

# Original Research

## Incidence of type and pattern of facial fractures in Kashmiri population

Sumera Gul<sup>1</sup>, Muneet Kapoor<sup>1</sup>, Jahangir Dar<sup>2</sup>, Samah Bashir<sup>3</sup>

<sup>1</sup>PG 3<sup>rd</sup> year, <sup>2</sup>PG 2<sup>nd</sup> year, <sup>3</sup>PG 1<sup>st</sup> year, Department of oral and maxilla-facial surgery, Government Dental College & Hospital, Srinagar

### ABSTRACT:

**Background:** Facial fractures can profoundly alter structure, function, and appearance of face including the globe. Hence; the present study was conducted for assessing the incidence of type and pattern of facial fractures in Kashmiri population. **Materials & methods:** Data of a total of 78 patients was analysed during the study period. Complete reviewing of the data records of the patients was done who underwent treatment for facial fractures at the Department of Oral & Maxillofacial Surgery, Govt. Dental College & Hospital, Srinagar. Assessment of demographic and clinical parameter of all the patients was done. Following parameters were analysed: age, gender, aetiology of facial fractures and type of fractures. All the fractures were also classified according to their anatomic location. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. **Results:** Mean age of the patients was found to be 45.8 years. The most common etiological factor responsible for facial fractures was road traffic accident. Zygomatic fractures were the most common type of facial fractures followed by mandible fractures. Among Zygomatic fractures, fracture of Zygomatic arch, fractures of Zygomatico-frontal region and fractures of Zygomatico-maxillary complex were found to be 8 patients, 5 patients and 5 patients respectively. Among mandible fractures, Symphysis/Parasymphysis fractures were the most common fractures. **Conclusion:** Among facial fractures, fractures of Zygomatico-maxillary complex and mandibular Symphysis/Parasymphysis region are more common among Kashmiri population.

**Key words:** Facial, Fractures, Kashmiri

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**Corresponding author:** Dr. Muneet Kapoor, PG 3<sup>rd</sup> year, Department of oral and maxilla-facial surgery, Government Dental College & Hospital, Srinagar

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### INTRODUCTION

Significant proportions of trauma have been associated with craniomaxillofacial injuries. Facial fractures can profoundly alter structure, function, and appearance of face including the globe. They can occur in isolation or in combination with other serious injuries including cranial, spinal, and upper and lower body injuries. It can have esthetic, functional, and psychologic effect on the patient. The epidemiology of facial fractures varies in type, severity, and cause depending on the population studied.<sup>1-3</sup> Maxillofacial injuries are one of the most common injuries associated with other injuries and adult males are the most common victims. Road traffic accidents (RTA) are the major cause of maxillofacial injuries in developing countries.<sup>4</sup>

The causes of orofacial injuries vary widely from country to country owing to their specific social, cultural and environmental factors. The causes of orofacial injuries are multifaceted and have changed over the last four decades and they continue to do so. Traffic accident together with assault, falls, occupational trauma and sports injury are deemed to be the most common causes of such injuries. The epidemiology of facial injuries varies in injury type, severity and depending upon the population studied.<sup>5</sup> Hence; the present study was conducted for assessing the incidence of type and pattern of facial fractures in Kashmiri population.

### MATERIALS & METHODS

The present study was conducted in GDC, Srinagar between Dec 2017 to Nov 2019 for assessing the incidence

of type and pattern of facial fractures in Kashmiri population. Data of a total of 78 patients was analysed during the study period. Complete reviewing of the data records of the patients was done who underwent treatment for facial fractures. Assessment of demographic and clinical parameter of all the patients was done. Following parameters were analysed: age, gender, aetiology of facial fractures and type of fractures. All the fractures were also classified according to their anatomic location. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi- square test was used for evaluation of level of significance. P- value of less than 0.05 was taken as significant.

**RESULTS**

In the present study, a total of 78 patients with facial fractures were analysed in the present study. Mean age of the patients was found to be 45.8 years. Majority of the patients (37.18%) belonged to the age group of 30 to 50 years. 60.26 percent of the patients were males while the remaining were females. The most common etiologic factor responsible for facial fractures was road traffic accident (43.59 percent of the cases). In the present study, 5.13 percent of the patients each had frontal bone fracture and orbital fracture respectively. Nasal bone fracture was found to be present in 3.85 percent of the patients. Zygomatic fractures were the most common type of facial fractures followed by mandible fractures. Among Zygomatic fractures, fractures of Zygomatic arch, Zygomatico-frontal region and fractures of Zygomatico-maxillary complex were found to be 8 patients, 5 patients and 5 patients

respectively. Among mandible fractures, Symphysis/ Parasymphysis fractures were the most common fractures. In the present study, head and neck associated injuries were found to be present in 12 patients while trunk associated injuries were found to be present in 10 patients.

