

## Original Research Paper

# A Prospective Study of Injury Pattern in Victim of Assault Attended in South Mumbai Government Hospital

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### Abstract

Assault was the main crime since long back from history. The present study was conducted in accident and emergency Department of Grant Medical College and Sir JJ Hospital located in south Mumbai over the period of two years from October 2011 to September 2013. Total 1288 cases of assault observed out of which 1100 were male (85.4%) and 188 were female (14.6%). The age group which was maximally affected in case of male and female was same i.e. 21-30 year. In males majority of injuries were simple in nature 803 (73%). While in females no grievous injury noted.

Most commonly body part involved in assault was head face and neck 959 (47.92%). The commonest injury in male victim was lacerations 543 (49.4%). The weapon of assault in male victims was hard and blunt object in maximum 51.4% while in females 45.2% were body parts such as fist and kicks. Out of 272 grievous injuries the 31.2% injuries were caused by hard and blunt weapons. Thorough examination and interpretation of injury is of vital medico-legal importance and plays crucial role for judiciary to deal with interpersonal violence.

**Key Words:** Assault, Grievous, Laceration, Weapon

### Introduction:

According to Section 351 of the IPC 'assault' is defined as 'every attack or threat or attempt to apply force on the body of another in a hostile manner'. [2]

Assault cases were dealt in casualty department for primary treatment purpose, doing medico-legal work and for certification purpose. The injury certificate is issued on the request of investigating police officials and it will be important evidence in court of law.

Assessment and interpretation of injury depends on a good history, an appropriate physical examination and recording the findings contemporaneously, clearly, and unambiguously. Such documentation (whether notes, body charts, or computer records) may be reviewed by other doctors, legal advisers, and the courts. Based on the queries generally faced by casualty medical officer, the present work is aimed to study the medico-legal aspect of clinical medico-legal cases in casualty with special reference to assault cases.

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### Material and Methods:

Present study was conducted in casualty of tertiary care government hospital Mumbai which is working round the clock and where continuous service for medico-legal case is rendered. The cases which were brought to casualty and which were of medico-legal nature and which were registered as cases of EPR (Emergency Police Register) were attended in casualty.

The detailed examination of assault cases was done after taking consent. The documentation in register done by casualty medical officer was reviewed. Total 1288 cases included in study. The history was obtained from patient, accompanying people and relatives and or from accompanying police by taking proper informed consent.

The injuries were examined and documented in detail with respect to its situation, size, nature, causative factor, probable weapon and it was correlated with the history with specific attention to its age and nature of injury.

### Observations and Results:

The study showed that in assault victims there were male preponderance (85.4%) over females (14.6%). (Table 1) While the majority of male 509 (46.3%) and female 154 (81.9%) victims were from same age group i.e. between 21- 30 years. (Table 2)

Out of total 2001 injuries inflicted over all victim's body, maximum 646 (32.28%) injuries

were lacerations followed by abrasions 402 (20%). Contusions comprised 298 (14.9%) injuries while swelling present of different body parts were 259 (12.9%). Incised injuries were 239 (12%) and stab injuries were 68 (3.3%). There were three burn (0.2%) injuries and one firearm injury noted. (Table 3)

Laceration was commonest injury in both male and female. In male victims there were 543 (49.4%) lacerations followed by abrasion in 368 (33.5%). In female victims laceration were 103 (54.8%), followed by contusion in 85 (45.2%) cases.

In this study collectively these lacerations observed mainly 68% (n=441) on head face and neck region, followed by 103 (16%) on lower limbs. (Fig.1) Total 1288 assault cases observed in this study, out of which grievous injury were 973 (75.5%) and 272 (21.1%) were simple in type. In 43 injuries (3.3%) opinion reserved pending for further investigations. (Table 5)

In our study in 803 (73%) males majority of injuries were simple in nature. While in 272 (24.7%) males injuries were grievous in nature. In females there was no grievous injury at all. And in 170 (90.4 %) injuries were simple in nature. But in females 18 (9.6%) cases opinions regarding severity of injury were reserved pending. [Fig 2]

In present study hard and blunt weapon used in maximum cases 634 (49.2%) assault cases followed by body part in 343 (26.6%) cases while with sharp weapon in 222 (17.2%) cases. Pointed weapons used in 68 (5.3%) cases and other miscellaneous weapon including firearm weapon used in 21(1.6%) assault cases. (Table 6)

When hard, blunt weapons and sharp weapons both used by assailant causes 85 (31.3%) grievous injuries each out of total 272 grievous injuries. In male victims the hard and blunt weapon used in 565 (51.4%) cases. The body parts like fist, kick were used in 258 (23.5%) males. In female victims the body parts were used in 85 (45.2%) including fist and kicks. The hard and blunt weapons used in 69 (36.7%) females. (Table 7)

Abrasions were mainly located in head face and neck region 136 (34%) cases as compared to 67 (17%) on trunk, 103 (25%) on upper limbs and 96 (24%) on lower limbs. No abrasion was found on back. Contusions mainly observed over head face and neck region 138 (46%) followed by 91(31%) over upper limbs, 33 (11%) over back, 19 (6%) over lower limbs and 17 (6%) over anterior trunk.

