

Profile of Firearm Fatalities in Rajkot Region: A Retrospective Study

D.K. Vadgama*, P.J. Manvar**, P.R. Varu**, V.J. Aghera**, M.N. Patel***, R.D. Vaghela***

Abstract

Context: A retrospective study of 40 cases of firearm deaths was conducted in dept. of Forensic Medicine and Toxicology of P. D. U. (Govt.) Medical College, Rajkot during the period of 2000 to 2014. *Aims:* To determine the pattern of deaths caused by firearms in and around Rajkot region. *Methods and Material:* A retrospective study of 40 cases of deaths due to firearm injuries was conducted in Dept. of Forensic Medicine and Toxicology of P. D. U. (Govt.) Medical College, Rajkot during the period of 2000 to 2014. The particulars of the victims, history of the incident, postmortem findings, etc. were recorded from the postmortem reports and relevant documents and are analyzed. *Statistical Analysis Used:* Microsoft excel. *Results:* Incidence of firearms deaths was 0.13% during this period. Most of victims (42.5%) were of age group of 21-30 years. Most of victims(92.5%) were male.82.5% of victims were belonging to lower socio-economical class.67.5% cases were of rifled injuries and 32.5% were of shotgun injuries. Most common targeted part was chest (55%), followed by head and face (45%). 90% cases were homicidal and 10% cases were suicidal. Most of the victims (52.5%) had single firearm entry wound. *Conclusions:* The majorities of the victims were men and age group of 21-30 years. The most common targeted body part was the chest. Most of the deaths were due to rifled firearm injuries and homicidal. In all suicidal cases, the victim were male, females are not using firearm to kill self. Death due to firearm injuries is very less as compared to India and other countries. Incidence of death due to firearm injuries are progressively increasing from 2008, it may be because of modernization in the societies.

Key-words: Firearm Injury; Suicide; Homicide.

Introduction

Guns have the power to turn people into heroes or into villains. The use of firearms has increased due to tech-nological advances in firearms and the ease of obtaining them, legally or illegally.

Violent injuries are the eighth leading cause of death, worldwide [1]. Besides high death toll; firearm injuries cause significant morbidity, long-term physical and psychological disability for individuals, families and societies [2].

The incidences of violent crimes with gunshot

injuries have become increasingly more common, reflecting the deterioration of law and order in our society. These are common in the lower and middle income countries [3]. Gun related violence is the most common in poor urban areas and in conjunction with gang violence, often involving juveniles or young adults [4,5].

As compared to other countries of the world, in India violence by firearm is less but illegal country made weapons are rampantly used.

The Objective Of The Study Is To Outline The Pattern Of Firearms Injuries And Deaths In This Area And Compare It With The Pattern Seen In India And Other Countries.

Material and Methods

A retrospective study of 40 cases of deaths due to firearm injuries was conducted in Dept. of Forensic

Authors Affiliation: *Assistant Professor, **Tutor, ***Resident, Department of Forensic Medicine, P.D.U. Government Medical College, Rajkot-360001, Gujarat, India.

Reprints Requests: Divyesh K. Vadgama, Assistant Professor, Department of Forensic Medicine, P.D.U. Government Medical College, Rajkot-360001, Gujarat, India.
E-mail: divyesh.vadgama@gmail.com

Medicine and Toxicology of P. D. U. (Govt.) Medical College, Rajkot during the period of 2000 to 2014 to determine the pattern of deaths caused by firearms in and around Rajkot region. The particulars of the victims, history of the incident, postmortem findings, etc. were recorded from the postmortem reports and relevant documents and are analyzed.

Results

Total 29365 dead bodies were brought to mortuary of P. D. U. (Govt.) Medical College, Rajkot during the study period & only 40 (0.13 %) deaths were due to firearm injuries. Out of total 40 cases, 37 victims were male and 3 victims were female.

22.5% of firearm injuries death were recorded before 2008 and 77.5% of the cases of firearm injuries death after 2008. Incidence of death due to firearm injuries were found to be increased in last 5 years (Graph 1).

42.5% cases were of the age group 21 to 30 years, which was followed by the age group 31 to 40 years (25%) and then by 41 to 50 years (17.5%) (Table 1). 50% victims were from rural area and remaining 50% were from urban. 90% cases were homicidal and 10% cases were suicidal and no any case of accidental firearm death. 67.5 % cases were of rifled injuries and 32.5% were of shotgun injuries.

Chest was involved in 55% cases followed by head and neck (45%), neck (35%), upper limb (27.5%), abdomen (20%) and lower limb (12.5%) (Table 2).

