



Contents lists available at ScienceDirect

Journal of Cranio-Maxillo-Facial Surgery

journal homepage: www.jcmfs.com

An analysis of 711 victims of interpersonal violence to the face, Turin, Italy



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ARTICLE INFO

Article history:

Paper received 2 November 2015

Accepted 30 May 2016

Available online 6 June 2016

Keywords:

Maxillofacial trauma

Trauma

Maxillofacial surgery

ABSTRACT

Aim: The aim of this work is to analyze the risk factors in interpersonal violence and to describe the epidemiology, patterns and management of maxillofacial fractures in high volume trauma center of the northern Italy.

Material: This retrospective study recorded patients hospitalized with maxillofacial fractures, at the division of maxillofacial surgery, Città della Scienza e della Salute University Hospital, Torino, Italy, since January 2001.

Methods: Only patients who presented with “violence” in the database field for “cause of injury” and with “interpersonal violence” as a subtype of etiology were considered. Statistical analysis was determined using the χ^2 or Fisher's exact test.

Results: 2567 patients were admitted. 711 patients (27.7%) had undergone interpersonal violence that has increased from 20% to 35% in the study period. The male-to-female ratio was 11:1; the mean age was 32.7. 247 patients were foreigners (34.7%). 107 patients were enrolled in that study, referred alcohol or drugs abuse. IPV episodes account for 953 maxillofacial fractures localized in 55.3% of the cases in the midface, 43.1% in the lower third. Particularly the trauma involved the orbital region and the maxillo-orbito-zygomatic region. 4.4% of patients had combined trauma.

Conclusion: IPV maxillofacial fractures in Europe such as in Italy are becoming one of the first cause of injuries. This study shows that young males and foreigners are involved in violence mostly during the weekend. These fractures occur due to fists frequently involving the maxillo-zygomatic-orbital complex.

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1. Introduction

The violence is today one of the integrative parts of the human experience and it shows its different aspects worldwide.

World Health Organization (2004) defines violence as: “the intentional use of physical force or power, threatened or actual against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation” (Krug et al., 2002).

To date, mostly in developed countries, interpersonal violence is spreading. The consequence of this phenomenon is the increasing of injuries also in the head and neck region with subsequent maxillofacial fractures (Bakardjiev and Pechalova, 2007;

Eggensperger et al., 2007; Brink, 2009; Hallmer et al., 2010; Lee, 2012; Rallis et al., 2015b).

Interpersonal violence (IPV) is defined to include violence between family members and intimate partners and violence between acquaintances and strangers that is not intended to further the aims of any formally defined group or cause. Self-directed violence, war, state-sponsored violence and other collective violence are specifically excluded from these definitions (World Health Organization, 2004).

The aim of this paper is to evaluate the risk factors for the escalation of the interpersonal violence and to describe the epidemiology, patterns and management of maxillofacial fractures in high volume trauma center of the northern Italy.

2. Patients and methods

This study is based on a systematic computer-assisted database that has continuously recorded patients hospitalized with

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Table 1
Etiology of overall maxillofacial fractures. RTAs, road traffic accidents.

2001–2014	Patients N° (%)	Mean age	Ratio M:F	Hospitalization days	Associated injuries N° (%)	FISS
Fall	746 (29.1%)	49.8	1.4:1	5	124 (16.6%)	1.9
Assault	711 (27.7%)	32.7	11:1	4	31 (4.4%)	1.9
RTAs	577 (22.5%)	34.4	2.2:1	7	264 (45.7%)	2.8
Sport	321 (12.5%)	29.2	7.2:1	3.7	23 (7.2%)	1.7
Job	158 (6.1%)	44.6	25.3:1	5.7	44 (27.8%)	2.6
Other	54 (2.1%)	40.8	2.3:1	7.2	8 (14.8%)	2.2
TOTAL	2567 (100%)	38.5	3.3:1	5.1	494 (19.2%)	2.2

maxillofacial fractures, at the division of maxillofacial surgery, Città della Scienza e della Salute University Hospital, Torino, Italy, since January 2001. Only patients who presented with “violence” in the database field for “cause of injury” and with “interpersonal violence” as a subtype of etiology over the period from 1 January 2001 to 31 December 2014 were considered for this study.

The following data were considered for each patients: age, gender, nationality, alcohol or drug abuse, mechanism of injury, date of trauma, site and severity of facial fracture (Facial Injury Severity Scale – FISS) (Bagheri et al., 2006), associated injuries, type of treatment and hospital stay.

Patients with injuries produced by self-inflicted violence and by gunshot wounds were excluded.

Statistical analysis was determined using the χ^2 or Fisher's exact test. Probabilities of less than 0.0001 were accepted as significant.