The incised wound found in assault cases located mainly located over upper limbs i.e. 103 (43.1%) followed by head face and neck in 85 (35.56%) injuries, over lower limbs in 34 and over anterior trunk in 17 injuries.

34 (40%) fractures were of upper limb bones, followed by 17 (20%) lower limbs and 17 (20%) of facial bones. Stab injuries were mainly located over anterior trunk i.e. 51 (75%) and over back in 17 (25%) cases. No stab injury was noted over face, over upper and lower limbs. Single firearm injury was observed over face. In present work majority of injuries were observed over head, face and neck region. (Fig.3)

### **Discussion:**

In study period of two years from October 2011 to September 2013, total cases attended in casualty were 6870 out of which 1288 EPR (Emergency Police Record) cases were registered as medico-legal cases.

Frequency of male and female victims of assault in the present study was coincides with other studies. [9, 10, 13, 15, 16, 20, 21] The male preponderance is also similar in the studies of Ranney et al and Hofnera et al. [18,19] The reason for predominance was due to more aggressive behavior and more exposure to environment and assault.

Common Age group of victims of assault in the present study coincides with the studies of Honaken et al [4], Farooqui et al [21] and Bhullar. [17] Some variations were seen when compared with studies of Albrektsen et al [8], Hocking et al [9] and Subba et al. [20] Both male 509 (46.3%) and female 154 (81.9%) affected victims of the assault were of young and productive age group between 21- 30 years.

Out of these injuries lacerations were more commonly noted 646 (32.28%). These findings were inconsistent with similar studies as in Fothergill et al [10] major injuries were contusions (53%) and Howe et al [14] laceration 21%. The reason for variation could be because of difference in nature and aggressiveness of assailant. Also the weapons used for assault by assailant may be differ in other similar studies.

In Shepherd et al [5] the majority of injuries in male victims were laceration which was consistent with our study but the major injuries in female victims were hematomas which was inconsistent with present work.

In this study injuries present on body of assault victim were classified as simple or grievous as per section 320 IPC. [2] The majority of the injuries 973 (75.5%) in our studies were simple in nature. In males 272 (24.7%) injuries were grievous in nature. In females there was no

graveous injury at all. This gender wise difference in severity of injury is significant one (P value <0.001). Probably its because of defensive nature of female in assault.

#### **Type of Weapon:**

In majority of cases hard and blunt weapons like lathi, bamboo, stone, iron rod etc. were used by assailant. No specific weapon was used but the victims were assaulted by fist and kick by the assailant and used their body parts as weapons in 343 (26.6%) cases. In one case firearm weapon was the weapon of assault.

In present study the percentage of use of body part by assailant during assault were consistent with other studies. [16, 20] However injuries sustained by sharp weapon were (17.2%) inconsistent with studies of Butchart et al and Zarger et al. [12, 16]

Out of the male victims 565 (51.4%) sustained injuries by hard and blunt weapon. One male was injured by firearm weapon. In case of female victims the majority weapons used for assault purpose were body parts 85 (45.2%) including fist and kicks.

The weapon which is used for assault depends on its availability, the aggressiveness and intention of assailant. Hard and blunt weapon was commonly used in male and body parts in female victims. It may be due to; the assault on female by known person, domestic violence and quarrel with neighbor.

#### **Type of Weapon and Seriousness of Injury:**

Out of 272 grievous injuries 85 (31.2%) caused by hard and blunt weapon and 85 (31.2%) by sharp weapon. Both these weapons in combination cause 170 (62.6%) grievous injuries which were major contribution.

All the cases in which victim sustained injuries by pointed weapon were grievous injuries and no simple injuries were noted. In domestic and other assault cases body parts such as fists, kick etc. causes 34 (12.4%) grievous injuries out of 272. Maximum injuries were caused by hard and blunt weapons and sharp weapons. In all 1288 assault cases majority of injuries were lacerations. Out of 2001 injuries lacerations were 441 (32.28%).

These lacerations observed mainly observed over head face and neck region i.e. in 441 cases (68%), followed by 103 (16%) on lower limbs. In present work majority of injuries were observed over head, face and neck region. The face is a particular target in assault, though more so in men than in women.

These findings were consistent with other studies like Shepherd & Shapland et al [11] who noted facial injuries were common with respect to laceration, contusion and fractures.

In the study of Fothergill & Hashemi et al [10] they noted half of all male injuries and 42% of female injuries were located over face.

Kjaerulff et al [7] noted Sixty-five percent of the lesions were in the head and neck region, 13% over trunks, 18% in the upper extremities and 5% in the lower extremities.

In the study of Howe & Crilly et al [14, 15] the commonest site of injury was to the neck, face and throat (55%). Subba et al [20] noted most frequent site was head and neck (57.06%), followed by upper limbs (17.74%).

#### **Conclusions:**

Out of 6870 medico-legal cases observed in casualty over study period maximum 37.5% were of assault cases. There was male preponderance in assault cases with male and female ratio was 5.85:1.

The age group which was maximally affected in case of male was 21-30 years and same in case of female. Most commonly body part involved in assault was head face and neck 959 (47.92%). Grievous injuries sustained during assault were seen in 24.2% male victims.