Most of the victims have single firearm entry wound (52.5%) followed by more than three entry wounds (27.5%) (Table 3). Most of the victims have no exit wound (47.5%) followed by one exit wound (35%).

When case were analyzed according to range of fire, there were a close shots in 30% cases, near shots in 15% cases and distance shots in 55% cases (Tables 4).

Table 1:

Age group (Y)	Male	Female	Total	%
10-20	3	1	4	10
21-30	16	1	17	42.5
31-40	9	1	10	25
41-50	7	0	7	17.5
51-60	0	0	0	0
>60	2	0	2	5
Total	37	3	40	100

Table 2:

Region Involved	No of Cases	%
Head And Face	18	45
Neck	14	35
Chest	22	55
Abdomen	8	20
Upper Limb	11	27.5
Lower Limb	5	12.5

Table 3:

No of Entry Wound	No of Cases	%
1	21	52.5
2	3	7.5
3	5	12.5
More Than 3	11	27.5
No of Exit Wound	No of Cases	%
0	19	47.5
1	14	35
2	5	12.5
3	1	2.5
More Than 3	1	2.5

Table 4:

Distance of firing	No. of cases	%
Close (within the effect of burning, blackening, tattooing)	12	30
Near (within effect of blackening and tattooing)	6	15
Distance (outside the effect of tattooing)	22	55
Total	40	100

Discussion

As compared to other parts of India and western countries, the incidence of firearm injuries is less in Rajkot region. Out of 29365 dead bodies were brought to mortuary of P. D. U. (Govt.) Medical College, Rajkot during the study period, only 40 (0.13 %) deaths were due to firearm injuries, which are lower than findings of Nasrullah M et al [7], PradipkumarKhet al [8], Mirza et al [9], Marri MZ et al [10], Sachan R et al [11], Wintemute GJ et al [12].

Out of total 40 cases, 37 victims were male and 3 victims were female. The male preponderance is in agreement with other authors all over the world [7-10]. Use of firearm to kill female is less.

The most of victims (42.5 %) were in the age group between 21 - 30 years. The reason for this could be attributed to the fact that this age is the most active period in an individual's life in terms of their outdoor activity. This incidence of age in the present study is almost in agreement with the findings of Nasrullah M et al [7], PradipkumarKh et al [8], Mirza et al [9], Marri MZ et al [10], Ahluwalia & Gorea [13], Gupta et al [14], Chanana A et al [15], Agnihotri AK et al [16]

and Fattah et al [17].

In the present series the predominant anatomical site of fatal firearm injury was the chest in 55 % of the cases, followed by head and neck (45%), which is quite high as compared to the findings of Nasrullah M et al [7], PradipkumarKh et al [8], Mirza et al [9], Marri MZ et al [10], Sachan R et al [11], In general the concept of the people is that injury on the chest and head is always fatal. This could be the reason for targeting the chest and head by the assailants in majority of the cases.

67.5 % cases were of rifled injuries and 32.5% were of shotgun injuries. Incidence of death due to firearm injuries in and around Rajkot region were found to be increased since last 5 years. This may be due to easy availability of county made firearms. In India, most of the firearm murder are by unlicensed firearms. As they are generally craft-made and fire single shots; assailants can dispose of them easily and without much loss. They typically cannot be traced to any owner or by ballistic fingerprinting. They are very cheap and are readily available for criminals. Also, obtaining a licensed firearm is difficult. These features make unlicensed firearms ideal for criminal use.

90% cases were homicidal and only 10% cases were suicidal, which is almost in agreement with the findings of Sachan R et al [11]. In all suicidal cases, the victim were male, females are not using firearm to kill self. The site of injuries in suicidal cases was head, face and neck because concept of the people is that injury on these sites is always fatal and easily accessible.

Most of the victims (52.5%) have single firearm entry wound which is almost in agreement with the findings of Sachan R et al [11]. Most of the victims (47.5%) have entry wound only without exit wound, followed by one exit wound (35%).

There were distance shots in 55% cases followed by close shots in 30% cases and near shots in 15% cases, which is in agreement with the findings of Pradipkumar Kh et al [8] (Table 4).

Conclusion

The majorities of the victims were men. The age group of 21-30 years was most affected. The most common targeted body part was the chest. Most of the deaths were due to rifled firearm injuries and homicidal. In all suicidal cases, the victim were male, females are not using firearm to kill self. Death due to firearm injuries is very less as compared to India

and other countries. Incidence of death due to firearm injuries are progressively increasing from 2008, it may be because of modernization in the societies.

