

A Retrospective Study on the Etiology, Prevalence and Pattern of Maxillofacial Trauma in the Population of Tiruvannamalai Dt, South India.

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I. Introduction

Aim: The aim of this retrospective study is to analyze the distribution pattern, etiology and prevalence of maxillofacial trauma in the population of Tiruvannamalai district, Tamilnadu

II. Materials and methods

The data for this retrospective study was retrieved and analyzed from the medical records of the patients who were treated for maxillofacial injuries in the Department of dental surgery, Government Tiruvannamalai Medical college and hospital, Tamilnadu, south India, during the period of November 2013 to November 2017.

In total 383 patients were analyzed for the percentage distribution of age, gender, etiology of injury and influence of alcohol consumption, anatomical site of facial injury with its preference site in mandible.

III. Results

In our retrospective analysis, maxillofacial injuries found to be common among third and fourth decades (135 cases, 35.2 % and 138 cases, 36 %) of individuals. Among them, male patients were predominantly affected with percentage distribution of 87.2 % (330 cases) compared to only 12.8% of female predisposition (47 cases), 6 children of age group less than 10 years were also affected.

The etiology for maxillofacial injuries shows road traffic accidents as the main cause with percentage distribution of 71.3% (273 cases) and 28.7% of cases (110) due to assault. Of them, 245 cases (64%) were found to be under the influence of alcohol.

During maxillofacial injuries mandibular involvement is found to be common in 203 cases (52.3%) compared to zygomatic complex bone involvement in 42.6%(163 cases). In mandible, parasymphysis 15.1%(58 cases) and Condyle 14.6%(56 cases) are the commonest site of fracture and in maxilla lefort I type fracture is found to be common 1.6%(11) cases.

Fig 1: Prevalence of Maxillofacial injury (A & B)

Fig: A

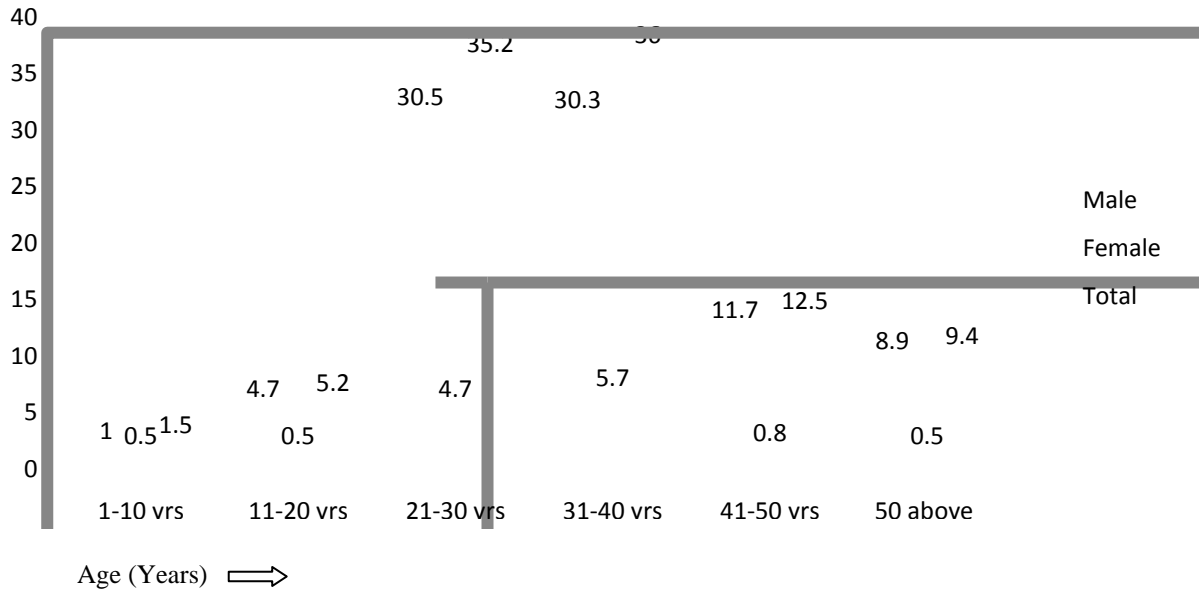


Fig: B

Age	0-1 yrs.		11-20 yrs.		21-30 yrs.		31-40 yrs.		41-50 yrs.		50 Above	
Sex	M	F	M	F	M	F	M	F	M	F	M	F
	1%	0.5%	4.7%	0.5%	30.5%	4.7%	30.3%	5.7%	11.7%	0.8%	8.9%	0.5%
Total	1.5%		5.2%		35.2%		36%		12.5%		9.4%	

