

Evaluation of maxillofacial injury in the central part of Nepal

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Abstract

An evaluation of dental and maxillofacial trauma in College of Medical Sciences, Teaching Hospital, Bharatpur, Nepal was carried out to assess the causes of trauma and the relationship between the injuries to the Patient's Age, Gender, Type, Site of injury and the Influence of Alcohol from June 1, 2008 to May 31, 2011. Files of 1986 trauma patients were reviewed. Maxillofacial or dental injuries were observed in 269 (13.54%) of the trauma patients, caused by road traffic accidents 173 (64.3%), fall injury 43 (16.0%), physical assault 25 (9.3%), animal attack 9 (3.3%) and sport injury 19 (7.1%) Men were hospitalized almost three times more than women, most common site of injury was dentoalveolar fracture 79(29.37%) young people were at greater risk. The most frequent age of trauma was 15-29 years (51.7%).

Key words: Alcohol, maxillofacial injury, fracture.

Introduction

Accidents constitute an important cause of preventable morbidity, mortality, and disability.¹

The road traffic accidents (RTA) are now considered a public health hazard of primary magnitude and are likely to increase in the coming years owing to the rapid increase in the automobile users.²

One fourth of the women with facial trauma are victims of domestic violence. If a woman has an orbital fracture, the likelihood of sexual assault or domestic violence increases to more than 30%.

In addition to physical consequences of facial trauma, there are psychological costs as well. More than a one

quarter of patients with severe facial trauma will develop Post Traumatic Stress Disorder.

Being the most exposed part of the body, the face is particularly vulnerable to such injuries, 20-60% of all those involved in automobile accidents have most level of facial fractures.^{3,4}

Earlier studies from Europe and America revealed that road traffic accident were the most frequent cause of facial injuries in developed countries.^{5,6} However, traffic accidents remain the most frequent cause in many developing countries.^{7,8}

Maxillofacial injuries due to wild animal attack are most commonly found in places nearby forest or national parks.

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Materials and methods

This was a cross-sectional study that recruited cases reported within a period of 3 years. The source population was maxillofacial injury patients presenting to the Oral and Maxillofacial Surgery Department of C.M.S. & T.H., Bharatpur, Chitwan, Nepal. Data were analyzed using SPSS version 16.0.

Case records of the patients admitted due to maxillofacial injuries reported during June 1, 2008 to 31 May, 2011 were collected from the medical record department of the hospitals. Data was collected regarding the Age, Sex, under the influence of alcohol, site of injury on the face, type of injury (Midface, Mandibular region) and associated injuries to other parts of the body. Cases of patients involved in accidents outside the reference vicinity were excluded.

Results

A total of 269 patients were studied during the period of this study. The majority of the subjects were within the 15-29 years age group while the smallest group comprised subjects aged 60 years and above. There

were substantially more men than women. The age group and sex are as presented in Table 1.

There were 51.7% of patients in the 15 to 29 year age group, 20.8% in the 30 to 44 year age group and 9.3% in the 45 to 59 year age group (Fig.1). This differs from the non-alcohol group, in which males accounted for 75.09%. The differences in gender and age group between the alcohol-related and non-alcohol related fractures are statistically significant (Fig. 2)

Most fractures were caused by road traffic accident (64.3%), fall injuries (16.0%), physical assault (9.3%), sport injuries (7.1%) and animal attack (3.3%) among which the most common causative factor was RTA. Fall Injuries were the second most common cause of injuries (Table II & Fig.3).

The prevalent anatomic regions of maxillofacial traumatic injuries were Dentoalveolar fracture (29.37%), Mandible (25.28%), Nasal 61(21.56%), Zygomatic (11.15%) Maxilla (4.83%), and multiple (7.81%). Multiple is considered as fracture involving more than one site of injury. The Dentoalveolar fracture (29.37%) was the most frequent involved anatomic region (Table-III & Fig 4).