Whenever weapon of offence is used to produce death, it is always to be a rifled weapon because certainty of producing death and availability is more as compared to shotgun, which is mostly used for the purpose of killing of birds and animals, so criminals does not use shotgun to produce harm on human being.

Our study and other research on firearm injuries prove that certain changes may minimize mortality. There is a need to decrease the number of firearms used and sold in India. We need to eradicate illicit local community gun manufacturing units. It is obvious that private gun ownership should be strictly limited and the illegal availability should be prevented. Elimination of these illegal countries made firearms is of the utmost importance in order to curb the homicidal firearm fatality rate.

References

1. Murray CJ, Lopez AD. Mortality by cause for eight regions of the world: Global Burden of Disease Study. *Lancet*. 1997; 349(9061): 1269-76.
2. Richardson JD, Davidson D, Miller FB. After the shooting stops: follow-up on victims of an assault rifle attack. *J Trauma*. 1996; 41(5): 789-93.
3. World Health Organization, World report on violence and health: summary. Geneva World Health Organization, 2002.
4. Streib EW, Hackworth J, Hay Ward TZ. Firearm suicide: Use of firearm injuries and death surveillance system. *J Trauma*. 2007; 3: 730-4.
5. Bridges FS, Kunselman JC. Gun availability and use of guns for suicide, homicide, and murder in Canada. *Percept Mot Skills*. 2004; 2: 594-8.
6. NCRB (National Crime Records Bureau). 2009a. Crime in India: 2008. New Delhi: NCRB, Ministry of Home Affairs. <http://ncrb.nic.in/cii2008/home.htm>
7. Nasrullah M, Razzak J A. Firearm Injuries Presenting to a Tertiary Care Hospital of Karachi, Pakistan. *J Inj Violence Res*. 2009 July; 1(1): 27-31.
8. PradipkumarKh, Marak FK, Keisham S, Phom M, Momonchand A. Homicidal Fatal Firearm Injuries. *JIAFM*. 2005; 27(4): 222-225.
9. Mirza CF, Khan AW, Malik L, Malik M, Parveen K. An Autopsy Based Study of Pattern of Firearm Injuries in Karachi, Pakistan. *Emergency Med*. 2013; 3(6):165-167.
10. Marri MZ, Bashir MZ. An epidemiology of

- homicidal deaths due to rifled firearms in Peshawar Pakistan. Journal of the College of Physicians and Surgeons Pakistan. 2010; 20(2): 87-89.
11. Sachan R, Kumar A, Verma A. Frequency of Firearm Injuries, Deaths and Related Factors in Kanpur, India; an Original Study with Review of Literature. International Journal of Medical Toxicology and Forensic Medicine. 2013; 3(3): 88-95.
 12. Wintemute GJ, Teret SP, Kraus JF. The epidemiology of firearm deaths among residents of California [Special Article]. West J Med. 1987 Mar; 146: 374-377.
 13. Ahluwalia BS and Gorea RK. Incidence, Distribution and pattern of firearm injuries, Frontiers of Forensics, Proceedings of Third Indo Pacific Congress on Legal Medicine and Forensic Sciences, Sunithi Printers, Madras. 1990; 129-136.
 14. Gupta AK, Dasgupta SM and Rastogi BL. Study of injuries from firearm in Medicolegal autopsies, 1979, Thesis submitted for the degree of Doctor of medicine (Forensic Medicine), Institute of Medical Sciences, B.H.U, Varanasi.
 15. Chanana A, Gargi J and Gorea RK. An autopsy study of firearm injuries, JFMT. 1990; 7(3-4): 1-11.
 16. Agnihotri AK, Lalwani S, Talreja A and Murty OP. Fatal firearm injuries - 3 yrs review, JFMT. 1999; 16: 47-51.
 17. Fattah A and Hayes William CH Jr. Firearm fatalities - epidemiological and investigation consideration, Legal Medicine Annual, Wecht C Ed, Appleton Centry Crofts. 1974; 47-68.

Red Flower Publication Pvt. Ltd.

Presents its Book Publications for sale

- | | |
|--|---------------------|
| 1. Breast Cancer: Biology, Prevention and Treatment | Rs.395/\$100 |
| 2. Child Intelligence | Rs.150/\$50 |
| 3. Pediatric Companion | Rs.250/\$50 |

Order from

Red Flower Publication Pvt. Ltd.

48/41-42, DSIDC, Pocket-II

Mayur Vihar Phase-I

Delhi - 110 091(India)

Phone: 91-11-45796900, 22754205, 22756995, Fax: 91-11-22754205

E-mail: customer.rfp@rfppl.co.in, customer.rfp@gmail.com, Website: www.rfppl.co.in