Fig 2: Gender Distribution of Maxillofacial injury

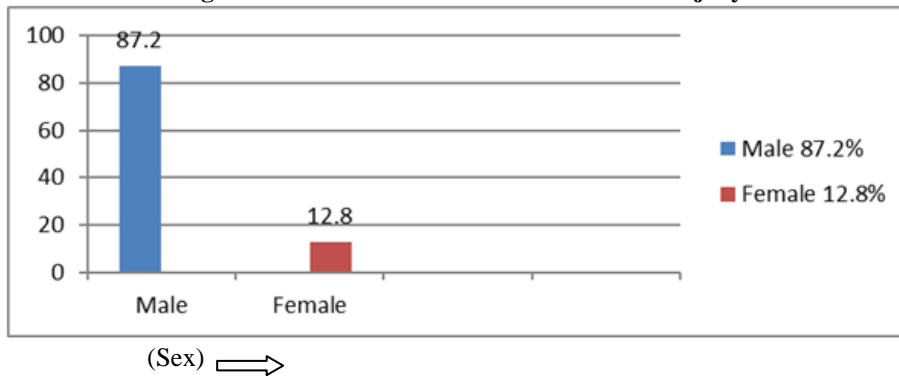


Fig 3: Etiology of Injury

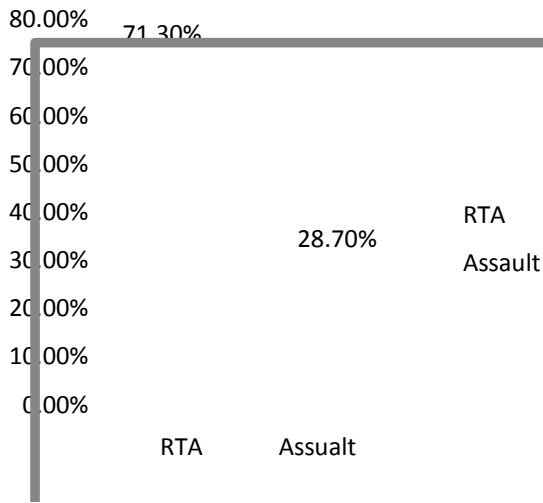


Fig 4: Alcohol Influence during trauma

