



# AUTOPSY; PROFILE OF NEGATIVE AUTOPSY CASES DONE AT DHQ HOSPITAL, LAKKI MARWAT- KPK

Amir Hamza<sup>1</sup>, Abdul Haq Wazir<sup>2</sup>, Shabir Hussain<sup>3</sup>, Shafqatullah<sup>4</sup>

1. MBBS, DMJ  
Assist. Prof. Forensic Medicine  
Department,  
Bannu Medical College, Bannu
2. MBBS, DMJ  
Assist. Prof. /HOD Forensic  
Medicine Dept.  
Nowshehra Medical College,  
Nowshehra
3. MBBS, M.Phil  
Assist. Prof. Pharmacology  
Department,  
Bannu Medical College, Bannu
4. MBBS, MPH

**Correspondence Address:**  
Dr. Shafqatullah  
Dr Amir Hamza Clinic Tehsil Serai  
Naurang District Lakki Marwat KPK.  
azadwazir345@gmail.com

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**ABSTRACT... Background:** One of the most frustrating challenges faced by the medico legal doctors/ forensic pathologists is the inability to determine the cause of death in cases of sudden / unexpected deaths of medicolegal nature even after detailed autopsy as well as Histopathological / Toxicological analysis. **Objective:** The study was aimed to find out the percentage of negative autopsy against the total cases of medicolegal autopsies conducted during the study period in Lakki Marwat KPK. **Material and methods:** The study was carried out in DHQ Lakki Marwat based upon five years autopsy data from 1st January 2013 to 31st December 2017. All the medico legal autopsies were included in the study whereas; the cases of alleged custodial deaths / police encounters were excluded. The cases where gross examination at initial autopsy, histopathological examination & toxicological analysis failed to detect the cause of death were labeled as negative autopsies. **Study design:** Descriptive, Retrospective Study. **Setting:** The study was conducted at DHQ hospital Lakki Marwat. **Period:** 1<sup>st</sup> January 2013 to 25<sup>th</sup> June 2017. **Results:** Out of the total 200 autopsies, there were 39 negative autopsies comprising of 26 (60.46%) males and 17(39.53%) females. **Conclusion:** The cases of negative autopsy are higher at lakki marwat as compared to international perspectives.the negative autopsies are higher because of the inadequate training of doctors or limited resources like availability of histo-pathological labs, analytical services and radiological facilities. Postmortem units and toxicology laboratories are not equipped according to the modern standards in the light of recent advances in the field of medico legal death investigation.

**Key words:** Medico legal Autopsy, Postmortem Examination, Negative Autopsy.

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## INTRODUCTION

The main aim of an autopsy is to find the cause of death and the condition of health of the deceased in his/her life. The information which is obtained from the autopsy done in suspicious situations such as sudden, obscure, unnatural, criminal deaths, is used for legal purposes to facilitate the course of justice.<sup>1</sup> there may be non-significant medical history, no abnormal finding may be found on detail external and internal examination and the histological, microbiological, toxicological investigations may remain non-significant. In such condition, according to Professor Alan Usher of Sheffield points, the case should be labeled as "unascertainable".<sup>1</sup>

According to some surveys (carried out in various countries) that in cases where doctor declares a cause of death with negative autopsy findings, the

rate of error is of the range 25-50%, though death occurs in hospital. Although autopsy is considered superior to the detail examination in finding the cause of death, but still cause of death in 5-10% of cases remains obscured after gross autopsy and 2-5% remains unclear after thorough gross and histological examination and other laboratory investigations.<sup>2-3</sup> The most important steps in the investigation of a sudden death comprises relevant detailed history and information regarding crime scene, detailed scrutiny of the deceased i.e. gross as well microscopic autopsy, performing proper laboratory investigations and making the right decision.<sup>3-4</sup>

An autopsy is considered to be negative when all the gross /microscopic examination, toxicological scrutiny and laboratory investigations fail to find out the cause of death.<sup>5</sup> A negative autopsy may

be because of lack of professional knowledge or improper use of professional skills and inadequate or deficient laboratory investigation/toxicological analysis. Death due to hypersensitivity reactions, status epilepticus, and vagal inhibition is called sudden death and may lead to negative anatomical findings. The causes which may lead to negative autopsy findings are: mesenteric vein thrombosis,<sup>5</sup> Myocardial infarction,<sup>6</sup> sports related activities,<sup>7</sup> epilepsy,<sup>8</sup> the coronary artery disease,<sup>9</sup> congestive cardiac failure,<sup>10</sup> congenital anomaly like situs inversus,<sup>11</sup> spontaneous subdural,<sup>12</sup> aneurismal subarachnoid hemorrhage,<sup>13</sup> heart failure due to pheochromocytoma.<sup>14</sup> Certain poisons could not be detected in deceased because they metabolized and eliminated from the body very quickly i.e. alcohol, barbiturates. The additional causes includes biochemical disturbances which comprises hyperglycemia, hypocalcaemia, hypokalemia and respiratory disorders as in severe porphyria.<sup>15</sup>

