A HOSPITAL BASED AUTOPSY STUDY OF 50 CASES AT COMBINED MILITARY HOSPITAL (CMH), SIALKOT

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ABSTRACT

Objective: To analyze the pattern of deaths on autopsy carried out on Armed Forces personnel in CMH Sialkot.

Study Design: Retrospective analytical study

Place and Duration of Study: Combined Military Hospital Sialkot (CMH), from 2009 to 2012

Materials and Methods: In a total of fifty (50) cases detailed postmortems were carried out and gross features on external examination and different systemic examinations were recorded. Histopathology of various organs was done in all cases. Chemical and toxicological examination of various abdominal viscera was carried out in all sudden and suspicious deaths.

Results: Ischemic Heart Disease (IHD) was most common cause of death (38%) followed by road traffic accidents (14%) and electrocution (8%). Sudden adult death syndrome accounted for 4 cases of deaths. Other causes were drowning, cerebral malaria, heat stroke, gunshot wounds, myocarditis, brain hemorrhage, meningitis and diabetic ketoacidosis. Most of these cases were young soldiers (n=30) followed by Non-Commissioned Officers (n=17).

Conclusion: A large number of our young soldiers dying of heart problems is an alarming situation. Awareness among the troops of various risk factors is most important. Precautionary measures against preventable causes should be taken.

Keywords: Autopsy study, Electrocution, Ischemic heart disease.

INTRODUCTION

In most countries certain registries are available which maintain proper record of mortality data. Such data is analyzed from time to time to find out the pattern of deaths in that locality. Unfortunately such population based registry is not available in our country. Furthermore medical autopsies are not carried out in routine in most of the hospitals.

However in Armed Forces all cases of sudden and suspicious deaths are thoroughly investigated to ascertain the cause of death. Detailed postmortems are carried out with an idea to find out the exact cause with the help of gross findings, histopathology and chemical / toxicological examination of viscera.

A study was carried out in CMH Sialkot to analyze the patterns of death in Sialkot Garrison over a period of 3 years. Aim of this study is to share our experience and to chart out various trends which may help us to take some remedial measures to prevent some of these deaths in future.

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MATERIAL AND METHODS

This retrospective study was conducted in Pathology Department of CMH Sialkot. Fifty death cases of serving personnel on whom autopsy was carried out during last 3 years (2009-2012) were included in the study.

Data regarding age, sex, unit, trade and duration of service of these serving personnel was collected. Detailed clinical history of admitted cases before death and circumstances leading to death were also noted. Postmortem of these individuals was carried out in mortuary of CMH Sialkot. External examination was carried out to gather information regarding rigor mortis, postmortem lividity, pattern of injuries, if any, and physical state of body. During internal

examination various viscera of different systems were removed and dissected in detail.

Table: Showing initial autopsy and final histopathology diagnosis (n= 50).

Initial autopsy diagnosis	No of deaths	Final Histopathology Diagnosis
Ischemic Heart Disease (IHD)	19 (38%)	Consistent with IHD
Various accidents	7 (14%)	Death due to Haemorrhage & Shock
Electrocution	4 (8%)	Consistent with electrocution
Adult Sudden Cardiac Death Syndrome (ASCDS)	4 (8%)	No definite cause found on gross autopsy, histopathology, chemical & toxicological examination and were labeled as ASCDS
Drowning	3 (6%)	Consistent with drowning
Falciparum Malaria	2 (4%)	Cerebral Malaria
Heat stroke	2 (4%)	Multi organ failure (Consistent with Heat stroke
Gunshot wounds	2 (4%)	Consistent with Firearm injury
Fever NYD	2 (4%)	Myocarditis
Brain hemorrhage	2 (4%)	Intracerebral Haemorrhages
Meningitis	2 (4%)	Meningitis
Diabetic Ketoacidosis	1 (2%)	Multi organ failure

Representative sections for histopathology were taken from different body viscera and fixed in 10% formal saline. Specimens were sent to Armed Forces Institute of Pathology (AFIP) Rawalpindi for histopathological examinations. The final cause of death was re-categorized according to their histopathology report.

Specimens for chemical / toxicological examination of abdominal viscera (liver, kidney, and stomach and small intestine contents) were collected in all sudden and suspicious death cases. Such specimens were sent to Chemical Examiner Laboratory, Government of Punjab Lahore to exclude the possibility of poisoning.

A final cause of death was ascertained based on the information gathered from gross examination of body/organs during autopsy, histopathology and chemical examination of body viscera.

RESULTS

All cases on which postmortem was carried were serving Armed Forces males. Their age ranged from 19 to 46 years with a mean age of 33.1 +/¬- 7.2 years. Their service duration ranged from 1.5 to 27 years with a mean of 13.4 ± 6.8 years. Twenty eight cases (56%) were brought in dead to CMH Sialkot. The hospital stay of remaining 22 cases ranged from one hour to 14 days with a mean of 12.6 ± 3.8 hours.