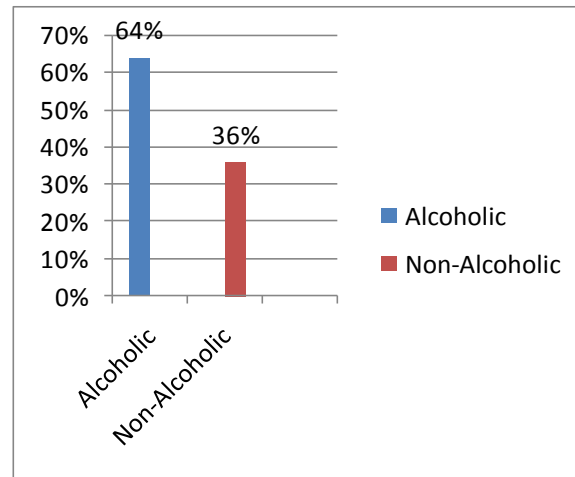


Fig 5: Site of Maxillofacial injury

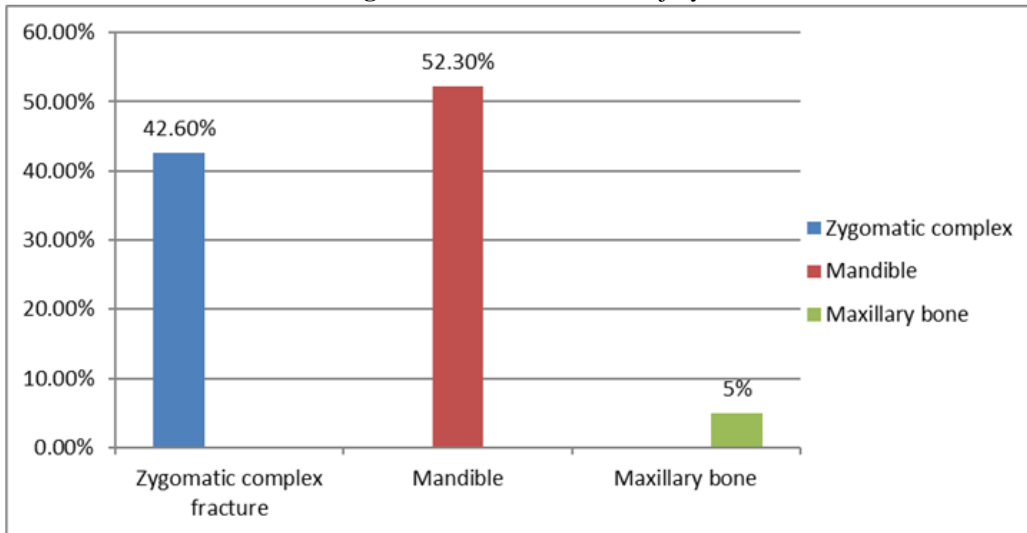


Fig 6: Maxillary fracture

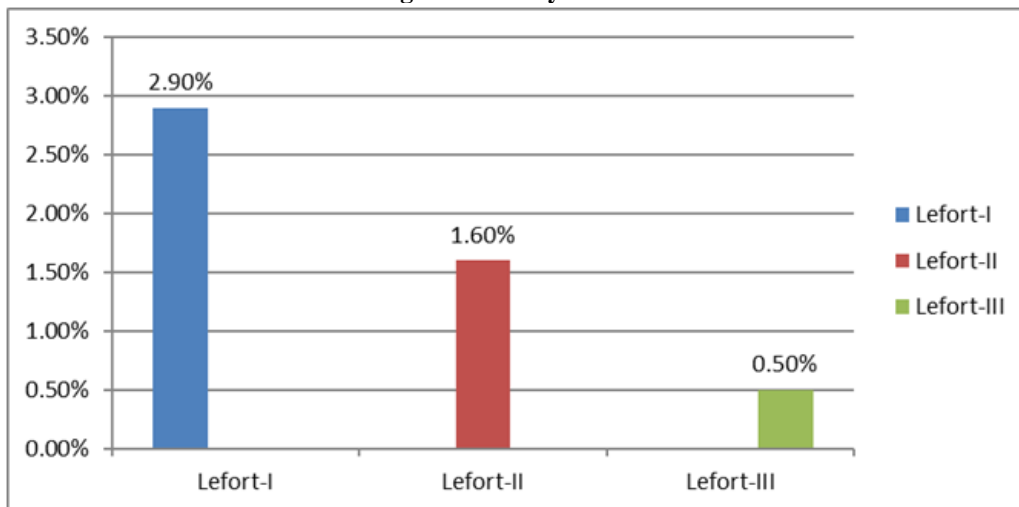
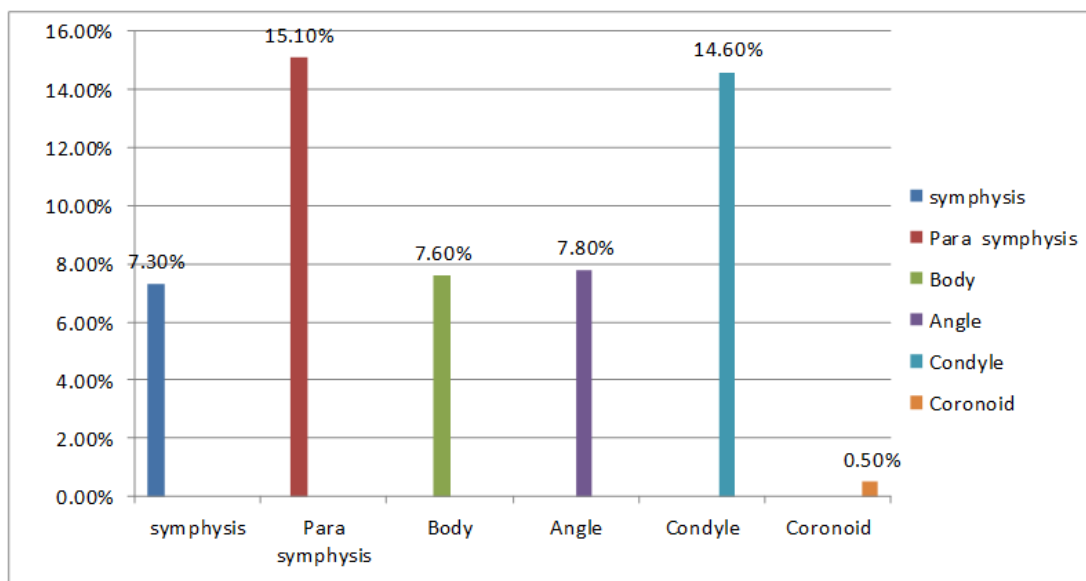


