



Clinical spectrum of injuries at the emergency room in a secondary health facility, southwest Nigeria

Nafiu Olatunde Aigoro^{1*}, Olayinka Richard Williams¹, Mazed A Oloko²

¹ Consultant Orthopaedic Surgeon, State Hospital, Abeokuta, Nigeria

² Senior Registrar, Department of Orthopaedic & Traumatology, State Hospital, Abeokuta, Nigeria

Abstract

Background and Objectives: This study was undertaken to document the epidemiological and clinical pattern of musculoskeletal injuries seen at a secondary health facility, southwest, Nigeria

Patients and Methods: A descriptive prospective study conducted in the Emergency department of the Health institution from February to June 2022. All consecutive injured patients who consented were included in the study. Ethical approval was obtained from the hospital ethical committee.

Results: A total of 101 patients with various injuries were attended to at Emergency Department. There were 70(69.31%) males and 31(30.69%) females, with age ranging from 5 years to 85years (mean age is 34 years). Only 13(12.87%) of these patients had any form of pre-hospital care before presentation. Road traffic Accident accounted for 73(72.8%) cases, Fall 10(9.9%) cases, whilst assault accounted for 8(7.9%) cases. Home accident accounted for 2(1.98%) of cases, and Burns, Cult clash, Sport Injury and Dog bite accounted for 1 case each. Soft tissue Injury (Bruises/Lacerations) was the commonest type of injury (31.68%) followed by fracture (28.7%), Head injury (17.82%), Chest Injury (1.98%). Death was recorded in 1 case which was due to severe head Injury.

Conclusion: Road traffic Accident is the commonest cause of musculoskeletal injuries seen at our centre. There is need to improve availability of pre-hospital care of accident victims across the country.

Keywords: Musculoskeletal injuries, trauma care, road crashes, pattern of injuries, aetiology of injuries

Introduction

Musculoskeletal Injury is an ubiquitous condition affecting both sexes, all age groups, and socio-economic strata worldwide. It constitutes an important global public health challenge, causing increasing mortality and disability, especially in developing countries with inadequate Health systems [1-9].

Traumatic injuries represent a significant and growing disease burden in the developed and developing world, and now represent one of the leading causes of death in economically active adults in many countries.

Trauma and Injuries are often interchangeably used, and WHO has projected that it will account for 8.4million deaths per year world-wide by 2020 [9].

Road Traffic Accident has been identified to be the commonest cause of Musculoskeletal injuries and is a major public health concern for which WHO dedicated the 2004 World Health Day to 'Road Safety' to draw attention to the epidemic of road crashes [9].

Trauma care in Nigeria is still evolving, and efforts should be geared toward its improvement. The understanding of the different dimensions of injured patients presenting to the emergency department will provide effort in minimizing the occurrence in terms of preventive measures as well as formulating clinical guidelines in providing adequate and effective trauma care system in our facility

Also, documentation of the causes of injuries in a community will enable means of putting in place appropriate measures to mitigate against this injuries, facilitate effective patient care and provision of acceptable patient outcome.

In this study, the clinical spectrum of musculoskeletal injuries at our secondary healthcare facility was documented in terms of demographic variables along with distribution, mode and patterns of injury of patients presenting in the emergency department.

Methods and Materials

The study was carried out at State Hospital, Abeokuta which is a 200 beds Secondary Health facility in the Ogun State capital – Abeokuta, South-West Nigeria.

The study was a descriptive prospective study conducted at the State Hospital, Abeokuta, South-west, Nigeria between February and June 2022. Approval of the Hospital's Ethics committee was obtained before the commencement of the study.

All consecutive patients with history of trauma presenting with history of trauma were included in the study once consent was obtained from the patients or next of kin. A pre-tested questionnaire was administered by the residents in the Orthopedic Department and/or the casualty officers on duty. Patients from whom history could not be obtained and those not willing to participate were excluded from the study.

Information gathered included bio-data of patients, injuries sustained, cause of injury, mode of transport to the ETR, Sitting position in vehicle, use of seat belt/helmet, pre-hospital care if any, interval between injury and arrival at the Emergency department, and the outcome of care.

A convenient sample size was applied and Data were collated and analysed using simple statistical methods.

Results/Tables

101 patients who presented with various injuries at the Emergency Treatment Room of our facility during the period of study (February to June 2022), and were recruited for the study.

70(69.31%) of the patients were males while 31(30.69%) were females. Table 1 shows the age and Sex distribution of the 101 patients seen during the study period, age range 5 years to 85years, with mean age of 34years. Only 13(12.87%) patients received pre-hospital care, including first aid before presentation at the ETR.