3. Results

There were 2567 patients admitted to our division due to maxillofacial trauma (Table 1). There were 711 patients (27.7%) injured by interpersonal violence, which was the second leading cause of traumatic events after falls (Fig. 1).

Fig. 2 shows a progressive increase in interpersonal violence lesions, and the rate increased from 20% to 35% during the study period.

The data indicate that the population of 711 patients contained 652 male patients and 59 female patients ($p < 0.0001$) (ratio 11:1). The mean patient age was 32.7 years (range 11–95). The majority of events occurred between the second and the third decade of life (Fig. 3).

The data show that 247 of the 711 patients were foreign (34.7%) ($p < 0.0001$). There were 222 male and 25 female patients (ratio 9:1). The mean patient age was 30.9 years (range 15–56).

The rate of interpersonal violence for foreign patients is three times higher than the rate of work related accidents (12.6%), motor vehicle accidents (10.1%), sports injuries (9.3%), and falls (7.7%). Fifty-one percent of foreign patients with IPV maxillofacial

fractures are European. The majority of patients were from Romania or Albania. Additionally, 38% of foreign patients were African and were originally from Morocco and Nigeria (Fig. 4).

The data show that 46 of the 711 (6.5%) patients enrolled in the study abused alcohol or drugs.

Our results indicate that Mondays had relatively few patients with fractures. However, the incidence of maxillofacial fracture due to IPV increased during the week in our male population. During the weekends, the incidence was higher than on weekdays, and 69% of patients were admitted between Friday night and Monday.

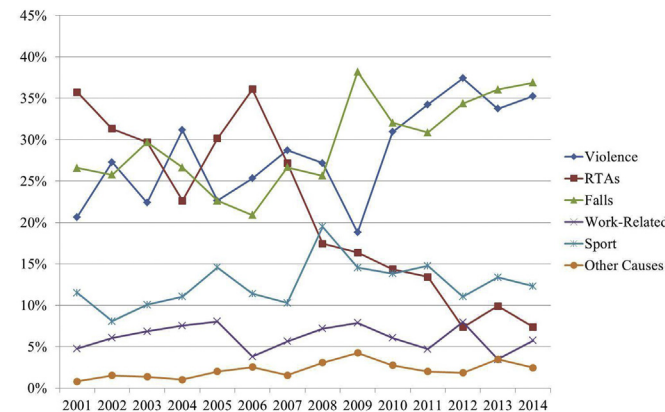


Fig. 2. Trend of incidence of the major causes of maxillofacial fractures. RTAs, road traffic accidents.

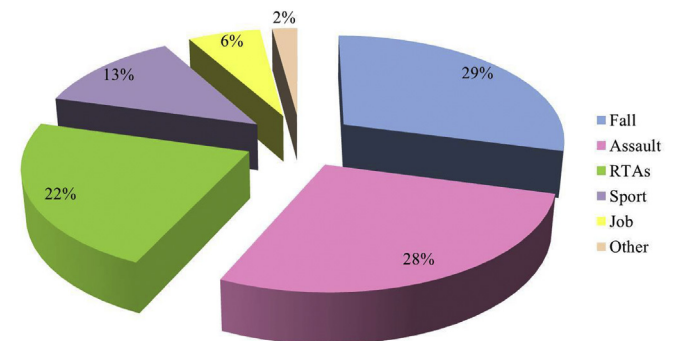


Fig. 1. Etiology of maxillofacial fractures over the 14-year-period studied. RTAs, road traffic accidents.

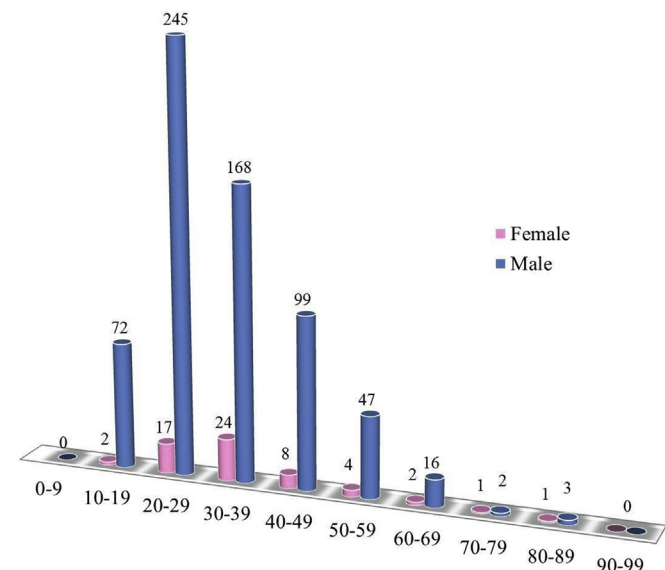


Fig. 3. Patient's distribution to age and gender.

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