Civilian Missile Injuries in Iraq after 2003, Misan as an Example

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Abstracts

A retrospective study analyzing data of patients admitted because of missile injuries over more than one decade in Misan, Iraq.4098 patients were involved in the study, 3550 patients sustained bullet injuries and 548 patients sustained explosive injuries. Urban young male patients were mainly affected. Periods of political instability and civilian unrest were associated with increasing numbers of affected patients especially the years (2003-2007) and (2014-2015). Fatal injuries were due to bullet injuries rather than explosive injuries. In conclusions effective legislations regulating the use of weapon in the civilian life, political stability, and international supports are important factors that help the country to reduce the effect of this problem.

Key words: *Civilian missile injuries, bullet injuries, explosive injuries.*

Introduction

The modern war is described as three – block war where we expect to be providing humanitarian assistance in one part of the city, conducting a peacekeeping operation in another, and fighting in a third part of the city[1]. The era of the post- operation of Iraq freedom in 2003 was characterized by a relative instability and civilian unrest which had been reflected as a relative insecurity and unsafety in the country; one of the important problems during this period was civilian missile injuries. Civilian missile injuries represent an important bulk of civilian traumatic deaths worldwide, which may range from 5% -32% of civilian traumatic deaths [2, 3, 4] . In this study we try to verify the problem of civilian missile injuries regarding the demographic features, the pattern of distribution of the patients and the periods of time that show the higher number of affected patients and discuss the factors that lead to this big problem in the area of Amarah city, Misan province in the south of Iraq.

Material and Methods

Data were collected from the patients records of the emergency department at Al-Zahrawi surgical hospital; in Misan, Iraq.

These data were analyzed regarding the mechanism of the missile injuries (bullet injuries group and explosive injuries group), demographic features of the patients affected by the missile injuries, pattern of distribution regarding residency of these patients, annual distribution on different years, which may reflect the status of civilian security and safety during these deferent time intervals.

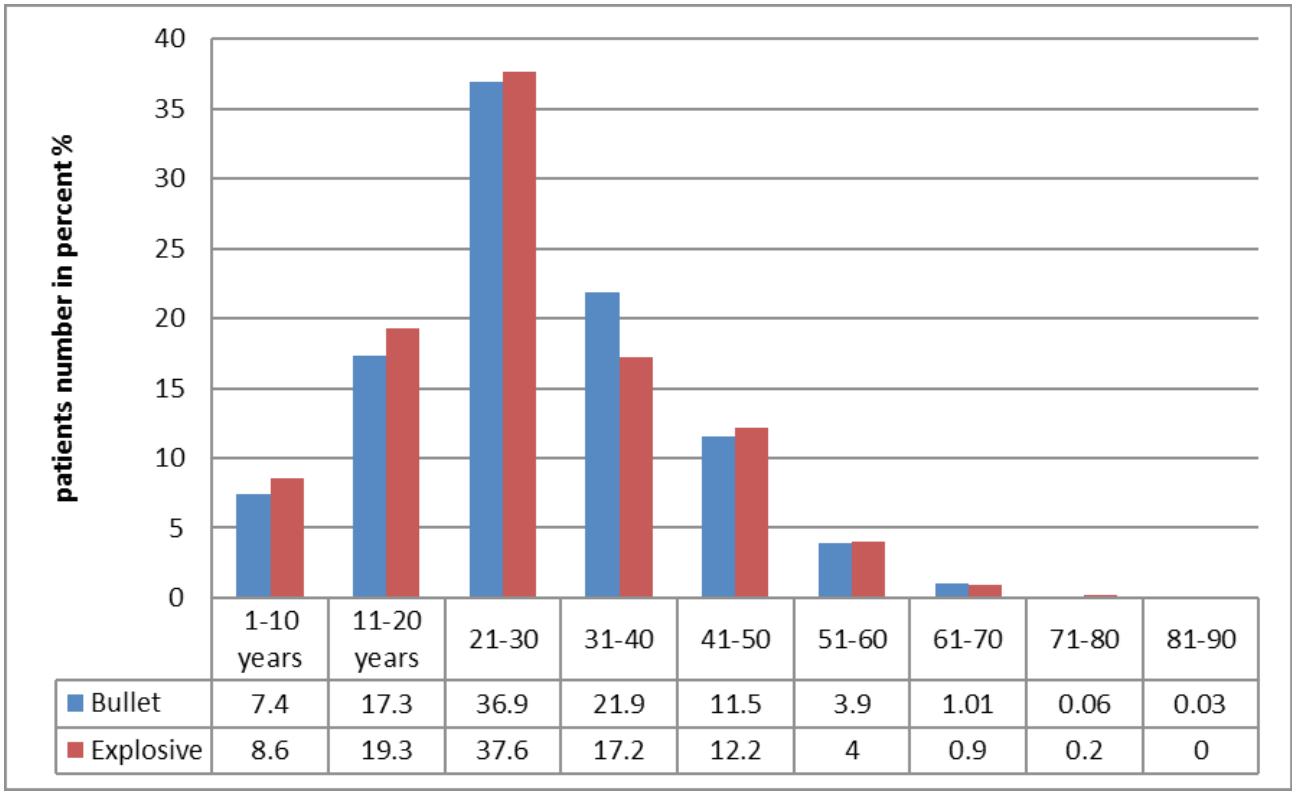
Bullet injuries refer to injuries caused by either gunshot (low velocity) or shotgun (high velocity) injuries.