**DISCUSSION**

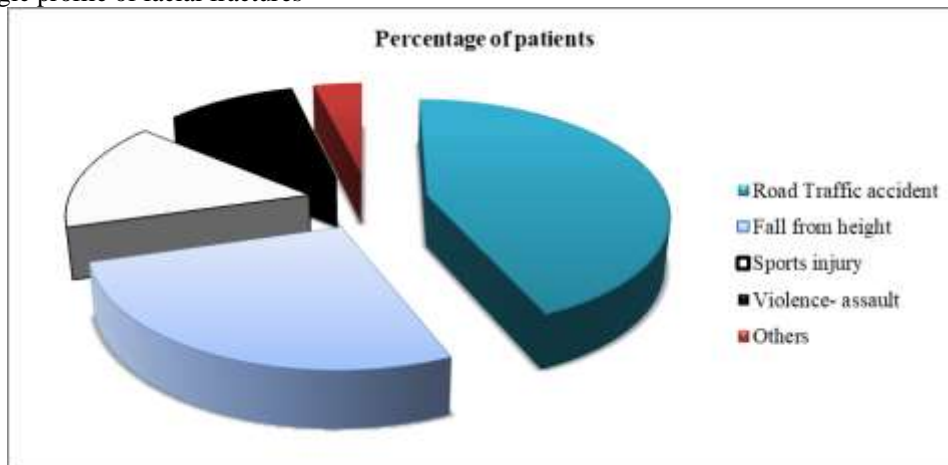
An increase in population in cities and industrial development has resulted in changes in lifestyles and personal activities. These changes result in increasing rate of injuries, especially maxillofacial fractures (Fx) owing to the specific anatomical features of this region. These injuries are one of the most common issues dealt with by both maxillofacial and plastic surgeons in their professional practice. These fractures might give rise to socioeconomic burden and deleterious effects on both the community and health system. These injuries are among the major health concerns worldwide. Furthermore, treatment and rehabilitation of maxillofacial fractures are associated with psychological and esthetic concerns, severe morbidity and disabilities.<sup>6-9</sup> Hence; the present study was conducted for assessing the incidence of type and pattern of facial fractures in Kashmiri population.

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**Table 1:** Demographic data

Parameter		Number	Percentage
Age group (years)	Less than 30	25	32.05
	30 to 50	29	37.18
	More than 50	24	30.77
Gender	Males	47	60.26
	Females	31	39.74

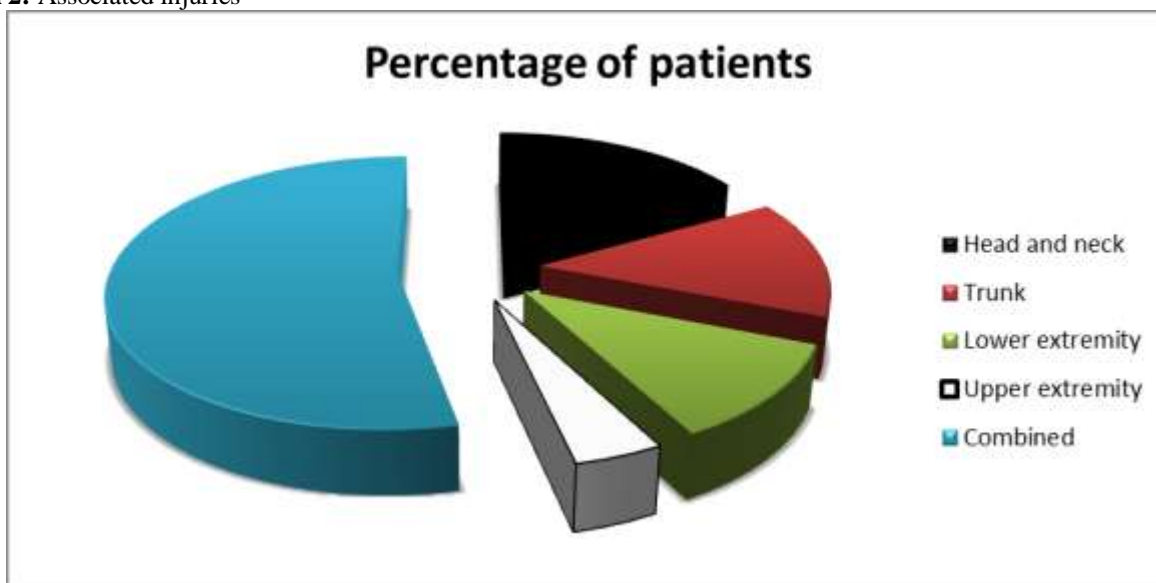
**Graph 1:** Etiologic profile of facial fractures



