

## Original Research

### Evaluation of traumatic maxillofacial injuries in population

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#### ABSTRACT:

**Background:** Maxillofacial injuries are frequent cause of presentations in an emergency department. The present study was conducted to evaluate traumatic maxillofacial injuries in population. **Materials & Methods:** 105 patients of maxillofacial trauma of both genders were included in the study. Parameters such as cause of trauma, and nature of the injury such as injuries to teeth, injuries to the mandible, injuries to the maxilla, injuries to zygomaticomaxillary complex (ZMC), temporomandibular joint, and injuries to soft tissues. History of alcohol intake etc. was also recorded. **Results:** Out of 105 patients, males were 70 and females were 35. Etiology of trauma was road traffic accident in 75, domestic violence in 20, industrial accident in 6 and others in 4 cases. The difference was significant ( $P < 0.05$ ). Common injuries were dentoalveolar fractures in 22, mandibular in 40, zygomatic- temporal in 15, TMJ in 6, maxillary in 17 and soft tissue injuries in 5 cases. The difference was significant ( $P < 0.05$ ). **Conclusion:** Road traffic accident was the most common cause of trauma and dentoalveolar fracture was most common among all sites.

**Key words:** Road traffic accident, Trauma, mandible

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#### INTRODUCTION

Maxillofacial injuries are frequent cause of presentations in an emergency department. Varying from simple, common nasal fractures to gross comminution of the face, management of such injuries can be extremely challenging.<sup>1</sup> Injuries of this highly vascular zone are complicated by the presence of upper airway and proximity with the cranial and cervical structures that may be concomitantly involved. While, with non- maxillofacial injuries, a protocol for management of airway, breathing, and circulation is relatively well established.<sup>2</sup>

Victims of trauma suffer injuries ranging from small lacerations to permanent disfigurement or even loss of life.<sup>1</sup> Maxillofacial trauma causes injuries to skeleton components, dentitions as well as soft tissues of the face and frequent cause of presentations in an emergency department. Varying from simple, common nasal fractures to gross comminution of the face, management of such injuries can be extremely challenging.<sup>3</sup> Road traffic accidents involve people of all ages, but most are young adults. The incidence is increasing because the population is growing, more people are using motorised vehicles, and conditions on the roads are deteriorating.<sup>4</sup> India experience 20

times more deaths by road traffic accidents than in developed countries: 8 people are killed/100 vehicles, whereas in developed countries, one person is killed/1000 vehicles. Alcohol is an important factor in these accidents and it may be involved in up to half of those that are serious.<sup>4</sup> The present study was conducted to evaluate traumatic maxillofacial injuries in population.

#### MATERIALS & METHODS

The present study comprised of 105 patients of maxillofacial trauma of both genders.

Ethical clearance has been taken from institution before the commencement of study. All patients who gave their written consent were included into the study.

Particulars such as name, age, gender etc. was recorded. Parameters such as cause of trauma, and nature of the injury such as injuries to teeth, injuries to the mandible, injuries to the maxilla, injuries to zygomaticomaxillary complex (ZMC), temporomandibular joint, and injuries to soft tissues. History of alcohol intake etc. was also recorded. Results thus obtained were subjected to statistical

analysis. P value less than 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Total- 105		
Gender	Number	P value
Male	70	0.01
Female	35	