Explosive injuries refer to injuries caused by car bomb, mine shales or non-fired missiles which are seen mostly in the peripheral rural areas.

Results

From April 2003 to December 2015, 4098 casualties with missile injuries admitted to the emergency department of Al-Zahrawi surgical hospital, in Misan, Iraq. Misan province population according to the basis of 2004 UNDP/ Iraqi Ministry of Planning population estimates was 787072 persons [5]. 3550 (86.6%) patients affected by bullet injuries and 548 (13.4%) suffered

from explosive injuries. Male patients (84.7% for bullet injuries; 90.1% for explosive injuries) are affected more than female patients. Regarding the age, patients in the 2nd ,3rd,and 4th decades are mainly affected in both groups (bullet and explosive injuries) , which reflects the impact of the problem on active groups of the community (Figure1). Regarding the residency, missile injuries (bullet and explosive injuries) affect urban areas more than rural areas in both groups (Figure 2). Annual distribution of bullet injuries, shows peaked increase in years 2003-2007, (this period was characterized by civilian insecurity and political instability), another peak seen in the years 2013-2014 (Figure 3). Iraq passed through a period of political instability and civilian insecurity during the years 2003- 2007, another period of insecurity occurred during the years 2014 -2015 onward with invasion of Daesh (ISIS) to the northern part of the country this explanation is less clear in case of explosive injuries (Figure 4). Death on scene reflects either the patient was severely injured or injury was affecting the vital structures, this was seen in 49 casualties, all of them were due to bullet injuries, patients in the 3rd and 4th decades are mainly seen in this group (Figure 5). The sites of injuries were mainly due to cerebral injuries in 17 patients (34.7%), thoracic injuries in 14 patients (28.6%), the limbs 9 patients (18%). Those patients with limbs' injuries were suffering from vascular injuries and severe exsanguination (Table 1).



	1-10 years	11-20 years	21-30	31-40	41-50	51-60	61-70	71-80	81-90
Bullet	7.4	17.3	36.9	21.9	11.5	3.9	1.01	0.06	0.03
Explosive	8.6	19.3	37.6	17.2	12.2	4	0.9	0.2	0

