

# Incidence and Pattern of Faciomaxillary Fractures in Adults: A 4 year Retrospective Study at Al-Ameen Dental College Bijapur, Karnataka.

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## Abstract:

Face is the most prominent and ethically important structure of human body. Owing to increase in the population and number of vehicles the incidence of maxillofacial injuries has increased worldwide. Although so many studies have been done on the pattern and treatment planning of maxillofacial injuries worldwide, this is first of retrospective studies done in our region with emphasis given on etiology and pattern of fractures.

**Key words:** Fractures, Incidence, Etiology, Pattern.

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## INTRODUCTION

The face, being the most exposed part of body is vulnerable to trauma. The main cause facial bone fractures worldwide are Road Traffic Accidents, assaults, sports and fire arm injuries. Clearly etiology is expected to influence degree and injury sustained<sup>1</sup>. Maxillofacial region is injured the most common facial fractures includes mandible, nasal bone followed by Zygomatic, maxilla and alveolar processes<sup>2</sup>. Over the past 50 years significant developments has been made in the treatment of maxillofacial trauma patients. This study may provide valuable data for etiology, incidence, and type of maxillofacial injuries.

## MATERIALS AND METHODS:-

**Inclusion criteria:-** All patients aged from 18 years to 65 years of age and either sex presenting with

maxillofacial trauma to department were included in the study.

**Exclusion criteria:-**

1. Age < 18 years
2. Patient record with incomplete data.

In this study a total of 500 patients were evaluated from 2014 to 2018. A number of parameters including age, gender, cause of injury, site of fracture, and type of injury were assessed. A detailed history of patients was taken from record books then specially required basic and specific investigations that were present in record books such as OPG, CT Scan, 3-D CT, PNS view were considered and recorded. The fractures were classified according to standard nomenclature and pattern of maxillofacial injuries were compiled according to age, sex, etiology, site, frequency, The data so collected was

subjected suitable statistical analysis test. Like chi square test, and t - test.

### Results:-

There were 194 mandibular, 128 maxillary, 78 zygomatic complex , 72 mid face, 84 combined mandibular and maxillary , 8 nasal bone, 14 NOE fractures. **Table-I**

**Table -I:- Fracture Distribution**

TYPE OF FRACTURE	NO. OF CASES	PERCENTAGE
MANDIBULAR FRACTURE	194	38.7%
MAXILLARY FRACTURE	128	25.6%
ZYGOMATIC COMPLEX	78	15.7%
MANDIBULAR AND MAXILLARY FRACTURE	72	14.4%
NASAL BONE FRACTURE	10	2.0%
NOE	18	3.7%

Regarding Pattern of mandibular fracture 25.7% body of the mandible ,24.3% seen in condylar region, 7.3% symphysis , parasymphysis-5.9% , 12.5% in ramus, 9.4% in angle region, 7.3% dentoalveolar and 1.3% in coronoid region. **Table-II.**

**TABLE -II:- Distribution of Mandibular Fractures according to anatomic site.**

	NO. OF CASES	PERCENTAGE
BODY	74	25.7%
CONDYLE	34	24.3%
ANGLE	14	9.4%
PARASYMPHYSIS	9	5.9%
DENTOALVEOLAR	19	13.2%
SYMPHYSIS	12	7.3%
RAMUS	10	12.5%
CORONOID	02	1.3%

The pattern of maxillary fractures was Lefort I - 53.1%, Lefort II - 25.1%, Lefort III -12.86%, maxillary alveolus - 9.2%. **Table-III**

**Table No. III:- Distribution Of Maxillary Fractures**

TYPE	NO. OF CASES	PERCENTAGE
LEFORT I	68	53.1%
LEFORT II	32	25.1%
LEFORT III	16	12.06%
MAX. DENTOALVEOLAR	12	09.2%

The cause of injury included Four wheeler vehicles accidents – 187 (37.3%), motorcycle - 253 (50.3%), Assaults – 116 (23.2%) , sports – 34 (06.8%).

**Table-IV**

**TABLE -IV:-ETIOLOGY OF INJURIES.**

TYPE	NO .OF CASES	PERCENTAGE
FOUR WHEELER ACCIDENTS	187	37.3%
MOTOR CYCLE ACCIDENTS	253	50.3%
ASSAULTS	116	23.2%
SPORTS	34	06.8%

special attention was given distribution of etiology of injuries among males and females which included out of 500 cases 455 cases males and 55 females **Table-V.**

**Table-V:- Incidence of Injuries Among Males and Females.**

TYPES	NO OF CASES	GENDER	PERCENTAGE
FOUR WHEELER ACCIDENT	187	MALES - 160 FEMALES - 27	86.01% 13.09%
MOTOR CYCLE ACCIDENTS	253	MALES - 193 FEMALES - 60	76.28% 23.71%
ASSAULTS	116	MALES - 78 FEMALES - 38	67.23% 32.71%
SPORTS	32	MALES - 24 FEMALES - 08	75% 25%

**DISCUSSION:-**

Continuous long term collection of data regarding the epidemiology of maxillofacial fractures is important because it provides valuable information regarding development and analysis of fracture patterns and its further prevention to implement measures such as usage of helmets and seat belts in legislation<sup>3, 4</sup>. The nature of retrospective study is important for original examination and documentation. It was found that, Mandible is the most common bone encountered followed by maxillary bone. Nasal bone fractures are least recorded in our study. Amongst mandibular fracture body of mandible is most injured least being the coronoid process. Lefort I is the most prevalent pattern of facial fracture in association with maxillary fracture followed by Lefort III pattern. Motorcycle accidents were predominant in this study least being sports injuries. Males encountered most of maxillofacial injuries from motorcycle accidents followed by assaults.

Several methods of prevention may serve to reduce the risk and to minimise complications resulting from automobile accidents which is one of the predominant cause of injury among the population. There are some proposals to reduce traffic accidents one of the more adequate protection for both driver and passenger like increased seat belt and air bags in

cars usage of helmets and air bags jackets for two wheelers, lower speed limits, better highway designs, greater use of driver education programmes and more rigid requirements for license renewal including thorough eye and medical examinations<sup>5, 6</sup>. Violence prevention programmes focussing on both assault and self inflicted injury may help to decrease the maxillofacial trauma resulting from injuries.

**CONCLUSION:**

Assessment of incidence and pattern of maxillofacial injuries is very important as it helps in proper treatment planning. Record keeping of all data definitely is useful for any kind of research for future generations and also medico legal issues related to our speciality. Further studies including fractures are always necessary because the trends in etiology of maxillofacial trauma are always changing and the aetiology of fractures may suggest new ways to prevent these injuries.

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