time taken by the police to transport the viscera from the Mortuary to the FSL was 15-30 days in 59 cases (38.1%). In 74.1% of the cases, the chemical examiner had taken 1-3 months to furnish the toxicological report. In more than 50% of cases, the police had taken 1-3 months to produce the chemical examiner's report, needed for the final opinion regarding the cause of death. In all the cases, the Forensic Pathologist concerned gave the opinion as to the cause of death on the same day of the receipt of chemical examiner's report. The study indicates that by establishing Departmental Toxicological Laboratories at respective autopsy centers, such delays in furnishing the cause of death can be minimized.

Key words: Cause of death, Chemical analysis, Toxicological report, Forensic Science Laboratory

Introduction

Postmortem examination is a statutory requirement in sudden, violent, unexplained, suspicious or litigious deaths. A meticulous medicolegal autopsy should include detailed external and internal examination. The latter encompasses both gross and histopathological examination, as well as toxicological examination, if indicated. In poisoning deaths, the autopsy is not complete until the toxicological report from the Forensic Science Laboratory (FSL) is received and reviewed. Unfortunately, furnishing the final opinion as to the cause of death in suspected poisoning is often delayed as compared to other forms of unnatural deaths. The reason for this delay is invariably the tortuous route that the viscera must take to reach the FSL and the time taken for subsequent analysis.

The present study was undertaken to analyze the procedural delays involving the transit of viscera from the mortuary to the FSL, retention of the viscera for variable time periods in the laboratory while awaiting analysis, and finally dispatch of the report from the laboratory back to the Department of Forensic Medicine for the furnishing of the final opinion.

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Material and Methods

The material for the present study comprised all the fatal cases of poisoning that were autopsied between January 1996 and December 2003 in the mortuary of Kasturba Hospital, Manipal, India. The mortuary is attached to the Department of Forensic Medicine, Kasturba Medical College, Manipal, which is situated in the coastal region of Karnataka, Southern India. The study was conducted retrospectively during the above-mentioned period, in which a total of 200 cases of poisoning deaths were autopsied. Of these 200 cases, the investigating police officer produced chemical analysis report in 155 cases for the final opinion, which constitutes the cohort of the present study.

Details of poisoning cases were obtained from the records being maintained in the department, i.e., inquest reports, autopsy reports, hospital records, and chemical analysis reports.

Results

Of the 200 poisoning deaths, 45 cases were excluded from the study for want of chemical analysis report on the viscera and body fluids that were sent to the Forensic Science Laboratory (FSL). The time taken by the police to transfer the viscera from the Mortuary to the FSL was 15-30 days in 59 cases (38.1%). In 74.1% of cases, the chemical examiner took 1-3 months to give the report regarding the nature of the poison. In more than 50% of the cases, the police took 1-3 months to produce the chemical examiner's report for furnishing the final opinion regarding the cause of death. In all the cases, the Forensic Pathologist concerned gave the opinion as to the cause of death on the same day of the receipt of chemical examiner's report.

Discussion

The search for truth forms the essence of Forensic Medicine. This necessitates an essential link between the enforcement of law and the protection of the public in the administration of justice. Unfortunately, in poisoning deaths, administration of justice is often delayed due to want of FSL reports. Positive proof of poisoning depends on the detection of poison in the sample(s) sent for analysis to the Forensic Science Laboratory. If the result of the test is negative, opinion of poisoning must always be corroborated by clinical/autopsy findings and circumstantial evidence. Failure to preserve and dispatch the exhibit/samples at the earliest to the FSL, by the doctor concerned, renders him/her liable to be charged with causing destruction of evidence under sections 201-204 of the Indian Penal Code.[1,2] Discretionary power as to whether to have the viscera/body fluids/other biological material analyzed at an FSL rests with the Medical Officer and the Investigating Officer of a particular case.[3] The doctor conducting the autopsy on a poisoning case must collect the relevant viscera and body fluids and dispatch them through the police to the nearest FSL.[4,5]

In most of the cases of the present study, the investigating police officer took 15-30 days to dispatch the viscera to FSL. The time interval varied from a minimum of 4 days to a maximum of 5 months and 17 days. In 22 cases, it took more than 3 months for the dispatch to be complete. The reason for this could be low priority assigned to such cases, since most of the poisoning deaths are suicidal or accidental.[6] More often than not, there is no offender to be suspected or apprehended. This naturally demands less attention from the police as compared to crimes such as homicide, assault, rape, and the like. This is further compounded by the fact that crime rate keeps rising, while manpower is perpetually in short supply in police stations. Hence the investigating officer can hardly spare time to dispatch viscera to FSL in cases such as accidents and suicides.