According to Chughtai BR et al,<sup>16</sup> the rate of negative autopsy in Pakistan is 23.44%, while according to Khan MY et al,<sup>17</sup> the rate of negative autopsy in Peshawar is 1.45%. It is a trustable job to find out the exact cause of death and to decrease the number of negative autopsies,<sup>18</sup> as far as possible, which become falsely high if professional skills/knowledge and proper measure are not taken prior to postmortem examination.

## MATERIALS AND METHODS

The data of this study were obtained from postmortem records of 5 years with effect from 1st January 2013 to 25th June 2017 in DHQ Lakki Marwat. All the medico legal autopsies were included in the study whereas; the cases of alleged custodial deaths / police encounters were excluded. In all cases gross examinations was the base of observation for any evident cause of death. Histopathological examination, Microbiological and toxicological analysis were done on specimen obtained during autopsy for certifying of cause of death. All the qualitative factors like, age, sex, suggestions regarding cause of death, negative autopsy rate were noted down in hospital record book. The percentages of these variables were calculated. We certify that

we have maintained privacy and confidentiality of the participant whose information is used in this article.

## RESULTS

Out of 200 autopsy cases, no opinion about cause of death was given in 43 cases.

Table-I shows the 200 cases taken in last 5 years that highest percentage of negative autopsy is in 2015.

Year	Total No. of Autopsy	Total No of Negative Autopsy	% age
2013	38	8	21.05
2014	32	5	15.6
2015	41	13	31.7
2016	35	7	20
2017	54	10	18.5
Total	200	43	21.5

**Table-I. Distribution of negative autopsy over the last five years**

Year	Total No. of Negative Autopsy	Male n (%)	Female n (%)
2013	8	3(37.5)	5(62.5)
2014	5	2 (40)	3 (60)
2015	13	9 (69.23)	4 (30.76)
2016	7	5(71.42)	2 (28.57)
2017	10	7 (70)	3 (30)
Total	43	26 (60.46)	17 (39.53)

**Table-II. Allocation of Sex in Negative Autopsy**

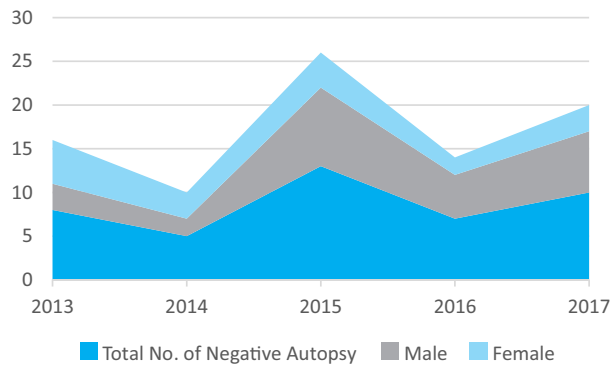
## Gender wise Distribution of Negative Autopsies

Table II shows that the percentage of negative autopsy in male (60.46%) is higher than female (39.53%).

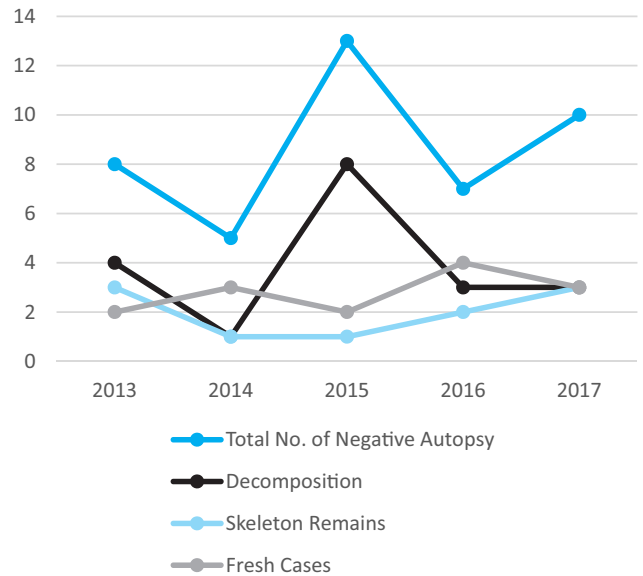
Gender wise distribution of negative autopsy is shown in the below graph.

