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Original Research Article.

Pattern of Autopsies Conducted by Residents in IGIMS, Patna: A Retrospective Study

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ABSTRACT

Background: To study the pattern of autopsies conducted by residents in IGIMS, Patna.

Methods: In present study; autopsies for age analysis, gender distribution, time since death, manner and cause of death, rural and urban residential status were determined.

Results: Total 194 autopsies were conducted between 19th April 2015 to 18th April 2017 of which 114 autopsies were conducted by residents in that period. Majority (98) dead bodies were of urban males. Most common cause of death remained road traffic accidents (RTA). The 2nd most common cause of death was use of poison. Most common age of victims was >40 years.

Conclusion: Autopsy helps in dispensation of justice particularly in homicidal cases. Autopsy helps the Government for framing policies to control violence in the community.

Key words: Autopsy, Unnatural Death, Residents, Crimes.

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INTRODUCTION

An autopsy (auto means self, opsy means examination) - also known as a post-mortem examination, necropsy (particularly as to non-human bodies), autopsia cadaverum, or obduction - is a highly specialized surgical procedure that consists of a thorough examination of a corpse to determine the cause and manner of death. The word "autopsy" was collected from the Ancient Greek *autopsia*, "to see for oneself".[1]

An autopsy is frequently performed in cases of sudden death, where a doctor is not able to write a death certificate, or when death is believed to result from an unnatural cause. These examinations are performed under a legal authority (forensic expert, Medical Examiner or Coroner or Procurator Fiscal) and do not require the consent of relatives of the deceased.[2]

There are four main types of autopsies are conducted in India:

- Medico-Legal Autopsy in order to find the cause and manner of death and time since death. They are generally performed as prescribed by applicable law, in cases of violent, suspicious or sudden deaths, deaths without medical assistance or during surgical procedures.[3]
- Clinical or Pathological autopsies are performed to diagnose a particular disease.[3]
- Anatomical or academic autopsies are carried out by students of anatomy for study purpose only.[3]
- Virtual or medical imaging autopsies are performed utilizing imaging technology only, primarily magnetic resonance imaging (MRI) and computed tomography (CT).[4]

The concept of a medico-legal autopsy has been mentioned in the sections 174 and 176 Code of Criminal Procedure (Cr.P.C.) during investigations of a suspected death.[5] Autopsies are used in clinical medicine for the identification of medical error. A systematic review of studies of the autopsy calculated that in about 25% of autopsies a major diagnostic error will be revealed.[6]

A large meta-analysis by Vijay kumar and Suresh in 2014 suggested that approximately one-third of death certificates are incorrect and that half of the autopsies performed produced findings that were not suspected before the person died. Also, it is thought that over one fifth of unexpected findings can only be diagnosed histologically, i.e. by biopsy or autopsy, and that approximately one quarter of unexpected findings, or 5% of all findings, are major and can similarly only be diagnosed from tissue. One study found that (out of 694 diagnoses) "Autopsies revealed 171 missed diagnoses, including 21 cancers, 12 strokes, 11 myocardial infarctions, 10 pulmonary emboli, and 9 endocarditis, among others".[2]

The main aim of medicolegal autopsies are to establish the identity of an unknown body, to ascertain the time since death,

cause of death and whether the death was natural or unnatural and if unnatural, whether it was homicidal, suicidal or accidental.[7]
Residents in India refer to Senior Resident and Junior Resident both. They are many a times referred to as "Backbone of the Medical system". Owing to acute shortage of faculties in various medical colleges and simultaneous day by day increasing workload demands for helping hands of residents to the faculty members. With each exposure, residents not only learn new things from their seniors but they also get acquainted to tackle various real time scenarios too.
Autopsy in IGIMS begin from 19th April 2015. Total of 194 autopsies were conducted in first two years of commencement of autopsy in IGIMS, Patna. This study aims to determine the pattern of autopsies in that period done by residents.

MATERIALS AND METHODOLOGY

In this retrospective study, autopsies conducted from 19th April 2015 to 18th April 2017, at mortuary of IGIMS, Patna were included. The post-mortem reports, police papers and notes of the hospitals were studied. Total 114 autopsies were performed by residents of Department of Forensic Medicine and Toxicology, IGIMS, Patna during this period. The data was analyzed regarding age, sex, time since death, manner/cause of death and residential status of urban/rural victims. All the autopsies done by residents were included in the study.

