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An Analysis of Firearm and Explosives Injury in Imphal: A 2 Years Autopsy Based Descriptive Study

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Abstract

Deaths due to high end machineries like guns and sophisticated explosives are on increasing trends with throughout the world. Such deaths lead to high morbidity and mortality in the human society. The present study was conducted to explore various socio demographic characters of victims and medicolegal aspects related to firearm and explosive injuries death. This was a descriptive cross sectional autopsy based study of all firearm and bomb blast injury deaths brought to mortuary of Regional Institute of Medical Sciences, Imphal Manipur during the period from October 2013 to August 2015. In this study a total of 46 cases of firearm and explosives death during the study period was analysed in various medico-legal aspects. Rifled firearm and bomb blast was commonest weapon employed. Multiple injuries and head injuries were commonest cause of death. The trends of death might help the law enforcement authorities and Government to take proactive steps to curb this menace.

Keywords: Firearm; bomb blast; Homicide; suicide; injury; weapon.

Introduction

Firearms and explosives are one of the most dreaded weapons used by human being to kill themselves. Ever since the medieval history to present day, firearms of different types have resulted in great morbidity and mortalities. Firearms as a means of homicide or suicide are relatively becoming common in most places of the world, whereas road traffic accidents are relatively more common among young people.[1] And thus it depicts the frequency with which law and order situation in the society have been compromised. Firearm injuries account for high death rates but also lead to long term physical and mental morbidity for individuals, families, and societies at large.[4]

According to statistical data from the National Crime Report Bureau, total victims murdered by firearms during 2014 in India including all states and union territories was 3,655, out of which 540 were killed by licensed firearms and 3,115 by unlicensed firearms. Major case load were detected to be from Uttar Pradesh and Bihar state.[16]

With the progression of human civilization, the urge for money and power has led to the demand for firearm and explosives weapons have seen an extraordinary rise in the present times.[1]

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In North Eastern region of the Country, being surrounded with the international border around, firearm culture is known to exist since post independent era due to various reasons. However, there are very few detailed scientific analysis is available in this regard. The magnitude of problem out of such armed outfits is more or less present in all states of North Eastern region and Manipur is not an exception.

The present study was initiated to explore various socio demographic characters of victims and medicolegal aspects related to firearm and explosive injuries like type of weapon, motive behind the deaths, manner, intraday distribution, body parts involved and range of fire, cause of death etc.

Materials and Method

This was a descriptive cross sectional study of all firearm and bomb blast injury deaths brought to mortuary of Regional Institute of Medical Sciences, Imphal Manipur during the period from October 2013 to August 2015. Information was collected based on history of relatives, police information, requisition papers, and relevant reports produced by police. Type of firearm and bomb blast was determined on the basis of injury produced, burning of the skin, tattooing, entry and exit wounds. Manner of death as to homicidal, suicidal or accidental was based upon detailed examination of injuries and relevant history from police and relatives of the deceased and all other available documents.

Results and Observations

A total of 520 medico-legal autopsies have been conducted in the mortuary of Forensic Medicine Department, Regional Institute of Medical Sciences, Imphal during the period from October 2013 to August 2015. Altogether 46 (07.80%) cases were of firearm and explosives injury deaths during the study period and these cases were studied in details and comprehensively and thus the following results were observed. Out of 46 cases only 43(93.47%) cases were of males and 3(06.52%) cases were of females.

Maximum number of cases 21 cases (45.65%) was found in the age group 31-40 years and next in the frequency come the age group between 41-50 year with 15 (32.60%) cases and others in decreasing trends.

A maximum number of 27(67.50%) cases of firearm and blast injuries were observed from 6 p.m. - 12 midnight followed by 14(30.43%) cases from 6 a.m. to 12.00 noon. From 12 midnight to 6 am in the morning a total of 03(06.52%) cases were observed and least number of cases in the study were recorded from 12 noon to 6 pm.

A total of 36 cases (78.26%) were from urban background while 10 cases (21.73%) were reported from rural areas.

A total of 19(41.30%) cases were by rifled firearm weapons while 17(36.95%) cases were by bomb or explosive blast, and other weapons as displayed in the table no 01.

In 36.94% cases, single entry wound was observed and double entry wounds in 10.08% cases of firearm injury and multiple entry wounds in 52.98% of the cases of total cases which mostly contributed by explosive injuries.

Out of all the cases analyzed during the study period, 21 injury cases (45.65%) were from distant range, 12 (26.08%) from close range and 13 cases (28.26%) were from contact range.

The most common motive behind death of reported firearm injuries was terrorism activity. Group and personal rivalry was second most common cause of firearm injuries followed by others. Only one case was reported where death occurred during dispersion of mob which was accidental in nature as mentioned in the table no 02.

On overall analysis of the data a total of 40 cases (86.95%) turnout to be homicidal, 05 cases (10.86%) were of suicidal nature while 01 case (2.17%) were accidental in nature as displayed in table no 3.

Multiple body parts was by far the most important site of injury with 14 cases (30.43%) followed by head including 09(19.56%) cases. Thoracoabdominal was the site of injury in 7(15.21%) cases and other sites in decreasing frequency as shown in table no 4.

Shock & haemorrhage was the most common cause of death and next comes the head injury as shown in Table no 05.