Table I. Distribution of maxillofacial injuries according to age and sex

Age (years)	Sex		
	Male(%)	Female(%)	Total(%)
1-14	25 (9.29)	11(4.09)	36(13.4)
15-29	114(42.38)	25(9.29)	139(51.7)
30-44	41(15.24)	15(5.58)	56(20.8)
45-59	16(7.8)	9(3.35)	25(9.3)
>60	6(2.23)	7(2.6)	13(4.8)
Total	202(76.2)	67(23.8)	269(100)

Table II. Etiology and sex distribution of patients with maxillofacial injuries

Type	Sex		Total(%)
	Male(%)	Female(%)	
RTA	25 (9.29)	11(4.09)	173(64.3)
Fall injury	114(42.38)	25(9.29)	43(16.0)
Physical assault	41(15.24)	15(5.58)	25(9.3)
Sport injury	16(7.8)	9(3.35)	19(7.1)
Animal attack	4(1.49)	7(10.93)	9(3.3)
Total	205(76.2)	64(23.8)	269(100)

Table III. Site distribution of patients with maxillofacial injuries

Site of injury	Frequency (%)
Dentoalveolar	79(29.37%)
Maxilla	13(4.83%)
Nasal	58(21.56%)
Zygomatic	30(11.15%)
Mandible	68(25.28%)
Multiple	21(7.81%)
Total	269(100%)

Figure 1

Distribution of maxillofacial injuries according to age and sex

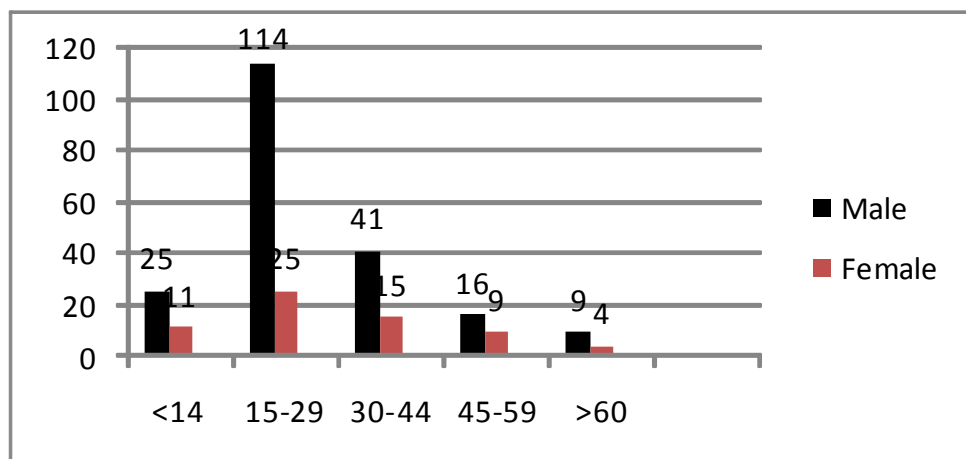
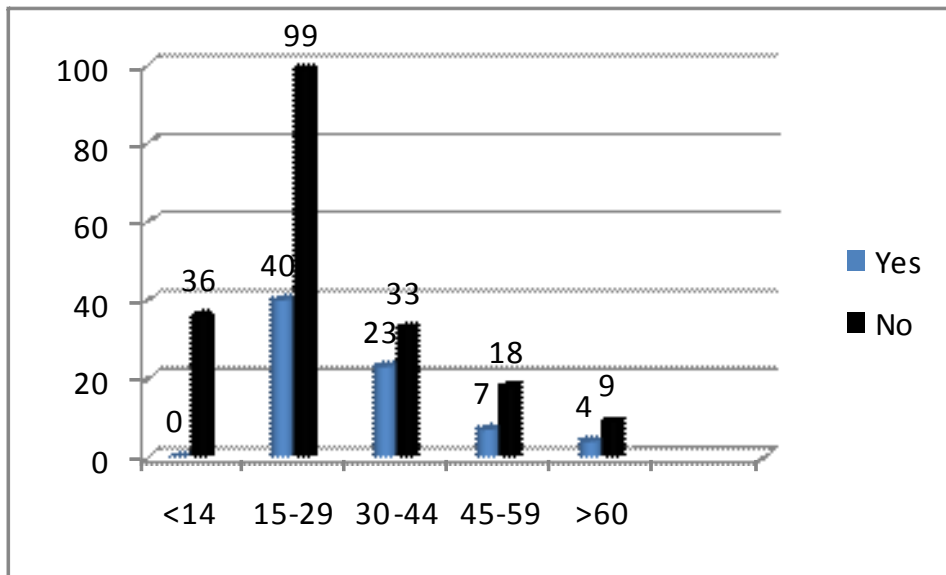