Most of the deaths occurred in 4th decade (48%), followed by third (34%) and fifth decades (16%) of life. There was only one person (2.0%) who died at the age of 19 years (Figure). Regarding rank distribution, majority of these cases were LNk/Sep (n=30). The rest were Hav/Nk (n= 17) and JCOs (n=3).

Out of 50 postmortems carried out, 18 deaths occurred due to IHD secondary to coronary atherosclerosis (38%) as was suggested on histopathological examination as well. Gross autopsy and final histopathology diagnosis is given in Table. Most of these cases of IHD (16/19) were under the age of 40 years. Amongst them, there were only 01 JCO. The rest were NCOs (n=8) and LNk/Sep (n=7). Gross dissection of hearts revealed that anterior descending branch of left coronary artery (LAD) was predominantly blocked by atheroma / thrombus in 6 cases, right coronary artery in 3 cases and main left coronary artery in 3 cases. Seven hearts showed moderate

to marked coronary atherosclerosis of both right coronary artery and LAD.

Accidents of various types occurred in about 14% cases leading to death. Majority of these cases (5/7) died due to multiple injuries in different road traffic accidents. Four of these presented with head injuries while one case was with severe abdominal injury.

Electrocution was third common cause in this study accounting for 8% of deaths whereas in 4 cases no exact cause of death was found. No pathology was found on gross examination of viscera of body. There were no definite histopathological changes which could have led to death. Even chemical examination report was negative. These cases were finally labeled as sudden adult death syndrome. All such cases were young adults with age ranging from 22- 32 years.

Chemical / toxicological analysis report by Chemical Examiner – Government of Punjab did not reveal the presence of poison in any case.

DISCUSSION

The most common cause of deaths in Armed forces personnel is this study was IHD secondary to coronary atherosclerosis and that also in majority less than 40 years of age. In a study by Lim et al. IHD is the most leading cause of death worldwide accounting for 7.25 million deaths in 2007 (12.8% of all deaths). In other study of urban areas of Pakistan, it was concluded that one in four subjects aged >40 years may have underlying coronary artery disease and IHD is the most fatal disease particularly in young age. Results of our study are comparable with a study done by Luqman et al. where sudden cardiac death accounted for 28% of all death cases in which about 72% were under the age of 40 years. Likewise majority (56%) were of rank of Sep / NCOs comparable to 80% in our study.

It is worth-mentioning from the results of this study that in our setup coronary heart disease is not only the problem of old age. It has also emerged as challenge of young population. Our screening as well as preventable measures should be goaled towards young generation.

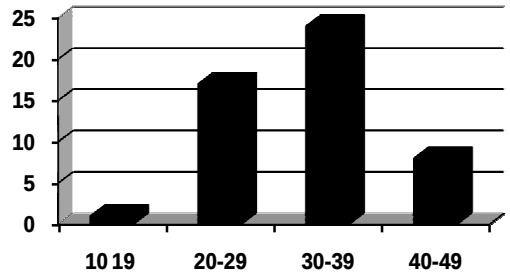

Figure: Showing age distribution of the cases

Campaign should be launched to make our young generation aware of risk factors for IHD. There is a dire requirement of changing our lifestyle and eating habits. All those young soldiers who are suffering from various risk factors like hypertension, diabetes mellitus, hyperlipidemia and hyperuricemia or have strong family history of such disorders should be specially instructed to have regular treatment and follow up. We must start all these efforts, although it may take long for these measures in reducing morbidity and mortality.

In current series 4 out of 50 cases (8%) did not reveal any pathology during autopsy, histopathology and even chemical examination of viscera reports. These cases were finally labeled as sudden adult death syndrome.3 A study by Davies et al. has revealed that in many cases, neither a recent coronary occlusion nor an evolving myocardial infarction could be identified in cases of sudden cardiac death. It is now accepted that in a substantial number of cases sudden death may result from coronary spasm or cardiac arrhythmia or resulting from blockade or pathology in electrophysiological pathway of heart in the absence of any gross or histopathological changes in heart. 8,9

Accidents are the second most common cause of death in our study (14%). Most of these are due to road traffic accidents. It is suggested that our troops should be educated about traffic rules and particularly use of helmets while

driving motor cycles. Other causes of deaths include electrocution and drowning. Deaths due to electrocution not only reveal poor state of our electric wirings and faulty gadgets but also lack of precautionary measures especially during rainy season.

CONCLUSION

This study has revealed different trends of deaths among serving persons. Majority of these causes are preventable. A large number of our young soldiers, dying of heart problems, is an alarming situation. Awareness among the troops of various risk factors is most important. Precautionary measures against preventable causes should be taken. It is the need of day that analysis of such data be carried out on yearly basis in all the Military hospitals. It will help to know the changing trends of cases of deaths.

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