



MAXILLOFACIAL FRACTURES;

ASSESSMENT OF CONCOMITANT INJURIES

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INTRODUCTION

There has consistently been an unusual augmentation of human preface to influential operators, assemble them active center of different type of injury, including maxillofacial fractures. Facial trauma have a multiple etiologic factors, i.e. lane auto collisions¹, where bike accidents are massive sectors², sports injuries^{3,4}, interpersonal savagery^{5,6}, fall from heights.^{7,8}

Due to ecological, social & financial variables, causes of facial trauma differ around the globe,⁹ consequently epidemiological surveys are used to smash the incidence & pattern of etiology, seriousness & recurrence of maxillofacial and dental injury.¹⁰ In Europe, Portugal has increased prevalence of injury incident & death rate. As in the 2010 Statistical Year book of Portugal (from the institute of National Statistics), a summation

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ABSTRACT... Background: The incidence of maxillofacial fractures is greater in Pakistan. This research has the crucial aim of achieve and indexing maxillofacial injuries in poly trauma patients. **Objectives:** To assess the concomitant injuries with maxillofacial trauma. **Study Design:** Descriptive case series. **Setting:** The department of Emergency and Oral & Maxillofacial Surgery, Liaquat University of Medical and Health Sciences, Jamshoro. **Period:** Jan 2014 to Dec 2015. **Methods:** Total 489 patients of both genders, aged ≥ 20 years were included. **Results:** more injuries 359 (73.40%) occurs among the age of 20-39 years. The mainly documented etiologic factor for injury was RTA with 69.38%, followed by assault (16.76%), fall (11.04%) and sports injury was (2.87%). With respect to related injuries, a sum of 48 patients introduced head injuries and other concomitant injuries. The most common fracture noted was mandible 296 (60.53) followed by maxillary fractures 191 (39%), Zygomatic bone complex fractures 65 (13.29%), Naso-orabital ethmoid fractures was 44 (8.99%), majority of patients 186 (38.0%) were arrived in morning time followed by 176 (35.9%) in evening, 88 (17.9%) in afternoon and 39 (7.9%) in night, regarding the day's most patients came on first working day that was Saturday 142 (29.0%). Regarding hospital mortality, 11 (2.2%) people died within less than two days after admittance. **Conclusion:** The results of this study may support the oral surgeons to rule out other injuries at the time of primary survey and may have a key role in awareness of individuals in prevention of road traffic accidents.

Key words: Concomitant, Assessment, Poly trauma, Mortality

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of 35,426 road auto collisions were traced, 424 of them were lethal.¹¹ A few written researches regarding modern nations reveal that hit/strike as another factual reason.¹² The face presumes a critical part in the in the body & consequently is prone to strikes, which commonly fetch hopeless troubles & deformation.¹³

Apart from facial fractures, the occurrence of concomitant fractures of others bones of body is important to be considered e.g. cranium, upper & lower limb injuries, chest injuries & pelvic bone injuries can happen beside facial injuries. They are subject to injury from high & low energy blow from RTAs, falls, sports, assaults, etc, & almost every age groups are subjected to it.¹⁴ Multiple fractures pattern serves as neuro- protective function, permitting indulgence of energy as a result transmission of fewer lingering injury to

skull.¹⁵

Total injuries of human frame were accounts for 9% of world death & 12% of world load of disease in year 2000.¹⁶

The reason for this 2-year study was to investigate the facial fractures associated with other skeletal injuries treated at the Emergency & Oral & Maxillofacial department of Liaquat University Hospital, Hyderabad, with particular accentuation on age, assorted qualities and occurrence.

MATERIAL AND METHODS

This descriptive cross sectional survey was carried out in department of Emergency and Oral & Maxillofacial Surgery, Liaquat University Hospital Hyderabad
Total 489 patients were enrolled in this study from Jan 2014 to Dec 2015.

All the patients presenting in emergency room or directly at Oral & Maxillofacial Surgery department with trauma were examined by team members.