20(19.80%) of the patients walked in by themselves unaided, 42(41.58%) were brought in Vehicles, 12 (11.88%) were brought on motorcycles and only 26(25.74%) were rescued from the accident scenes by an Ambulance. 1 (1%) patient was brought by a Police Van.

65(64.36%) patients presented at A&E within one (1) hour of sustaining the injury, 14(13.86%) patients presented between 1 hour and 6 hours, 4(3.96%) patients presented between 6 hours and 24 hours. 1(1%) patient each came into A&E 24 hours to 48hours, and more than 48 hours, while the interval could not be determined in 12(11.88%) patients. Road traffic crashes accounted for the injuries in 73(72.3%) patients, Fall accounted for 10(9.9%) cases, whilst assault accounted for 8(7.9%) cases. Home Accident accounted for 2 (1.98%) cases, and 1 each was due to Burns, Cult clash, sport injury and Dog bite, (Table 2).

The presumptive causes of Road crashes in 73 cases in the study were over- speeding 28 (38.36%); Burst tyre 4 (5.48 %); Loss of control 24 (32.88%); Drunk Driving 1(1.37%); Brake Failure 1(1.37%), Collision 15(20.55%). Cause of the RTA in 15 cases could not be determined/specified by the informants/patients (Table 3)

14(19.18%) of victims involved in RTA were drivers, 2(2.74%) were Riders, 5(6.85%) were front seat passengers, while 41(56.16%) were backseat passengers. 11(15.07%) were Pedestrians. Sitting position of 6(8.22%) patients could not be obtained.

Table 4 presents the various injuries sustained by the patients which included Fractures in 29(28.71%), Soft injuries in 32(31.68%), Head injuries in 18(17.82%), Blunt Chest Injury 02(1.98%), Burns 1 (1%). Joint Injury 4(3.96%), Dislocation 4(3.96%). Traumatic Amputation in 1(1%), Multiple Injuries 3(2.97%), Dog Bite 1(1%), Body Aches/ Polymyalgia in 5(4.95%)

Analysis of Outcome of Care shows 46(45.55%) were treated and discharged from the ETR, 39(38.61%) were admitted on to the wards for continued care. 11(10.89%) were referred for neurosurgical review and care, including those who requested for referral as they reside outside the city. 4 patients (3.96%) Discharged Against Medical Advise ‘DAMA’, and 1(1%) death was recorded.

Table 1: Age & Sex Distribution

Age (years)	Male	Female	Total (%)
0 – 9	03	02	05 (4.95)
10 – 19	13	04	17 (16.83)
20 – 29	17	05	22 (21.78)
30 – 39	19	04	23 (22.78)
40 – 49	11	10	21 (20.79)
50 – 59	03	01	04 (3.96)
60 – 69	00	02	02 (1.98)
70 – 79	02	02	04 (3.96)
Above 80	02	01	03 (2.97)
Total	70	31	101 (100)

Table 2: Causes of Injuries seen

Cause Of Injury	Number	%
Road Traffic Accident	73	72.3
Fall	10	9.9
Assault	08	7.9
Burns	01	1
Sport Injury	01	1
Home Accident	02	1.98
Cult Clash	01	1
Dog Bite	01	1
Others	04	3.96
Total	101	100

Table 3: Presumptive causes of the RTA Presumptive causes of RTA

Presumptive cause	Frequency (n=73)	%
Over speeding	28	38.36
Burst Tyre	04	5.48
Collision	15	20.55
Lost Control	24	32.88
Drunk Driving	01	1.37
Brake Failure	01	1.37
Total	73	100

Table 4: Pattern of injuries sustained

Injury	Frequency	%
Soft tissue Injuries- Bruises/ Lacerations	32	31.68
Fractures	29	28.71
Head Injury: Scalp / Facial lacerations	11	17.82
Head Injury with LOC	07	
Chest Injury- Blunt	18	1.98
Burns	02	0.99
Joint Injury	01	0.99
Dislocation	04	3.96
Traumatic Amputation	04	3.96
Multiple Injuries	01	1.98
Animal Bite	03	2.97
Body aches/Low back Pain	01	1.98
Total	05	4.95
Total	101	100

Discussion

Our study shows that RTA is the commonest cause of injuries seen at this centre, which is in keeping with findings at other centres [1-7]. This high prevalence of RTA (72.3%) make the provision of adequate facilities to mitigate road crashes imperative in our community. The rate may not be unconnected to the bad road network and poor driving culture, including inadequate maintenance of vehicles. The economic situation in country may also be contributory to the menace.

In the present study, fall is the second commonest cause at 9.9 % (n=101). This contrasts sharply with findings by Thanni *et al* [4] where fall accounted for 1.9% in their series, but still the second commonest cause of injuries. Dziubiński D *et al* [2] reported 27% in their series was due to Fall. Tadesse *et al* reported 21.2% in their series [7].