Figure 1: Age distribution of patients with civilian missile injuries

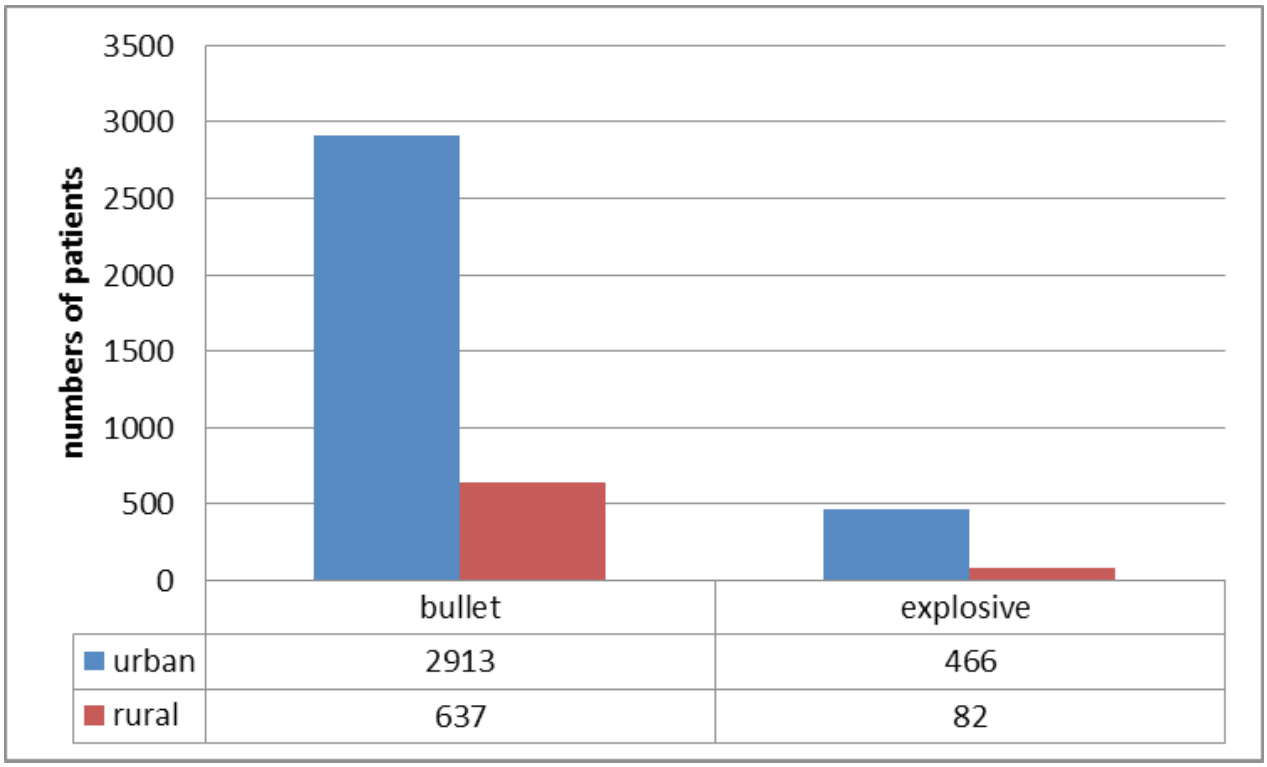


Figure 2: Residency of patients with civilian missile injuries

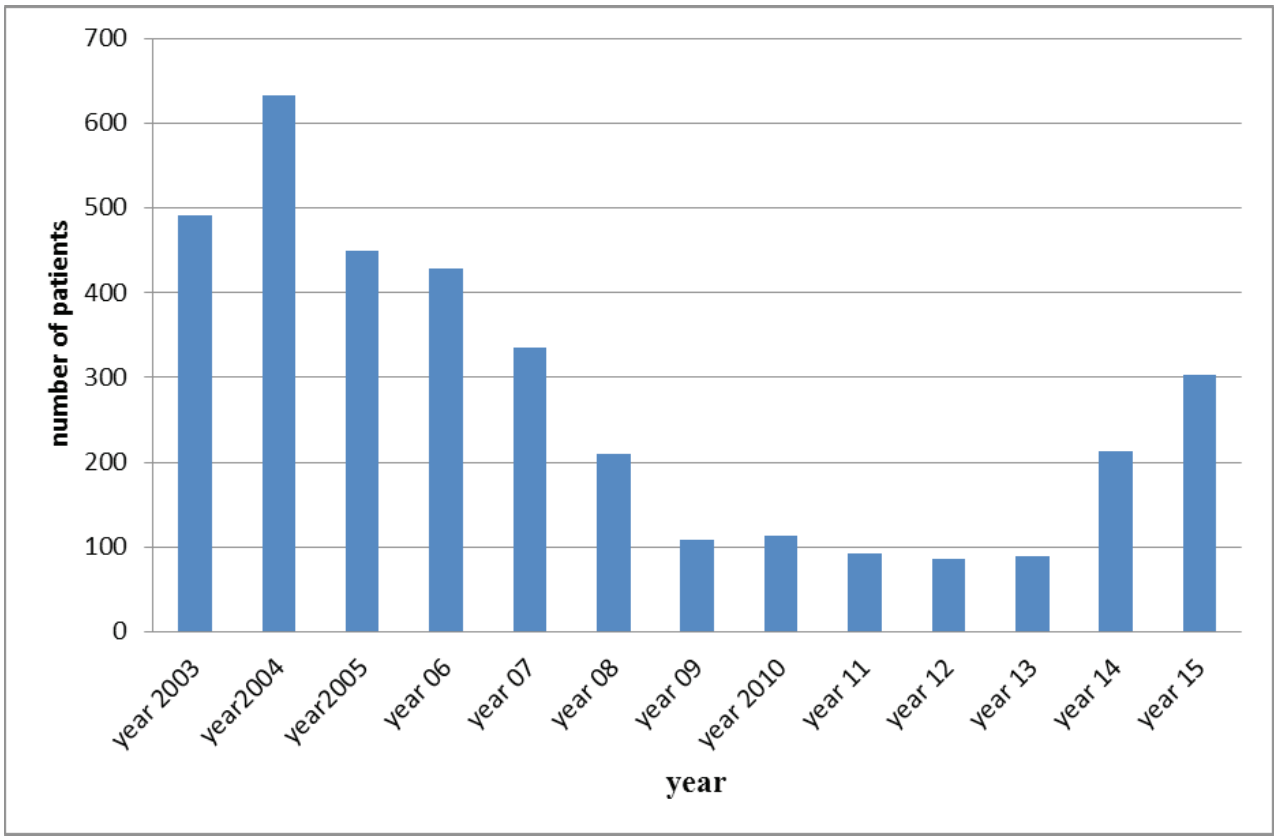


Figure 3: Annual distribution of patients with bullet injuries

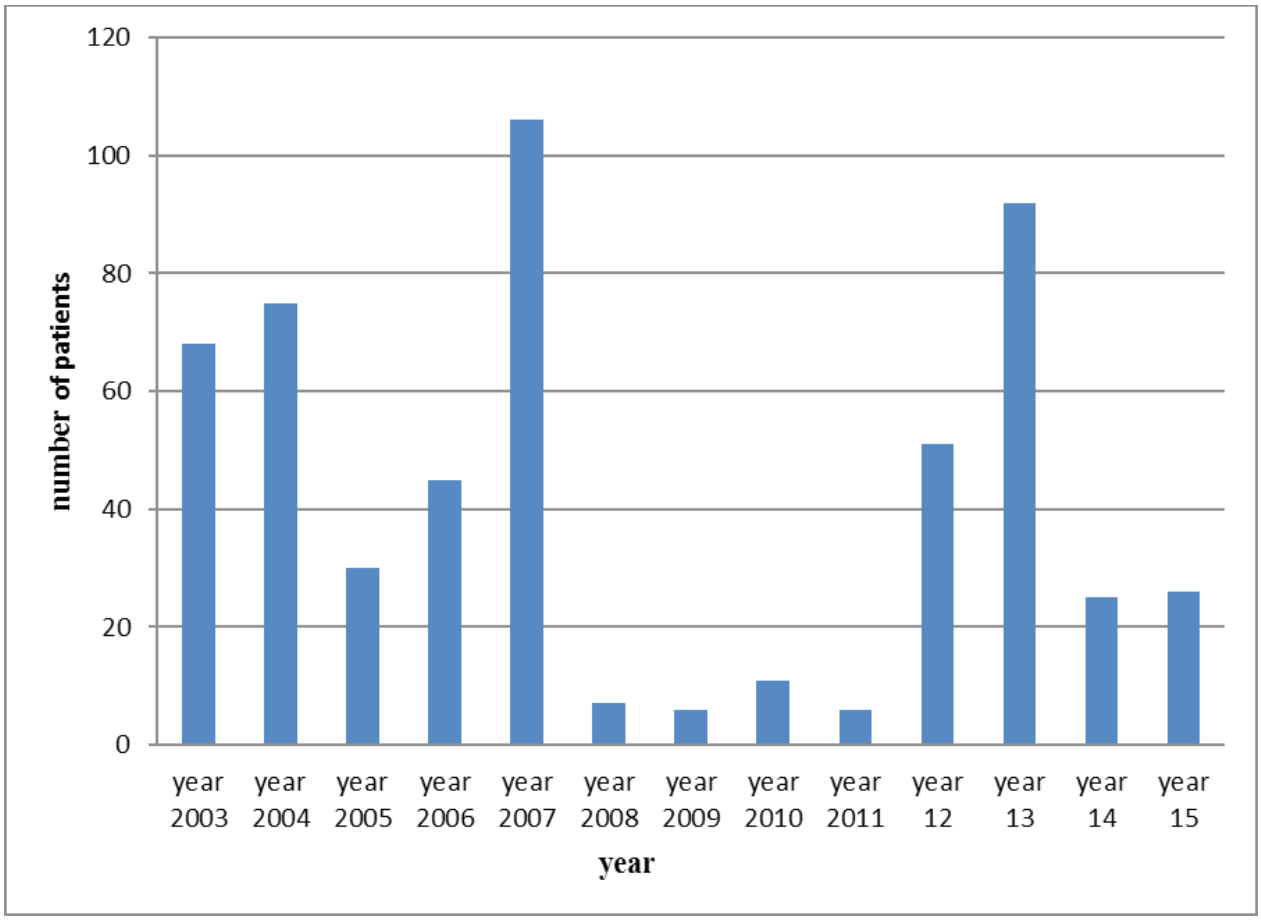


Figure 4: Annual distribution of patients with explosive injuries

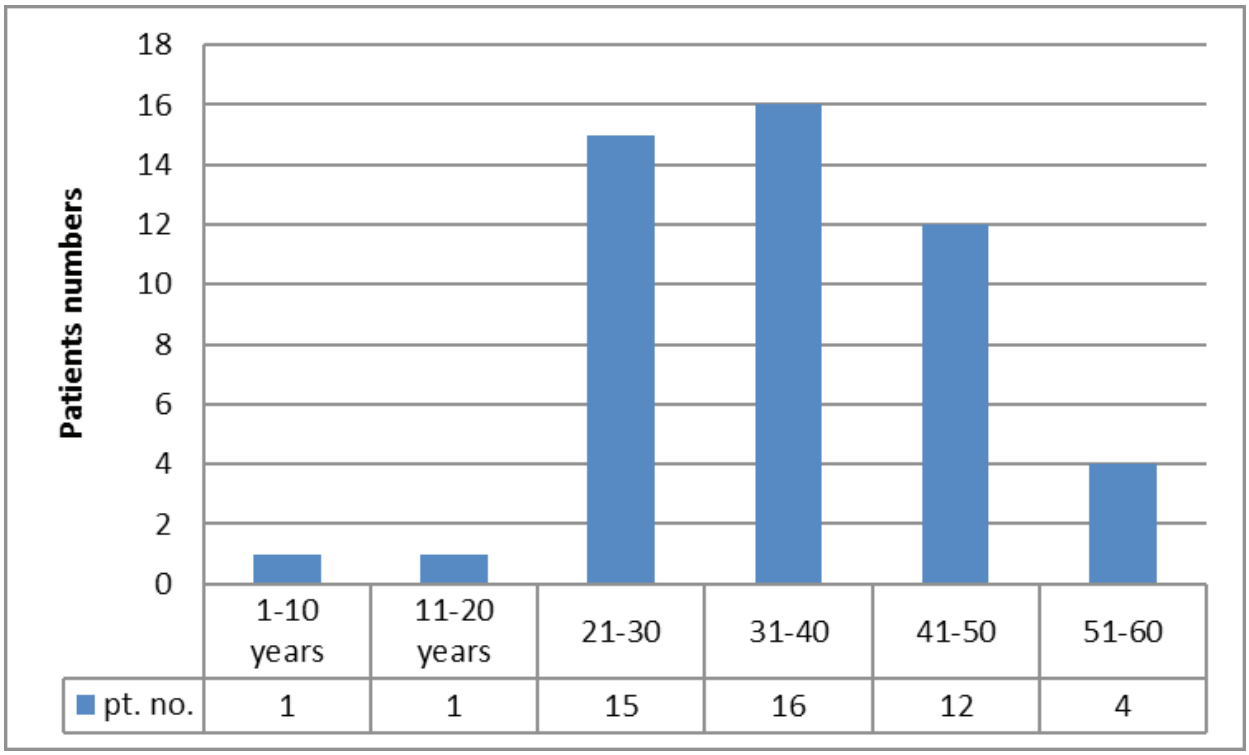


Figure 5:Death on scene, age of patients

Table 1. Death on scene, site of injury

Site of injury	No. of patients	%
Abdomen	4	8.2
Chest	14	28.6
Limbs		18.4
Upper limbs	3	
Lower limbs	6	
Head	17	34.7
Neck	3	6.1
Back	1	2
Multiple sites	1	2
Total	49	100%

Discussion

Following the invasion of Iraq by collision forces in 2003 , the country passed through different periods of civilian unrest which arises from the principles of the recent war ,that depends on rapid high intensity military action, that leave civilian mass population lives at relatively unstable circumstances which results in the reduction of personal security, and non-effective application of legislation which arrange the social relations and civilian peace.