Maxillofacial fractures alone or in combination with other fractures of body were integrated in this survey. A complete history was taken from the patient or the attendant & questionnaire filled for every patient. At least two diagnostic radiographs Plane X-rays i.e. Orthopantomogram (OPG), postero-anterior view face, paranasal sinus view (PNS), right and left lateral oblique view of the mandible) was done for each case & advance imaging like computed tomography (CT scan) was taken wherever required.

Related injuries were included as head, thorax, cervical, spinal, lumbar, stomach, pelvic, upper & lower appendages, where as fracture of face s were assembled into maxillary, NOE, zygomatic bone, mandible and dentoalveolar.

Data were analyzed in SPSS version 20.0. The frequency and percentages was computed for qualitative variables, like gender, causes, & associated injuries. Mean± standard deviation was computed for qualitative variables, like

age. No inferential test was applied because of descriptive statistics.

RESULTS

Table 1 encloses point of attention on the patients. The age range reach over from 20 to 60 years with mean age, SD 32.43 ± 4.5 years. The common male-female ratio was 2.5:1.

More injuries 359 (73.40%) occurred among the age of 20-39 year age. Mainly documented etiologic factor for injury was RTA with 69.38%, followed by assault (16.76%), fall (11.04%) and sports injury was (2.87%). As shown in table-I.

Baseline characteristics	Number	Percentage
Age in years, Mean + SD (Range)	32.43 ± 4.5 years	
Age in groups		
20 to 30	197	40.20%
31 to 40	162	33.20%
41 to 50	81	16.56%
51 to 60	49	10.02%
Mode of injury		
RTA	339	69.32%
Assault	82	16.76%
Fall	54	11.04%
Sports	14	2.87%

Table-I. Baseline characteristics of patients (n = 489)

With respect to associated injuries, a sum of 48 patients introduced head injuries and other concomitant injuries as described in Figure-1.

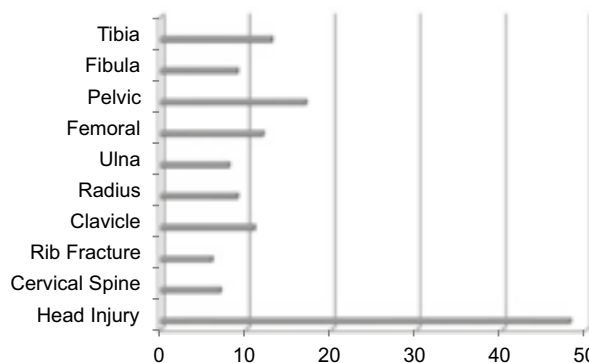


Figure-1. Distribution of Concomitant Injuries

A total of 489 patients with maxillofacial fractures were inspected. In this most common fracture

noted was mandible 296 (60.53) followed by maxillary fractures 191 (39%), Zygomatic bone complex fractures 65 (13.29%), Naso-orbital ethmoid fractures was 44 (8.99%) as shown in Figure-2.

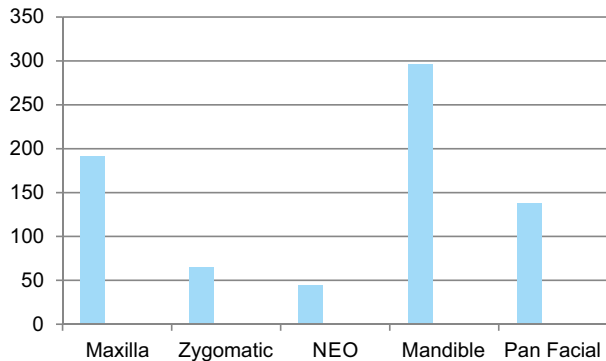


Figure-2. Distributions of Maxillofacial Injuries

Among the 489 patients, majority of patients 186 (38.0%) were arrived in morning time followed by 176 (35.9%) in evening, 88 (17.9%) in afternoon and 39 (7.9%) in night, regarding the day’s most patients came on first working day that was Saturday 142 (29.0%). Regarding hospital mortality, 11 (2.2%) people died within less than two days after admittance. As shown in table-II.