Table 1: Total cases done in First Two years at IGIMS, Patna

Total number of autopsies done between 19-04-2015 till 18-04-2017 (%)	Total number of autopsies done by residents between 19-04-2015 till 18-04-2017 (%)
194 (100)	114 (58.76)

Table 2: Total cases according to sex status

Status	Number (%)
Male	98 (85.96)
Female	16 (14.04)

Table 3: Total cases according to age

Age	Cases (%)
<20 years	18 (15.78)
21-30 years	35 (30.70)
31-40 years	21 (18.44)
>40 years	40 (35.08)

Table 4: Total cases according to residential status

Status	Number (%)
Urban	65 (57.01)
Rural	49 (42.99)

Table 5: Total cases according to weapons/ cause of death

Weapons/ cause of death	Number (%)
Road Traffic Accident (RTA)	53 (46.49)
Poison	14 (12.28)
Firearm	12 (10.52)
Hanging/ Strangulation	10 (08.77)
Blunt Weapon	09 (07.89)
Electrocution	03 (02.63)
Suffocation	01 (00.87)
Drowning	01 (00.87)
Nil	11 (09.68)

Table 6: Total cases according to manner of death

Manner of Death	Number (%)
Accidental	64 (56.14)
Suicidal	22 (19.29)
Homicidal	19 (16.66)
Natural	09 (7.91)

Table 7: Total cases according to time since death

Time Since Death	Number (%)
<12 hours	45 (39.47)
12-24 hours	55 (48.24)
24-36 hours	12 (10.54)
>36 hours	02 (01.75)

RESULTS

Total 194 autopsies were performed at mortuary of IGIMS, Patna from 19-04-2015 to 18-04-2017 of which 114 (58.76%) autopsies were conducted by residents of the institution [Table 1].
Most dead bodies were of males (85.96%) as compared to females (14.04%) [Table 2]. Most common age of victims was >40 years (35.08%) [Table 3]. Urban population were more affected as compared to rural population [Table 4].
Road Traffic Accident (RTA) was the most common cause of death causing 53 (46.49%) deaths [Table 5]. It may be due to greater male exposure on urban streets. The second most common cause of death was poisoning with 14 victims (12.28%). Twelve (10.52%) deaths occurred due to use of firearm weapons. Three persons (02.63%) died due to electrocution. Hanging, strangulation, suffocation and drowning together claimed 12 (10.52%) lives.
Accidental deaths was observed to be the most common manner of death claiming 64 (56.14%) deaths, followed by 22 (19.29%) cases of suicidal deaths [Table 6].
Most commonly, dead bodies were brought to mortuary for autopsy 12- 24 hours after death (48.24%), only two cases (1.75%) were brought for autopsy whereby time since death was more than 36 hours [Table 7].

DISCUSSION and CONCLUSION

Many studies in the past[2,8] have also shown majority of affected cases to be of males from urban areas whereby cause of death was Road Traffic Accident (RTA). It may be due to greater male exposure on urban streets and higher chances of traffic accidents among them. In the present study, most common age of victims was >40 years whereas many other studies in the past have found 31-40 years being the most affected age group.[10-12] It may be due to epidemiological variation in Bihar wherein elderly people use to ride more on vehicles and are more prone for road traffic accidents. The proportion of fatal accidents in the total road accidents has consistently increased since 2002 from 18.1 to 24.4% in 2011. The severity of road accidents measured in terms of persons killed per 100 accidents has also increased from 20.8 in 2002 to 28.6 in 2011.[9] Autopsy plays a pivotal role in assessing cause of death, time since death, mode, manner and mechanism of death, thus helps in dispensation of justice particularly in homicidal cases. It provides help to the Government for framing policies to control violence in the community. The autopsy should be complete and meticulous, poorly performed autopsy is worse than no autopsy at all, as it is more likely to lead to miscarriage of justice. The need for the autopsy examination becomes more important in the presence of suspicious deaths and death in presence of witness and under circumstances in which factors of emotional and physical strain may have played the role. Preventive measures targeting at these high-risk groups are important to reduce the incidence of severe RTA.

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