While in females no grievous injury noted. The weapon of assault in male victims was hard and blunt object in maximum 51.4% while in females 45.2% were body parts such as fist and kicks.

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**Table 1: Gender wise Distribution of Total Assault Cases**

Gender	Frequency	Percentage
Female	188	14.6
Male	1100	85.4
Total	1288	100

**Table 2: Age and Sex Wise Distribution**

Age Grp (yrs)	SEX		Total (%)
	Female (%)	Male (%)	
11-20	0 (0)	34 (3.1)	34 (2.6)
21-30	154 (81.9)	509 (46.3)	663 (51.5)
31-40	34 (18.1)	423 (38.5)	457 (33.5)
41-50	0 (0)	117 (10.6)	117 (9.1)
>50	0 (0)	17 (1.5)	17 (1.3)
Total	188 (100)	1100 (100)	1288 (100)

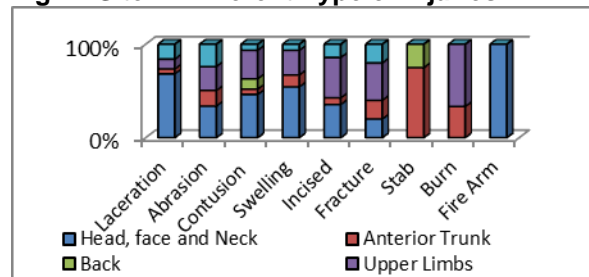
**Table 3: According to Type of Injury Inflicted**

Type of Injury	Frequency	Percentage
Laceration	646	32.28
Abrasion	402	20
Contusion	298	14.9
Swelling	259	12.9
Incised	239	12
Fracture	85	4.2
Stab	68	3.3
Burn	3	0.2
Fire Arm	1	0.1

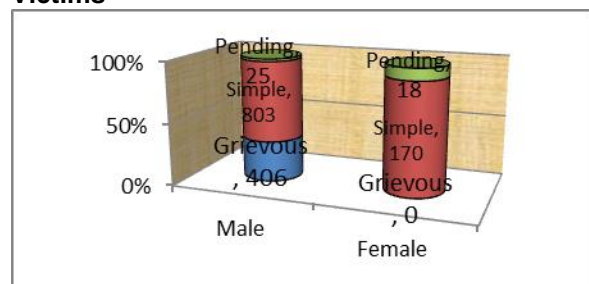
**Table 5: Type of Injury According to Seriousness**

Injury	Frequency	Percentage
Simple	973	75.5
Grievous	272	21.1
Pending	43	3.3
Total	1288	100

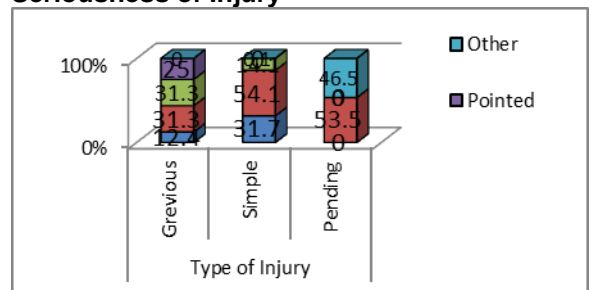
**Fig. 1: Site in Different Type of Injuries**



**Fig 2: Severity of Injury in Male and Female Victims**



**Fig. 3: Type of Weapon used vis-a-vis Seriousness of Injury**



**Table 4: Gender wise Distribution of Type of Injury**

Type of Injury	SEX		Total (%) (n=1288)
	Female (%) (n=188)	Male (%) (n=1100)	
Abrasion	34 (18.1)	368 (33.5)	402 (31.2)
Contusion	85 (45.2)	213 (19.4)	298 (23.1)
Laceration	103 (54.8)	543 (49.4)	646 (50.25)
Incision	17 (9)	222 (20.2)	239 (18.6)
Stab	0 (0)	68 (6.2)	68 (5.3)
Fracture	0 (0)	85 (7.7)	85 (6.6)
Burn	1 (0.5)	2 (0.2)	3 (0.2)
Fire Arm	0 (0)	1 (0.1)	1 (0.1)
Swelling	0 (0)	259 (23.5)	259 (20.1)

**Table 6: Type of Weapon used for Assault**

Weapon	Frequency	Percentage
Hard & Blunt	634	49.2
Body Parts	343	26.6
Sharp	222	17.2
Pointed	68	5.3
Other	21	1.6
Total	1288	100

**Table 7: Gender wise Use of Different Weapon**

Weapon	Gender		Total (%)
	Female (%)	Male (%)	
Body Parts	85 (45.2)	258 (23.5)	343 (26.6)
Hard & Blunt	69 (36.7)	565 (51.4)	634 (49.2)
Sharp	17 (9)	205 (18.6)	222 (17.2)
Pointed	0 (0)	68 (6.2)	68 (5.3)
Other	17 (9)	4 (0.4)	21 (1.5)
Total	188 (100)	1100 (100)	1288 (100)

Pearson's Chi Square value-129.9, df 4, P value- < 0.0001,