Age wise distribution of negative autopsies cases is given in Table 3.

Gender wise distribution of negative autopsy



status of deceased body at the time of autopsy

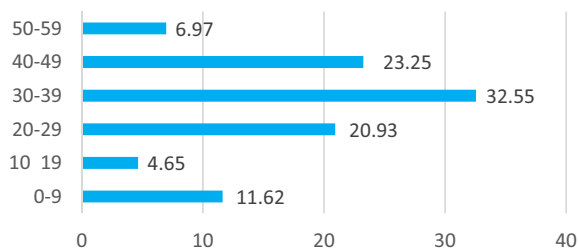


Age Ranges (Years)	No. of Cases	Percentage (%)
0-9	5	11.62
10-19	2	4.65
20-29	9	20.93
30-39	14	32.55
40-49	10	23.25
50-59	3	6.97
Total	43	100

**Table-III. Age wise Distribution of Negative Autopsies**

Age wise distribution of negative autopsy is shown in the graph below

Age wise distribution of negative autopsy



Below is graphical presentation of profile of status of the deceased body at the time of post-mortem and show that out of total no of negative autopsy cases, increased number of cases were of decomposed dead body and next was fresh deceased with no sign of decomposition and skeletal remains took third place in the order.

**DISCUSSION**

Partial or incomplete autopsies are commonly done by inexperienced doctors in peripheral hospitals which may lead to either faulty medicolegal opinions or end up without establishing exact cause of death and autopsies becomes obscure or Negative. Such type of substandard medicolegal work has no place either in Forensic practice or in criminal justice system. The trend of negative autopsy observed in the DHQ ,Hospital Lakki Marwat (KPK) provides a snapshot of the unclassifiable causes of deaths in 200 cases whereas; the study conducted by Rahman M et al,<sup>17</sup> on a sample of 294 cases; the negative autopsy rate was 6.9% which is higher than that mentioned in standard text books,<sup>5,6,14</sup> and in our study of 200 cases over the period of five years the percentage of negative autopsy in male (60.46%) is higher than female (39.53%).

The highest negative autopsy rates of various studies by Rahman M et al,<sup>17</sup> and Chughtai BR et al,<sup>16</sup> may be due to deficient history, lack of arrangements of crime scene inspection, no appropriate laboratory examination facilities, inadequate toxicological analysis service and above all by posting of fresh medical graduates without knowledge and training of medicolegal

and autopsy work. This may be due to fact that males are more exposed to external environment than females.

### CONCLUSION:

In this study the rate of negative autopsy over the last five year at District Head Quarter Hospital Lakki Marwat (KPK) is 21.5% which is higher as compared to other studies carried out by Rahman M et al,<sup>17</sup> and Chughtai BR et al,<sup>16</sup> and Modi k et al.<sup>1</sup> To reduce the negative autopsy rate, the facilities for the postmortem examination should be improved. Some important protocols, guidelines & qualifications must be decided before conducting postmortem examination.

### RECOMMENDATIONS

- Start proper training programs in form of workshops, seminars, conference and demonstrations to update the knowledge regarding various medico legal aspects including postmortem examination as well as complication of different legal and illegal procedures.
- Government should decide some policies and for their implementation various Departments of Forensic medicine and Toxicology should be promoted, supported, facilitated and funded, so that such type of programs could be implemented effectively and successfully.
- Meticulous autopsy and histo-pathological examination are need of the hour to minimize risk of autopsy being negative or obscure one. In addition to that; provision of latest investigative tools i.e. highly sophisticated analytical toxicology Lab; DNA fingerprinting, as well as postmortem radiology / imaging to be used in death investigation. It will help to reduce the number of negative autopsies in the long run and provide a definitive cause of death.

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*The art of being wise is knowing what to overlook.*

– William James –

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#### AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Amir Hamza	Design the study, Data collection & Compilation.	
2	Abdul Haq Wazir	Data collection.	
3	Shabir Hussain	Data collection and compilation.	
4	Shafqatullah	Compilation.	