



OUTCOME OF FIREARM INJURIES IN TERTIARY CARE IN NORTH INDIA

Surgery

Dr Dinesh Kumar Associate Professor, Department of Surgery, MLN Medical College, Allahabad.

Dr Rajesh Kumar Medical Officer, PMS, U.P.

Dr Sanjay Kumar Divisional Medical Officer, Railway Hospital, Allahabad.

ABSTRACT

Gun is favored weapon for assault and defense. Incidence of firearm injuries increasing due to easy availability of arm and ammunition and deterioration of moral values with lack of proper law enforcement. Most of the patients with firearm injury were belong to age group 21-30 years (31.43%). The maximum numbers of firearm injury noted in male patients 81.43%. In this study majority 65.71% of patients with firearm injury were belongs to rural areas. Most of the firearm victims (45.71%) were arrived to the hospital in 2-3 hours. In this study, majority of cases reaching to the hospital without taking any 1st aid.

KEYWORDS:

Firearm injury, Gunpowder, trauma score, Injury severity.

INTRODUCTION

Since the event of gun powder, gun is favored weapon for assault and defense. Incidence of firearm injuries increasing due to easy availability of arm and ammunition and deterioration of moral values with lack of proper law enforcement.

Abdomen and chest are the favored site for injuries. Firearm injuries are associated with a wide spectrum of injuries that range from minor superficial pellet injuries to devastating soft tissue and visceral injuries. The reason for the wide range of clinical injuries is related to ballistic of the missile, which in turn is dependent on type of arm and ammunition, distance and many other factors.

According to Jonathan W. et al. (1988), knowledge of ballistics is very important to identify the type of bullet and gun used in order to disclose vital information regarding severity and extent of injury and prognosis of patient. Knowledge of commonly use arms and ammunition and their ballistics in a particular region, combined with detail history physical examination and investigation, it is a possible for a traumatologist to predict and appropriate diagnosis of extent of trauma and workout procedures to considered and likely outcome of the management.

AIMS & OBJECTIVES

1. To study and their outcome in tertiary care centre in the civilian population of grade 'A' town of North India.
2. To grade them into various categories based on existing scores model-
 - a) Glasgow coma score, b) Revised trauma score, c) Injury severity score, d) Abbreviation injury score.
3. To identify the prognostic factor based on above mentioned scoring system for such injuries.
4. To produce a measure of probability of survival and predicted death rate in fire arm injury cares on basis of trauma score and injury severity score.

MATERIAL AND METHODS

A complete profile of firearm injuries and their outcome in tertiary care system in north India was done on patients with firearm injuries admitted in the department of Surgery, SRN Hospital, MLN Medical College, Allahabad. The study was carried out over a period of 04 years from July 2012 to August 2016 among 70 patients belongs to 3 age groups i.e. 5-20yrs, 21—30yrs, 31-40yrs.

All those patients who had sustained firearm injuries were regarded as the subjects of study. Patient who were brought dead are died soon during resuscitation were excluded from the study.

All the patients, presenting with firearm injuries were examined in the emergency reception room of SRN Hospital according to ATLS protocol after initial resuscitation with control of airway and breathing and possible haemostasis in the emergency room. They were shifted to emergency ward for further assessment of injuries. Detailed physical

examination with emphasis on location of entry and exit wounds with possible path of missile scorching, blackening, tattooing, evisceration, hemorrhage, sign of peritonitis shock, associated neurological deficits, per rectal examination, Ryle's tube content, signs of thoracic and other injuries were done. Injection Tetanus toxoid, and broad spectrum intravenous antibiotics were administered. After initial resuscitation, the patient was shifted for ultra sonography or CT scan for hemodynamically stable patients.

Pic1: Bullet in abdomen



Pic2: Tattooing & blackening etc.



Pic3: Multiple partial transaction of small bowel



Result

Present study conducted on 70 patients with firearm injury, the following results were found from the study—

- Most of the patients with firearm injury were belong to age group 21-30 years (31.43%).

- The maximum numbers of firearm injury noted in male patients 81.43%.
- In this study majority 65.71% of patients with firearm injury were belongs to rural areas.
- Most of the firearm victims (45.71%) were arrived to the hospital in 2-3 hours.
- In this study, majority of cases reaching to the hospital without taking any 1st aid.
- Abdomen (25.71%) was the most common site involved in fire arm injury followed by chest (18.57%) injury.
- Small bowel (14.29%) was the most common organ involved in abdominal fire arm injury followed by spleen (5.71%) and kidney (4.29%).
- Majority of associated injury were seen over extremities (62.86%) followed by face (14.29%), head (11.43%), and neck (8.57) region. The duration of stay in hospital was longer in patient with associated injuries.
- Most of patient 85.71% had revised trauma score more than eight. We have noted that higher the score better the prognosis.
- Out of 70 patient 25 (35.71%) recovered without any complication and expired 7 (10%) patient due to multiple organ injuries.
- Wound infection common complication in 5 (7.14%), pelvic abscess 2 (2.86%) and fecal fistula seen in one patient.

z

ORGAN INVOLVED IN ABDOMINAL FIRE ARM INJURY

Organ involved	Number	Percentage (%)
Stomach	2	2.86
Small bowel	10	14.29
Spleen	4	5.71
Spleen & Kidney	3	4.29
Diaphragm	1	1.43

References:

1. Andrede-Alegre R, Moreno A., Ruiz Valdes L. (Penetrating cardiac trauma). (Spanish)Revista Medica de Panama 20 (1-2):38-44,1995 Jan-May.
2. Beverland DE, Rutherford WH. An assessment of validity of the injury severity score when applied to gunshot wounds. 15 (1) 19-22, 1983, Jul.
3. Gary J. Ordog, Jonathan Wasserberger, Subramaniam B. Shotgun Wound Ballistics. The Journal of trauma, 1988, 28(5) 624-31.
4. Nelson Awori: Primary surgery: 2000; 172-191.
5. Norbert Z, Norbert A, (Unusual case of firearm injury) (Hungarian) Morphologiai Es Igazsagugyi Orvosi Szemle. 16 (1): 52-3, 1976 Jan.