EVALUATION OF MAXILLOFACIAL TRAUMATIC INJURIES OF FORENSIC MEDICAL CENTER OF AHWAZ, IRAN, IN 2005

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ABSTRACT

Objective: To review and compare the frequency and etiology of maxillofacial injuries in patients of forensic medical center of Ahwaz in 2006.

Methodology: It is a retrospective review of patient’s records at Forensic Medical Center of Ahwaz, Iran, in 2006. Age, sex, etiology, type and location of injuries were analyzed. The percentage and means were calculated using Microsoft SPSS soft ware and Chi-square test.

Results: In total 272 patients which included 220 male (80.9%) and 52 female (19.1%) with male to female ratio of 4.23:1 were screened. Most fractures were caused by violent assaults (61%), traffic accidents (30.1%) and accidents at work (8.8%) the majority of patients (118 and 43.3%) were in the age group of 21-30 years old.

Conclusions: Our results show that the most common causative factor was assaults. The relatively high incidence of injuries resulting from assaults, indicated the necessity to reinforce legislation aimed to prevent assault and thus reduce maxillofacial injuries.

KEYWORDS: Maxillofacial, Traumatic injuries, Forensic.

INTRODUCTION

Maxillofacial injuries are relatively frequent and can be psychologically disturbing for patients and their families due to their aesthetic and functional nature.

Epidemiological studies regarding maxillofacial injuries are helpful in evaluating the quality of patient care and in planning preventive strategies. These studies are also valuable in identifying new frequencies and patterns of these injuries.¹

Skeletal and soft tissue injuries of the face constitute quite a significant portion of the workload of the oral and maxillofacial surgeons in Iran.² 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...
Surveys of facial injuries have shown that the etiology varies from one country to another and even within the same country depending on the prevailing socioeconomic, cultural and environmental factors.\textsuperscript{5-7}

Earlier studies from Europe and America revealed that road traffic crashes (RTC) were the most frequent cause of facial injuries in developed countries.\textsuperscript{8,9} However, traffic accidents remain the most frequent cause in many developing countries.\textsuperscript{10,11}

The aim of the present study was therefore, to analyze the characteristics and trends of maxillofacial injuries in Ahwaz, Iran.

**METHODOLOGY**

It is a retrospective review of hospital records of all patients who had sustained oral and maxillofacial injuries. A Questionnaire was used for gathering the information like Age, sex, etiology, type and location of injuries which were analyzed using the SPSS for window (Version14; SPSS inc; Chicago, IL) statistical software package. Descriptive statistics and the non-parametric Chi-square test were used to analyze the incidence of injuries. The critical level of significance was set at $p < 0.05$.

**RESULTS**

*Age and sex distribution:* During one year from 2005 to 2006, 272 patients with maxillofacial traumatic injuries were seen in forensic medical center of Ahwaz, Iran.

There were two hundred twenty (80.9%) males and fifty two (19.1%) females with a male-to-female ratio 4.23:1 (Table-I). Their age ranged from one to 73 years with a mean age of 38 years.

**DISCUSSION**

Injuries of the maxillofacial area are relatively frequent and can be psychologically disturbing for patients and their families due to their aesthetic and functional nature. Epidemiological studies requiring maxillofacial injuries are helpful in evaluating the quality of patient care and in planning preventive strategies.
In this study, more males were involved in maxillofacial injuries than females, which is in agreement with previous reports. However, a tendency towards an equal male-to-female ratio was observed between earlier and later studies in most centers across the country. This can be attributed to a changing workforce. Women, who are used to stay at home, now work in outdoor and high-risk occupations, thus becoming exposed to injuries.

The peak age of incidence of maxillofacial injuries was 21-30 years in Ahwaz, which is not different from reports from other parts of the world. The possible explanation for this is that people in this age group take part in dangerous exercises and sports, drive motor vehicles carelessly, and are most likely to be involved in interpersonal violence.

Assaults (61%) were the most common cause of maxillofacial injuries in Ahwaz, and other common causes were traffic accidents (30.1%) and accidents at work (8.8%).

Increase in number of assaults related to maxillofacial injuries could be attributed to poor socioeconomic conditions of the city leading to stress and propensity to crime.

While RTC have been gradually falling in the developed countries, they continue to rise with horrifying speed in the low and middle-income (LMIC) countries of Africa and Asia. The World Health Organization (WHO) has estimated that nearly 25% of all injury fatalities worldwide are due to road traffic crashes, with 90% of the fatalities occurring in LMIC. The reductions in RTC in developed countries are largely attributed to a wide range of road safety measures such as seat belt use, traffic calming measures, and traffic law enforcement. Therefore, there is an urgent need to implement what the developed nations have done to reduce and prevent road traffic crashes.

The finding of this study, compared with similar studies reported in the literature, supports the view that the causes and incidence of maxillofacial injuries vary from one country to another depending on the prevailing socioeconomic, cultural, and environmental factors. The result of this study shows that the most common causative factor was assaults. This succession of etiologic factors is in accordance with the data from most undeveloped countries.

Increase in number of assaults related to maxillofacial injuries could be attributed to the poor socioeconomic conditions of Ahwaz, leading to stress and propensity to crime. As such, there is a need to reinforce legislation aimed to prevent assault and reduce maxillo-facial injuries among young people.

Traffic accidents were the second most common cause of injuries. These findings should also alert the authorities, particularly the government and the roads safety commission, to the need for the provision of good roads, enforcement of existing traffic laws, and general improvement of socioeconomic conditions of the population.

**Limitations of the study:** The sample size in this retrospective study is too small. More studies, particularly prospective studies, are needed to further confirm these findings.

### Table-III: Site distribution of patients with maxillofacial injuries.

<table>
<thead>
<tr>
<th>Injuries site</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandible fractures</td>
<td>24 (8.8)</td>
</tr>
<tr>
<td>Maxillary fractures</td>
<td>16 (5.9)</td>
</tr>
<tr>
<td>Nasal fractures</td>
<td>75 (27.5)</td>
</tr>
<tr>
<td>Zygomatic fractures</td>
<td>7 (2.6)</td>
</tr>
<tr>
<td>Dental fractures</td>
<td>61 (22.4)</td>
</tr>
<tr>
<td>Orbital fractures</td>
<td>4 (1.5)</td>
</tr>
<tr>
<td>Orbital trauma to</td>
<td>34 (12.5)</td>
</tr>
<tr>
<td>soft tissue</td>
<td></td>
</tr>
<tr>
<td>Facial nerve injuries</td>
<td>8 (2.9)</td>
</tr>
<tr>
<td>Trigeminal nerve injuries</td>
<td>4 (1.5)</td>
</tr>
<tr>
<td>Lacrimal system injuries</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Nasal trauma to</td>
<td>6 (2.2)</td>
</tr>
<tr>
<td>soft-tissue</td>
<td></td>
</tr>
<tr>
<td>Lip injuries</td>
<td>6 (2.2)</td>
</tr>
<tr>
<td>Injury to ears</td>
<td>8 (2.9)</td>
</tr>
<tr>
<td>Palpebral injuries</td>
<td>17 (6.3)</td>
</tr>
<tr>
<td>Total</td>
<td>272 (100)</td>
</tr>
</tbody>
</table>
REFERENCES