

Original Research Article

Traumatological emergencies: epidemiological and problematic aspects of care in the orthopedics traumatology department of the CHU Ignace Deen in Conakry

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ABSTRACT

Background: A trauma emergency is any aggression (direct or indirect) external to the body for which no therapeutic delay is allowed at the risk of endangering the patient's life or the functional prognosis of his limbs. The objective of this study was to report the results of the management of traumatological emergencies.

Methods: This was a descriptive cross-sectional study from 11 January 2021, to 11 July 2021. It focused on patients seen for traumatological emergencies in the CHU Ignace Deen Orthopaedics-Traumatology department.

Results: Trauma emergencies constitute 75.2% of admissions to the emergency department. The average age of the patients was 32.2 years, with extremes of 1 and 91 years. There was a predominance of 76.3% males with a ratio (M/F) of 3.2. Road traffic accidents were the most found aetiology in 82.9%, and motorcycles were involved in 68.7%. Limb fractures were found in 34.7%. The treatment time was ≤6 hours in 67.5%, and 203 patients received drug treatment, i.e., 49.7%.

Conclusions: Trauma emergencies constitute, by their frequency and seriousness, a real public health problem in Africa in general and in Guinea in particular.

Keywords: Traumatological emergencies, Epidemiology, Management

INTRODUCTION

Trauma emergencies are all external attacks (direct or indirect) on the body for which no therapeutic delay is allowed at the risk of jeopardizing the patient's life or the functional prognosis of his limbs. They are becoming increasingly frequent, and their management requires a great deal of knowledge and know-how on the part of the nursing staff.¹ The rapid urbanization of large African

cities and users' non-respect of the highway code are often the cause of road traffic accidents, sometimes causing severe injuries. The causes can be domestic accidents, accidents at work, sports accidents, voluntary and involuntary blows and injuries.² When they are not fatal, these accidents sometimes lead to severe handicaps, which often pose problems for the socio-professional reintegration of patients.³

The objective of this study was to report the results of the management of traumatological emergencies.

METHODS

This descriptive cross-sectional study lasted six (6) months, from 11 January 2021, to 11 July 2021. We targeted all patients seen in the surgical emergency department and of Orthopedics-Traumatology of CHU Ignace Deen in Conakry (Guinea). The study population consisted of patients admitted for traumatological emergencies.

Inclusion criteria

We included all patients received and treated for traumatological emergencies.

Exclusion criteria

Cases of death observed on arrival at the emergency department and patients seen for non-traumatic emergencies were excluded from the study.

Sampling

The sampling was exhaustive and concerned all traumatological emergencies meeting the selection criteria.

Data analysis

Quantitative variables were expressed as mean ± standard deviation and qualitative as proportions. Analyzes were performed using SPSS 21.0 software.

Procedure

For this, we studied the quantitative (frequency, age, evolution) and qualitative (sex, profession, clinical and therapeutic) variables. A senior traumatologist or a senior emergency physician conducted the clinical examination on the arrival of patients in the emergency department. The patients were classified according to Champion's Trauma Score into three groups (Table 1).⁴ We requested imaging examinations (X-ray and CT) and emergency physical examinations (THb, GS/RH, TP/TCK, Glycemia) on the paraclinical level. On the therapeutic level, we have adopted the following protocol:

Patients in groups I and II were admitted to the intensive care unit and then redirected to the Orthopedics-Traumatology department after improvement in their state of consciousness and general condition. Drug treatment consisted of resuscitation, administration of analgesics, antibiotics, antitetanus serum and low molecular weight heparin. As for available treatment, it concerns cases of pelvic fracture. For cases of dislocation, sprain, and some cases of simple limb fractures, we performed orthopaedic treatment. Surgical treatment consisted of debridement of

wounds and reduction and osteosynthesis of fractures. The following implants were used (screwed plate, nail, and external fixators). Patients in group III were treated according to the same protocol, except they did not benefit from resuscitation before their specialized care. They were followed on an outpatient basis by appointment.

Table 1: Champion's Trauma score.⁴

Groups	Characteristics
Group I: Serious or 1st-degree traumatological emergencies	Patients with a CHAMPION score ≤ 10. These were polytraumatized patients or severe trauma patients suffering from one or more vital failures whose management required urgent resuscitation.
Group II: Moderate or 2nd-degree traumatological emergencies	Patients with a trauma score between 11 and 13. These moderate traumatological emergencies included traumas that did not immediately threaten the injured person's life but could cause subsequent death or sequelae disabling (open limb fractures, dislocation of large joints).
Group III: Minor or 3rd-degree traumatological emergencies	Patients whose lesions had no impact on the significant vital functions and whose care can wait several hours without danger to the patient's life. These are superficial traumatic wounds, sprains, and simple fractures.

RESULTS

Of 544 patients in the emergency room, 409 had trauma emergencies, a frequency of 75.2%. The average age of the patients was 32.2±15.8 years with extremes of 1 and 91 years, and the age group of 21 to 40 years was the most affected at 53.8%. There are 312 men (76.3%) and 97 women (23.7%), with a sex ratio of 3.2. Pupils and students constituted the most affected socio-professional stratum in 23% of cases, followed by workers in 18.6%. For the transport of the injured, taxis were used in 49.9%, followed by personal vehicles and motorcycles in 20% and 15.4%, respectively. An ambulance transport was found in 12.5% of cases, and 2.2% of victims came to the hospital on foot. Road traffic accidents (acr) were the most found aetiology with 339 cases or 82.9%, followed by work accidents with 21 cases or 5.2%. Motorcycles were the vehicle most incriminated in these traffic accidents, with 233 cases or 68.7%, followed by cars with 106 or 31.3%. According to the lesions, the fracture was the most found, with 142 cases or 34.7%, followed by traumatic wounds with 104 cases or 25.4%. According to the champion's trauma score, moderate trauma emergencies were the most

frequent (172 cases), followed by minor trauma emergencies (162 cases).