Figure 2

Distribution of maxillofacial injuries according to age and influence of alcohol



Discussion

Maxillofacial injuries are relatively frequent and one of the most common cause of post traumatic stress disorder for patients and their families due to their cosmetic reason.

The higher frequency of maxillofacial injuries among men compared to women in the present study may be attributed to the fact that the females, most often, are confined to housework and they drive vehicles less frequently, and more carefully than males; also, the fact that women occasionally participate in trading or farming and are less exposed to accidents in fights, industrial works, and sports.⁹

Trauma is now considered a problem of young people, which may be because of their aggressive nature and careless driving on roads. The peak age of incidence of maxillofacial injuries of 21-30 years is not different from reports from other part the world.¹⁰

The increasing number of RTAs in developing countries like Nepal may be attributed to many factors like

sharing of roadways by pedestrians and animals with fast-moving and slow-moving vehicles, with almost no segregation of pedestrians from wheeled traffic; the large numbers of old and poorly maintained vehicles on road; large numbers of motorcycles, scooters, and mopeds and low driving standards.

The increasing fights and assaults in the recent times can be attributed to increasing interpersonal violence with alcohol consumption, and unemployment.

The two wheelers in comparison with the cars are unstable and provide little protection to their riders in accidents. This may be the possible explanation for the increasing frequency of RTAs involving the two wheelers.

The higher involvement of mandible may be attributed to its prominence and also to its exposed anatomical position on the face. The involvement of nasal bone in most of the middle third fractures may be attributed to its prominent location on the face and relative structural weakness.¹¹

The majority of alcohol-related facial fractures were due to interpersonal violence, with young men in the 15 to 29 year age group being predominantly affected. Alcohol-related fractures were associated with an increase in the incidence of hospitalisation and surgery. The high prevalence of alcohol as a contributing factor to facial fractures indicates a need to push for community awareness and public education on the harmful effects of alcohol.

Excessive consumption of alcohol is strongly associated with facial injuries. Alcohol impairs judgement, brings out aggression, often leads to inter-personal violence (IPV), and is also a major factor in motor vehicle accident (MVA).¹²

The alcohol consumption is considered a part of the life style of the present generation and the proportion of youth with this habit is increasing with the time. Alcohol impairs driving ability and increases the risk of an accident as well as its consequences. Drugs such as barbiturates, amphetamines, and cannabis impair one's ability to drive safely. Alcoholics become more violent and this may be reason for higher incidence of fight.¹³

Conclusion

The present study showed that more men were involved in maxillofacial injuries with the highest occurrence among those in the 15–29 years age groups. The main contributory factor was RTA, specifically involving the motorcycles. The community and relevant authorities need to come up with appropriate road safety and awareness interventions to reduce the risk of accidents particularly focusing young male motorcyclists.

Fractured mandible and middle third of the face in younger age groups may sometimes lead to almost permanent deformity. If RTA is considered an epidemic of modern times, then prevention is its vaccine. This can be accomplished by educating the general public, particularly the vulnerable age group (15-45 years) about road safety measures.

Alcohol-related trauma is a major social and economical burden that requires effective use of hospital resources and patient interventional strategies. The maxillofacial region is the most common target in assault-related injuries and there is a strong link between alcohol consumption and these injuries. Indeed, the noted decrease in motor vehicle accident-related facial injuries has been offset by the large increase in alcohol-related interpersonal violence.

The demographics reflect that young men are mainly affected and there is a statistically significant correlation between alcohol-related trauma and hospitalisation. Oral and Maxillofacial surgeons have an important role in preventive education as well as treatment of alcohol-related facial injuries.

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