**Table 2:** Type of facial fractures

Type of facial fractures	Number	Percentage of patients	
Frontal bone	4	5.13	
Orbital bone	4	5.13	
Nasal bone	3	3.85	
Zygoma	Zygomatic arch	8	10.26
	Zygomatico-frontal	5	6.41
	Zygomatico- maxillary	5	6.41
Mandible	Angle	3	3.85
	Symphysis/Parasymphysis	13	16.67
	Condyle	6	7.69
	Body	4	5.13
	Ramus	2	2.56
	Combined	3	3.85
Complex	18	23.08	

**Graph 2:** Associated injuries



Ghosh R et al analyzed the incidence of facial fractures along with age, gender predilection, etiology, commonest site, associated dental injuries, and any complications of patients operated in Craniofacial Unit. Data were recorded for the cause of injury, age and gender distribution, frequency and type of injury, localization and frequency of soft tissue injuries, dentoalveolar trauma, facial bone fractures, complications, concomitant injuries, and different treatment protocols. A total of 1146 patients reported at our unit with facial fractures during these 10 years. Males accounted for a higher frequency of facial fractures (88.8%). Mandible was the commonest bone to be fractured among all the facial bones (71.2%). Maxillary central incisors were the most common teeth to be injured (33.8%) and avulsion was the most common type of injury (44.6%). Commonest postoperative complication was plate infection (11%) leading to plate removal. Other injuries associated with facial fractures were rib fractures, head injuries, upper and lower limb fractures, etc., among these rib fractures were seen most frequently (21.6%).<sup>10</sup>

In the present study, 5.13 percent of the patients each had frontal bone fracture and orbital fracture respectively. Nasal bone fracture was found to be present in 3.85 percent of the patients. Zygomatic fractures were the most common type of facial fractures followed by mandible fractures. Among Zygomatic fractures, fracture of Zygomatic arch, fractures of Zygomatico-frontal region and fractures of Zygomatico-maxillary complex were found to be 8 patients, 5 patients and 5 patients respectively. In another study conducted by Samieirad S, authors evaluated the epidemiology of maxillofacial fractures and treatment plans in hospitalized patients. The medical records of 502 hospitalized patients were evaluated in the Department of Maxillofacial Surgery. The type and cause of fractures and treatment plans were recorded in a checklist. The fractures were mostly caused by accidents, particularly motorcycle accidents (MCAs), and the most common site of involvement was the body of the mandible. There was a significant association between the type of treatment and age. In fact, the age range of 16-59 years underwent open reduction internal fixation (ORIF)

more than other age ranges ( $P=0.001$ ). Also, there was a significant association between gender and fractures ( $P=0.002$ ). It was concluded that patient age and gender and trauma significantly affected the prevalence of maxillofacial traumas, fracture types and treatment plans.<sup>11</sup>

In the present study, among mandible fractures, Symphysis/Parasymphysis fractures were the most common fractures. Singaram M et al evaluated the prevalence of maxillofacial trauma in a developing country, along with its pattern, etiology and management. The medical records of patients were analyzed for prevalence, pattern, etiology, and management of maxillofacial trauma. Maxillofacial fractures accounts for 93.3% of total injuries. The most common etiology of maxillofacial injury was road traffic accidents (RTA) followed by falls and assaults, the sports injuries seem to be very less. In RTA, motorized two-wheelers (MTW) were the most common cause of incidents. The majority of victims of RTA were young adult males between the ages of 20 to 40 years. The malar bone and maxilla were the most common sites of fracture, followed by the mandible. The right side of the zygomatic complex was the predominant side of MTW injury.<sup>12</sup>

In the present study, head and neck associated injuries were found to be present in 12 patients while trunk associated injuries were found to be present in 10 patients. In another study conducted by Malik S et al, authors assessed orofacial trauma cases in rural India. A total of 784 patients were studied. Males outnumbered females by a ratio of 2.9:1. Age range was 9 months–75 years with the peak incidence in the age-group of 18–34 years. Most injuries were caused by road-side accidents (72.7%), followed by assault and falls in 11.6% and 8% respectively. Soft tissue injuries and mandibular fractures were the most common type of injuries. Head/neck (50.29%) and limb injuries (27.2%) were the most prevalent associated injuries. Surgical debridement and soft tissue suturing was the most common emergency procedure. Closed reduction was performed in 61% of patients and open reduction and internal fixation in 30% of cases and 9% were managed conservatively. Complications occurred in 6.88% of patients, mainly due to infection and malocclusion. The mean duration of hospital stay was ( $10.12 \pm 6.24$ ) days. Their results highlighted the importance of department of dental surgery along with other disciplinaries in the management of orofacial injuries.<sup>13</sup>

## CONCLUSION

From the above results, the authors concluded that among facial fractures, fractures of Zygomatic-maxillary complex and mandibular Symphysis/Parasymphysis region are more common among Kashmiri population. However; further studies are recommended.

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