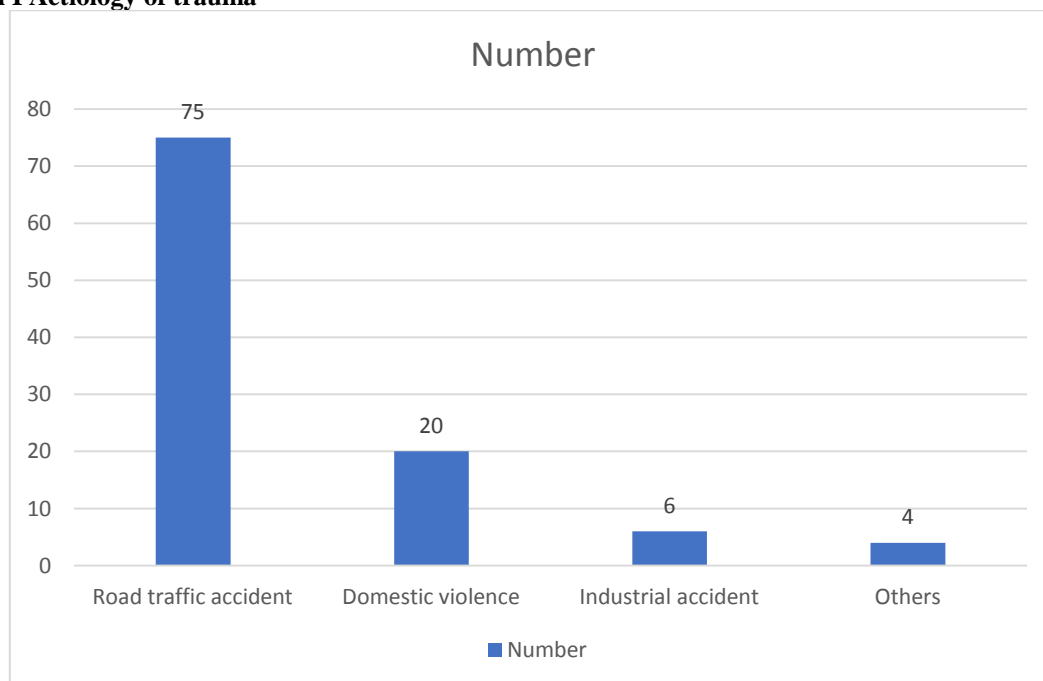
Table I shows that out of 105 patients, males were 70 and females were 35.

**Table II Aetiology of trauma**

Cause	Number	P value
Road traffic accident	75	0.01
Domestic violence	20	
Industrial accident	6	
Others	4	

Table II, graph I shows that etiology of trauma was road traffic accident in 75, domestic violence in 20, industrial accident in 6 and others in 4 cases. The difference was significant (P< 0.05).

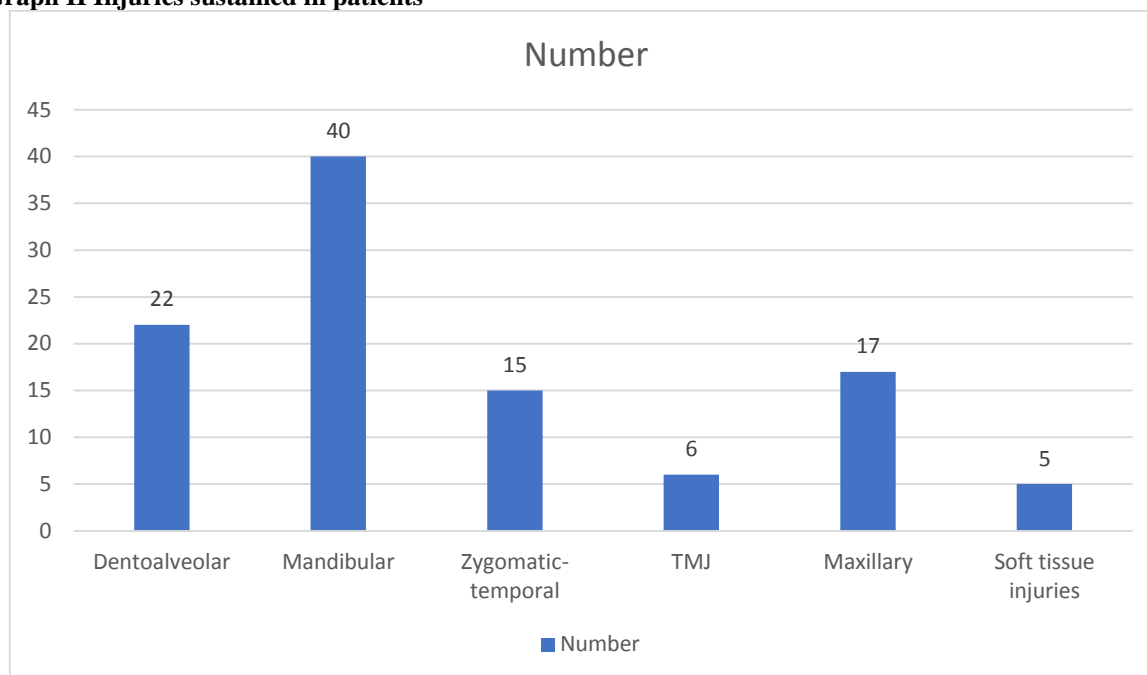
**Graph I Aetiology of trauma**



**Table III Injuries sustained in patients**

Fracture	Number	P value
Dentoalveolar	22	0.034
Mandibular	40	
Zygomatic- temporal	15	
TMJ	6	
Maxillary	17	
Soft tissue injuries	5	

Table III, graph II shows that common injuries were dentoalveolar fractures in 22, mandibular in 40, zygomatic-temporal in 15, TMJ in 6, maxillary in 17 and soft tissue injuries in 5 cases. The difference was significant (P< 0.05).