Table 2: Distribution of patients according to socio-professional strata socio-professional layers number percentage (n=409).

Socio-demographic characteristics	N	%
Age groups (years)		
1-20	91	22.2
21-40	220	53.8
41-60	65	15.9
>60	33	8.1
Sex		
Male	312	76.3
Female	97	23.7
Socio-professional layers		
Trader	50	12.2
Driver	44	10.8
Biker	28	6.8
Student	94	23
Housewife	18	4.4
Military	2	0.5
Civil servant	48	11.7
Laborer	76	18.6
Other	49	12
Total	409	100

Table 3: Distribution of patients according to aetiology.

Aetiology	N	%
Road traffic accident	339	82.9
Sports accident	3	0.7
Domestic accident	9	2.2
Accident of work	21	5.2
Voluntary blows and injuries	17	4.2
Firearm	3	0.7
Bladed weapon	1	0.2
Accident by rail	1	0.2
Drop	15	3.7
Total	409	100

Table 4: Distribution of patients according to traumatological lesions.

Traumatic injuries	N	%
Traumatic wound	104	25.4
Bruise	45	11
Sprain	13	3.2
Dislocation	8	2
Fracture	142	34.7
Traumatic amputation	2	0.5
Polytrauma	28	6.8
TCE-loss of consciousness	20	4.9
TCE+loss of consciousness	47	11.5
Total	409	100

The time to treatment was less than or equal to 6 hours in 276 patients, i.e., 67.5%, and greater than 6 hours in 133 patients, i.e., 32.5%. Drug treatment was used in 203 patients, i.e., 49.7%, followed by surgical and orthopaedic treatment in 23.2% and 15.4%, respectively. Only 3.7% of patients received available treatment. Two hundred patients were followed on an outpatient basis; 121 were hospitalized, 39 were transferred to other departments, and 33 were discharged against medical advice. We have recorded 13 cases of death and 3 cases of escape.

Table 5: Distribution of patients according to the champion's trauma score.

Trauma Champion Score	N	%
Groupe I	75	18.3
Groupe II	172	42.1
Groupe III	162	39.6
Total	409	100

DISCUSSION

The frequency of trauma emergencies was 75.2%. Assouhoun et al reported 477 cases of various traumas, a frequency of 96%.⁵ This high frequency could be explained by the fact that our structure is one of the national reference centres regarding traumatology. The age groups from 21 to 40 were the most affected at 53.8%, with an average age of 32.2 years, the extremes of 1 year and 91 years. Diango et al found an average age of 29.04 years with a predominance of the age group from 15 to 29 years in 43% of cases.⁶ This reality shows the youth of the population of our continent and the dynamism of those who, for the most part, constitute breadwinners. The male sex was the most represented, with a frequency of 76.3% and a sex ratio of 3.2. Kaboro et al made the same observation in their study, reporting a male predominance of 78.8%.⁷ This male predominance is related to the advent of motorcycle taxis. The occupation was practised mainly by male subjects. Taxis were the most used means of transport for evacuating patients at 49.9%, followed by personal vehicles at 20%. Assouhoun indicated that 82.73% of patients were transported by medical vehicles.⁵ Using non-medical pick-up and transport of accident victims in our country shows the legal vacuum that must regulate this sector and the weakness of civil protection. This weakness is material and human. Road traffic accidents were the most found aetiology, i.e., 82.9%, followed by work accidents, i.e., 5.2%. Assouhoun et al.⁵ reported in their study that road accidents were the cause of injuries, i.e., 72.3% of cases. The predominance of road traffic accidents in our study would be linked to the proliferation of motorized two-wheeled vehicles, excessive speed, non-compliance with the road code by users, and the dilapidation of roads and certain wheeled vehicles. Motorcycles were the type of machine involved in these accidents in 68.7% of cases, followed by cars in 31.3%. Baonga I et al.⁸ found a predominance of motorcycles followed by bicycles with 47.7% and 30.1%, respectively. These findings could be explained by the fact that there are

more motorized two-wheeled vehicles becoming more and more numerous, and the population takes a liking to imprint them to avoid traffic jams and this despite the risks involved. The victims were treated within ≤ 6 hours (67.5%). The delay in immediate care for the victims would be related to the absence of emergency kits and joint health insurance, but also the low socioeconomic level of the patients. Limb fractures were the predominant lesions in 34.7%, followed by wounds in 25.4%. This would be explained by the violence of the traumas linked to speeding, non-compliance with safety instructions, and the absence of a cockpit for these machines. Management was outpatient in 48.9% of patients, and 29.6% were hospitalized in the orthopedics-traumatology department. The high rate of patients treated on an outpatient basis would be because most traumas did not require hospitalization. The lack of medical transport, the problematic access to blood in an emergency, the non-existence of an emergency kit, the insufficiency of qualified personnel and hospital beds, the absence of universal medical coverage and the low socioeconomic level economy of the population were the main difficulties encountered. Despite these difficulties, we obtained a sufficient sample size to understand this problem better.

CONCLUSION

By their frequency and seriousness, trauma emergencies constitute a real public health problem in low-income countries. The inappropriate use of the emergency department and the lack of training of health personnel in first aid are, in fact, the result of the absence of emergency medicine strategies in our country.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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