Table 01: Type of firearm used

Type of firearm	Number of cases	Percentage (%)
Rifled	19	41.30
Bomb or explosives	17	36.95
Shotgun	07	15.21
Country made gun	03	06.52
Total	46	100

Table 02: Motives behind the fatalities

Motives	Number of cases	Percentage (%)
Terrorism	22	47.82
Rivalry	11	23.91
Encounter	06	13.04
Depression	04	08.68
Property dispute	02	04.34
While dispersion of mob	01	02.17
Total	46	100

Table 03: Manner of death involved in various firearm fatalities

Manner of death	Number of cases	Percentage (%)
Homicide	40	86.95
Suicide	05	10.86
Accident	01	02.17
Total	46	100

Table no 04: Body parts affected

Body part affected	No of cases	Percentage (%)
Multiple body parts	14	30.43
Head only	09	19.56
Thoracoabdominal	07	15.21
Head & thorax	06	13.05
Abdomen only	05	10.87
Head & abdomen	05	10.86
Total	46	100

Table no 05: Causes of death

Cause of death	No of cases	Percentage (%)
Shock & haemorrhage	25	54.35
Head injury	14	30.43
Injury to the vital organs	07	15.22
Total	46	100

Discussion

Gunshot injuries due to firearms and explosives are prevalent worldwide. Globally such injuries have been reported in almost each and every part of the world. Suicidal firearm injuries are commonly reported from developed countries whereas homicidal firearm and bomb blast are fairly common in developing countries. As per latest data, India ranks third all over the world in firearm related deaths, next only to Brazil and United States. Nearly 9 in 10 killed in India were men and most commonly involved people aged 20-24 years.[15]

According to the United Nations Organizations, young males were more vulnerable to the victims of such violent crimes due to their high risk taking behaviours ranging from street quarrels to drugs, from possession of weapons to gang memberships.[13]

It is observed that for the last 10 years in Manipur, there was a gradual declining trend of homicide after 2009 as per the data available in the archive of Department of Forensic Medicine, RIMS Imphal. There was 388(65.65%) cases of homicide in the year of 2009 which was mostly contributed to activities of miscreants and then number came down to 49(18.08%) in the year of 2014.

In our study, males outnumbered females with 93.47% deaths. More so, relatively young people in the age range of 31-40 years who are the bread earner of the family were the victims in the largest proportions (45.65%) as they are exposed to the outer world of competition whereas females are mostly housewives are confined in the domestic chores only. Similar results were obtained in the study conducted by Juglan S et al[3], Dutta S et al[5] and Kaul A et al.[10]

We found rifled firearms and bomb blasts were the most used weapon. Among explosives, improvised explosive devices (IED) were most commonly employed weapon. In contrast to our study findings, country-made weapons were the most common type used to produce gunshot wounds in Agra region according to Kumari S et al.[2] A possible reason for such difference is because there is easy availability of local manufacturers of country made weapons and shot guns in developing countries like ours as against extra technically sound rifled weapons.

In developed countries most common firearm weapon are rifled guns and similar patterns were observed in our study. Similar findings were observed by Moirangthem BK et al.[7]

Kumari S et al.[2] reports that 55% of cases were from rural background. In contrast to these findings, our analysis found a total of 36 cases (78.26%) from urban background.

In our study, mostly shots were aimed from distant range in majority of cases. In study by Sachan R et al.[6] close range was found to be the commonest. However, in our study close range was the next after distant range. 17 cases of bomb blast were also observed in our study.

Majority of cases in our study were homicidal deaths. These included deaths from distant range and close range combined together. Only one case of accidental firing was observed. Similar observations were found by Kumari S et al.[2], Kohli et al.[11] and Singh BP et al.[12] In the study by Brain Guetsclow et al.[14] suicidal deaths outnumbered homicidal deaths in past 30 years experience in United States.

In most of such homicidal cases single site entry wound marks were present. However, in 14 cases there were multiple injury marks which were due to firearm injuries associated with assault.

According to Hagras et al.[4] most firearm injury cases happened during night. Second in line were reported in afternoon while others were reported in morning. In contrast to that, in our study most of the cases were observed at late evening and early night time. The reason being early closure of all business and official activities in Imphal Manipur as compared other capital cities of a state. According to Kumari S et al.[2] 50% of the cases were observed in night. Such timings are more suited for silent and easy execution of incidents which can be partially attributable to intoxication or substance abuse which very much prevalent in this region.

Sachan R et al.[6] reported that property dispute were the underlying cause in most of the cases to be followed by incidences like dacoities and personal enmity. In contrast to it, the present study we found terrorism and group rivalry were most common causes of fatalities.

Thoraco-abdominal involvement was more common in distant range shots of firearm injury and dispersion of pellet in bomb blast with homicidal manner and head was more commonly affected in firearm injury cases with suicidal manner. This is consistent with the principle of common knowledge that head and neck are the sites of easiest access for suicidal acts. Thoraco-abdominal injuries are more often involved in distant range shots and explosives due to greater surface area compared to head and neck. Similar observations were found by Patowary AJ[9], Kohli A et al.[11] and Moirangthem BK et al.[7]

Shock & haemorrhage was the most common cause of death in our study and is in accordance with findings of Thube HE et al.[8] and Patowary AJ.[9] The reason could be because of multiple organs involvement in majority of cases leading to bleeding and shock out of it.

Conclusion

The present study highlights trends of firearm and explosives deaths in the developing country like ours where homicidal deaths are more than suicidal ones as against the trends in developed countries. It is of utmost important that government authorities put a strict vigilance and control over storage, production, distribution, circulation and licensing of such deadly weapons along with stringent measures to reduce such issues with commitment. And strengthening the social harmony and reducing interpersonal rivalries are to be tried upon at all levels to modify the mindset of the people in general.

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Ethical Clearance: From Institutional ethical committee.

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