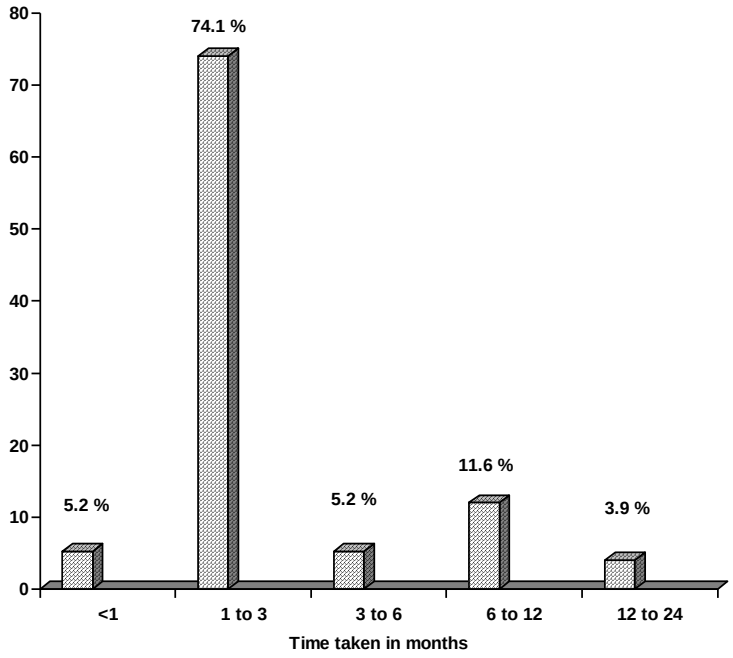
In more than 70% of cases analyzed in the present study, the chemical examiner took 1-3 months to furnish the report. In general, the time required for the analysis of a poison varies

between few hours to few days. In this context it is pertinent to note that very few Forensic Science

Table 1: Time taken by the Investigating Officer to dispatch viscera to FSL

Time taken	Cases	Percentage
<15 days	19	12.2
15-30 days	59	38.1
1-3 months	55	35.5
3-6 months	22	14.2
Total	155	100

Fig. 1

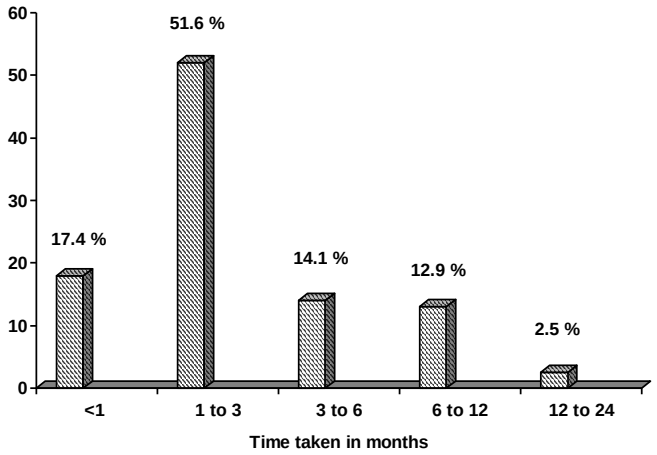


Time taken by the FSL to furnish the report

Laboratories exist in India to cater to the huge load of samples that are constantly generated. In the entire State of Karnataka for instance, there are only three authorized FSLs. This inevitably leads to overload. It is well known that India has a high incidence of poisoning, being the 4th most common cause of mortality in rural India.[7] It has also been observed in our study that, even after preparation of the report by the chemical examiner, the police took 1-3 months in more than

50% of cases to produce the FSL report in the department for final opinion as to the cause of death. The reasons may be the same as mentioned above. In all the cases the autopsy surgeon handed over the viscera and autopsy report to the Investigating Officer on the same day of autopsy, and gave the final opinion as to the cause of death on the same day of receipt of FSL report.

Fig. 2



Time taken by the Investigating Officer to dispatch the FSL report to the Autopsy Surgeon

Since the procedural delay observed in the entire process compels the next of kin of the deceased to wait for prolonged periods, during which time they are forced to knock on the doors of police stations to find out the reasons for the delay, the following suggestions are being proposed to mitigate the situation:

1. Establishment of well-equipped Toxicology Laboratories in all autopsy centers. It must be clearly understood that toxicology laboratories are not only helpful to clinicians for diagnosis and treatment, but are also vital to autopsy surgeons for arriving at the correct postmortem diagnosis regarding the nature of poison consumed. Moreover, such a measure will positively lessen the burden of existing FSLs in the country.
2. Establishment of more Regional Forensic Science Laboratories at District levels.
3. Provision of more manpower at both FSLs and police stations.
4. A separate policeman could be deployed in every police station exclusively to oversee procedural formalities of chemical analysis in poisoning deaths.
5. Creating awareness among investigating police officers about the importance of FSL report in furnishing the cause of death.

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