A second important factor is the wide spread of weapon (of different types) within different levels of the community, and the absence of effective legislations that regulate the use of these weapons in the civilian life throughout the country.

This study is trying to verify the spectrum of an important problem that arises in Iraq after 2003, that is the civilian injuries caused by missile agents, whether bullet, shales or fragments of non-fired missile, which accidently gate fired by civilian activities (accidental hits, or manipulated by children accidently).

In this study, bullet injuries were responsible for 84.7% of injured patients, whereas the reminder were caused by explosive injuries. A reverse picture was seen in 1991 invasion of Iraq (gulf war), because it was more to be a military battle field, than civilian battle field in which the study was done after 2003 [6].

The study shows that male subjects are affected more commonly than female subjects, because they are involved in outdoor activities more than females so they are more exposed to injuries.

Middle aged patients in the 2nd, 3rd, and 4th decades of life are affected by missile injuries more than other age groups in both sexes, this reflects that the problem is mainly affecting the active groups in the community. These results, were seen in another studies, as Jeffrey M. Nicholas, et al they showed penetrating bullet injuries affect mainly young urban males[7,8,9] .

Annual distribution of bullet injuries in this study reveals two peaks, the first during years 2003-2007, a second peak during years 2014-2015, these two periods were characterized by civilian unrest in the country, whether by political reasons for the first peak or because

of the invasion of groups of Daesh(ISIS) (Islamic radical groups that invades large areas in the country on year 2014). A similar picture was seen in a study by Gilbert Burnham, that a maximum number of violent deaths in Iraq (all over the country) was in the period from April 2003-to June2006 [10] . Another data from the Multi-National Corps-Iraq (MNC-I) estimated that the civilian casualty rate at 117 deaths per day between May, 2005, and June, 2006 [11, 12, 13, 14].

For those patients who died on scene, middle age were mainly affected and the commonest site of injury was cerebral injuries (head injuries), thoracic injuries and injuries to the extremities.

Brett D. Owens et al, and Sean P. Montgomery et al, both studies reported that wounds' distribution in Operation Iraqi Freedom and Operation Enduring Freedom, the commonest site of injury was seen in extremities (54.1%),then head injury (29.4%) [15,16] . Howard R. et. al, in their study of profile of combat injury, showed that one tenth of deaths were caused by hemorrhage from wounds in the extremities[17] .

The study shows that fatal injuries was due to bullet injuries rather than explosive injuries, this phenomena is seen in most of modern conflicts, as seen by study in Somalia by Robert L. Mabry, et al, they found that gunshot injuries especially if associated with fracture ,nerve or vascular damage, were mostly fatal injuries [18] . Where as in other studies, fragment injuries were responsible for the largest fraction of survivable injuries which were mainly affecting the non-vital areas of the body and were typically less severe[19, 20, 21, 22, 23, 24,25] .

Conclusions

Effective legislations should be established in the country to regulate and limit the use of weapons in the civilian life. Political stability should be enhanced as it has important effect on the community security to reduce this type of injuries. International supports should be applied to the country to gate rid of non-fired missiles and mines which are of great risks for civilian activities.

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