Fig 7: Mandibular Fracture: -



IV. Discussion

Trauma is found to be one of the major cause of death among people under 40 years of age ¹ and maxillofacial injuries in general occur quite commonly following trauma and in other injuries like violence, accidental falls and in sports injuries ². These injuries can affect both skeletal and soft tissue structures of the facial region ^{3,4} and if not properly managed, can negatively influence both the psychosocial and functional activities of the patient ³.

The incidence of maxillofacial fracture varies with geographic region, socioeconomic status, culture and region. Hence the distribution pattern and etiology of the maxillofacial injuries in our district were analyzed in this study.

In our study we analyzed from the age of 4 years to 75 years and in that 3rd and 4th decade of patients (35.2% and 36%) are most commonly affected by maxillofacial injury similar to studies^{5,6}, and children of less than 10 years accounts to only 1.5% and mostly due to accidental fall while playing or fall from a bicycle.

In the present study, RTA accounted for 71.3% (273 cases) of injuries, similar to study⁵, showing RTA accounted for 73.8% of injuries, compared to 28.7% of injuries due to assault or interpersonal violence. RTA is the major cause of maxillofacial injury in our study which correlates with other studies^{6,7,8,9} which could be due to the fact that there is lack of individual sensitization about importance of safety devices of the vehicle, lack of adherence to safety rules and regulations, lack of clear road traffic signals etc.,

Also in our study, higher frequency of maxillofacial injuries is found among males (87.2%), compared to females (12.8%) which is a universal finding seen in many studies ^{5,6} as they are mainly involved in many outdoor activities and reckless driving. Nearly 71.3% of cases were under the influence of alcohol at the time of injury showing the influence of personal bad habits as the main reason for many road traffic accidents and violence. Studies ^{7,9} have shown that although alcohol consumption is decreasing in some developed countries, it is on the rise in developing nations, particularly among those aged 21 to 35 years (230). Alcohol could affect psychomotor skills, ability to maintain balance and coordinate physical activities.

In our study, 52.3% of fractures involved the mandibular bone, followed by zygomatic complex involvement of 42.6% cases and maxillary fracture accounting only 5% of the total cases which is similar to studies ^{7,8} and contradictory to other studies ^{6,11,12}, where midfacial fractures is found to be common which might be correlated with the increased cases of alcohol consumption in our study (71.3% cases). Although mandible is the heaviest and strongest facial bone, it is more susceptible to fracture because it is the only movable facial bone and it has anatomical peculiarity in form and location.

On looking for common fracture site in mandible, Parasymphysis (15.1%) seem to be common similar to study ^{7,16} and equally affected is condyle accounting for 14.6% cases which is similar to studies ^{10,13,14,15}. Possible explanation might be the fact that most of the commercially available helmets do not cover the total facial area, especially the chin, and fall from two-wheeler or self-fall may fracture the parasymphysis and impact on chin might result in indirect trauma to condyles, resulting their fracture.

V. Conclusion

This retrospective study in our district revealed that main cause of maxillofacial injury was RTA, and males aged 20-40 years were found to be commonly affected. Mandibular bone is commonly involved and

influence of alcohol is found to be one of the important factors responsible for injury. The motive behind this article is to analyze the various trends of facial fractures and all those factors that could affect their distribution. Knowledge gained from the present study would influence in assessing the effectiveness of existing preventive measures and elaboration of future preventive measures and conducting new research.

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