**Graph II Injuries sustained in patients****DISCUSSION**

Trauma is an inevitable part of human life, which is also the 5th leading cause of death and disability worldwide and accounts for approximately five million deaths annually. It can be caused by natural disasters or by human-made accidents. The face is the most exposed part of the body and is particularly prone to injury, and these injuries are often associated with psychological trauma.<sup>5</sup> The epidemiology of maxillofacial injuries varies between and within countries and depends on social conditions, standards of traffic management, and the nature of the terrain.<sup>7</sup> It has also varied over time. Road traffic accidents have been reported to be the main cause of serious maxillofacial injuries in many studies worldwide.<sup>6</sup> The number of road traffic accidents involving young adults may be high because people in this age group sometimes drive aggressively and carelessly, and may want to show off. Many use vehicles to get to work, social activities, or college.<sup>7</sup>

In present study, out of 105 patients, males were 70 and females were 35. Leles et al<sup>8</sup> identified the epidemiological profile and risk factors associated with maxillofacial trauma treated at a referral emergency hospital including 530 patients with maxillofacial trauma, 76% male, with a mean age of 25.5±15.0 years. The main causes of trauma were traffic accidents (45.7%) and physical assaults (24.3%), and differences in etiological factors were identified according to gender ( $p<0.001$ ). The distribution of patients according to age and etiology showed significant differences for traffic accidents ( $p<0.01$ ), physical assaults ( $p<0.001$ ), falls ( $p<0.001$ ) and sport injuries ( $p<0.01$ ). In the multinomial logistic regression analysis ( $R^2 = 0.233$ ;  $p<0.05$ ), age was associated with injury in traffic accidents and falls

( $p<0.01$ ), sports-related accidents were associated with males ( $p<0.05$ ), and alcohol consumption with assaults and traffic accidents ( $p<0.001$ ). Facial soft tissue lesions were found in 98% of patients and facial fractures in 51%.

We found that etiology of trauma was road traffic accident in 75, domestic violence in 20, industrial accident in 6 and others in 4 cases. Depending on the mechanism of trauma, different maxillofacial injury patterns may occur.<sup>9</sup> Nasal and zygomatic-orbital complex fractures are more likely in traffic accidents and physical assaults. Few cases of nasal fractures are reported in maxillofacial trauma studies, since patients are usually referred to otorhinolaryngologists and plastic surgeons.<sup>10</sup> Traffic accidents were also the main cause of dentoalveolar fractures, especially in bike accidents when security mechanisms are usually neglected. Furthermore, the most common site of mandibular fractures in assault victims was the mandibular angle, and the greater incidence of condyle fractures was observed in traffic accidents. Frontal and maxillary fractures are usually associated with high-energy traumas, as in traffic accidents.<sup>11</sup>

Alcohol consumption is known to increase crash likelihood, due to reflex reduction and, especially in young people, the abuse of velocity and neglect of safety measures.<sup>12</sup> Alcohol consumption, cell phone use, drowsy or aggressive driving, and driving under the influence of drugs are all important, but preventable, causes of traffic accidents, injuries and deaths. There has been a dramatic, and continuing, drop in alcohol-related traffic crashes, but much more needs to be done to prevent drunk-driving.<sup>13</sup>

We found that common injuries were dentoalveolar fractures in 22, mandibular in 40, zygomatic-temporal in 15, TMJ in 6, maxillary in 17 and soft

tissue injuries in 5 cases. Prasad et al<sup>14</sup> conducted the retrospective study on 153 maxillofacial trauma patients. Type, cause, and age-wise distribution of the injuries and the influence of alcohol on the injuries were assessed. Majority of the victims were males and from 20 to 30 years age group. Road traffic accidents were found to be the major cause (74%) and out of that 67% occurred under the influence of alcohol consumption and 85% cases were grievous. Injuries to teeth were found more common in the younger age group, and injuries to soft tissue were found more common in elderly persons. Influence of alcohol has been found to have a strong association with the severity of injuries.

### CONCLUSION

Author found that road traffic accident was the most common cause of trauma and dentoalveolar fracture was most common among all sites.

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