Assault also constitutes significantly to the cause of injuries seen in the present study accounting for 7.9%, probably due the location of our centre in the heart of the state capital. Solagberu *et al* reported 8.86% of their cases were from Assault. It is the third common cause of injuries in this present study as in other published studies [1-5, 7].

Our study shows a male preponderance with male to female ratio of 2.3:1 amongst the patients. This is similar to the

findings by other authors [1-8]. Male gender tends to be more injury – prone as they are involved in high – risk activities than the female.

In this study, the age groups mostly affected are the economically productive and vibrant groups of 20 – 29 years (n=22, 21.8%), 30 – 39 years (n=23, 22.8%) and 40 – 49 years (n=21, 20.8%) accounting for 66 (65.4%) cases. This has been the experience of other authors [1-8]. This impact negatively on the economy of the community as they fail to contribute to the economy due to the morbidity occasioned by the injury sustained.

Types or pattern of injuries in our study varied, with soft tissue injuries being the commonest, accounting for 31.68% of cases. This is in consonant with findings from other centres, although reported prevalence varies [3, 4, 8]. Tadesse *et al* in Ethiopia however, reported fracture as the commonest at 41.2% followed by Soft tissue injury (Bruises/Lacerations) at 36.7% in their series.

The mortality rate in this series is 1% (1 of 101) and was due to severe Head Injury following Road traffic accident. Thanni *et al* [4] reported 2.1% mortality in their study which is lower than was recorded in our study. Solagberu *et al* reported a mortality rate of 4.4% [3]. However they are all within the worldwide mortality rate of 0.5 - 6%.

Conclusion

Road traffic Accident is the commonest cause of musculoskeletal injuries, and forms part of the triad of Road Crashes, Fall and Assault as the leading causes of Injuries presenting in the emergency rooms. Concerted efforts by government and critical stakeholders should be intensified to ensure Road safety in all communities as ‘Road Safety is no accident’ but a deliberate action. Efforts should also be made to improve pre-hospital care of victims of road traffic accident across the country.

Recommendation

The frequency, severity and fatality of road traffic injuries will be reduced by public education, road safety campaign, and enforcement of road safety laws.

Hospital based single-center study and limited simple size should be considered as limitations of the study, therefore a multicenter study with larger sample size should be considered as it may provide an insight to the magnitude of different injuries in the south west region of Nigeria.

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References

1. Gupta AA, Mishra SK, Uikay S, Maravi D. A study - Incidence and Pattern of Musculoskeletal Injuries among Patients attending the emergency of tertiary health care center in Central India. *J Orthop Dis Traumatol*,2019;2:11- 4.
2. Dziubiński D, Abramczyk U, Ciechanowicz D, Kozłowski J, Pakulski C, Żyluk A. An analysis of

causes of trauma, spectrum of injuries and treatment outcomes in patients treated at Multitrauma Centre of the University Teaching Hospital No 1 in Szczecin in 2015. Comparison of results from years 2015 and 2007; *Pol Przegl Chir*,2019;91(4):29–35.

3. Solagberu BA, Adekanye AO, Ofoegbu CPK, Kuranga SA, Udoffa US, Abdur Rahman LO, *et al*. Clinical spectrum of trauma at a university hospital in Nigeria. *European Journal of Trauma*,2002;28:365-369.
4. Thanni LOA, Kehinde OA. Trauma at a Nigerian Teaching Hospital: Pattern and Documentation at presentation. *African Health Sciences*, 2006, 6(2).
5. Abdul Issa, Nkinda Mbelenge, Philipo L Chalya, Japhet M Gilyoma. Aetiological spectrum, injury characteristics and treatment outcome of multiple injuries at a tertiary care hospital in Tanzania Tanzania *Journal of Health Research*,2018;20(4):1-14.
6. Balogun JA, Abereje OK. Pattern of road traffic accident cases in a Nigeria University teaching Hospital between 1987 and 1990. *JTrop Med Hyg*,1912:95:23-9.
7. Tadesse B, Tekilu S, Nega B, Seyoum N. Pattern of Injury and Associated Variables as Seen in the Emergency Department at Tikur Anbessa Specialized Referral Hospital, Addis Ababa, Ethiopia. *East and Central African Journal of Surgery*, 2014, 19(1).
8. Thapa S, Upreti AR, Dawadia BR. Spectrum of Injury Presenting to Emergency Department in A Tertiary Care Hospital in Nepal: A Descriptive Cross-sectional Study. *JNMA*, 2020, 58(229).
9. World Health Day 2004: Road safety is no accident. WHO Publication 7th April, 2024. www.emro.who.int. Accessed 22 December 2023