Parameters	Number	Percentage
Hospital arrival		
Morning	186	38.0%
Afternoon	88	17.9%
Evening	176	35.9%
Night	39	7.9%
Days		
Saturday	142	29.0%
Sunday	34	6.95%
Monday	93	19.0%
Tuesday	39	7.9%
Wednesday	44	8.9%
Thursday	93	19.0%
Friday	44	8.9%
Mortality	11	2.2%

Table-II. Distribution of patients according to time, day and mortality

DISCUSSION

Epidemiologically, the degree of patients with facial trauma is similar to those of diverse genuine multi-injuries. Present survey ascertains 48 (34%)

patients with cranium injury & concluded to have severe head injuries & a summation of 11 (2.2%) people didn’t survive. A research done by Zandi M et al, in which 23.3% patients have skull injuries related to facial fractures and the frequent cranium injury type was concussion, followed by cerebral contusion and skull fractures,¹⁷ and study conducted by Grant AI clearly indicated Incidence of brain injury was 67% overall which is not similar with results of our study.¹⁸

It is hard to separate the mortality & dreadfulness of maxillofacial fractures associated with it. The overriding parts of disseminated studies have shown high proportion in adolescent.¹⁸

In current study, congregation in the age of 20-39 years was the mainly subjective of maxillofacial injury but in a equivalent study, the author told similar characteristics, with the a good number as often as probable predisposed age congregation being 21-30 years.^{19,20,21}

The etiology of maxillofacial & concomitant injuries in our study results clearly indicated RTA was the widespread causative factor followed by assaults, which were similar with the studies conducted in different parts of world.^{15,19,22,23}

Maxillofacial injuries are barely fatal; however these injuries certainly cause physical/psychological stress to the patient.¹⁶

Maxillofacial injuries might comprise upper third, middle third, and/or lower third of the face, inclusive or exclusive of soft tissue injury & most of the times dentition possibly will also have injuries i.e. extrusion, intrusion, luxation or tooth crown fracture. Mainly, common site of fracture is mandible followed by maxilla, isolated zygomatic bone and nasal bone amongst maxillofacial injuries. The basis for mandible fracture to be most frequent is because of its position; prominence & mobility. Similar findings were found in the present study with mandible being involved in 60.5% of the patients, and these results similar with the studies done by Khan M et al, Ahmed S et al, Premchand P et al, and Ahmed S et al.^{15,19,24,25}

Beside facial injuries, it is imperative to diagnose concomitant injuries & classify six organ systems associated to these problems: (1) brain, (2) chest, (3) spine (4) abdomen, (5) pelvis, (6) limbs. There are significant statistical variation in the incidence of injuries allied amongst gender, age group, trauma mechanism, & kind of fracture. The mechanism of these injuries might be via automobile accidents, falls, sports, interpersonal violence & victims strike with matter.²⁶

Hands & arms are generally used by patients during trauma as defense against facial injuries, whereas thorax & legs are typically directly impacted in car accidents or falls.²⁶

Accident capable to fracture facial skeleton is also expected to have velocity & allocation of causing other injuries in the body i.e. limbs. The relationship of lower extremities fractures compared to upper extremities was often implicated. comparable results were achieved by Premchand P et al²⁴, Thoren H et al²⁷ and Khan M et al¹⁵ Beogo R et al,²⁸ nonetheless this is not sustained by different other international and national studies which illustrate that limb fractures are not as much coupled with maxillofacial injuries. This summit to the truth; that was depends upon related injury type & differs with variation in blow and etiology of trauma.^{29,30}

CONCLUSION

In conclusion, current survey provides pertinent information on patterns of maxillofacial related with other skeletal injuries in explicit inhabitants & plays a part in numerous morbidity & mortality cases. The results of this study may support the oral surgeons to rule out other injuries at the time of primary survey and may have a key role in awareness of individuals in prevention of road traffic accidents.


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AUTHORSHIP AND CONTRIBUTION DECLARATION

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2	Dr. Altaf Ahmed Talpur	Concept & Study Design	
3	Dr. Abdul Rauf Memon	Discussion, Refereneces	
4	Dr. Priya	Intro, Abstract & Proof Reading	