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Clinical Profile, Management, and Outcomes of Chest Injury Patients in Level III Hospitals in the Southwest Region of Cameroon

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1. Abstract

Chest injuries are a major cause of trauma-related morbidity and mortality, particularly in low- and middle-income countries (LMICs) where healthcare resources are limited. However, data on the patterns and outcomes of chest trauma in regional hospitals in Cameroon remain scarce. This study aimed to determine the epidemiology, clinical profiles, management, and outcomes of patients hospitalized with chest injuries in two Level III hospitals in the South-West Region of Cameroon. A retrospective descriptive study was conducted at Buea and Limbe Regional Hospitals from 2015-2020. Medical records of patients admitted with chest injuries were reviewed. After applying inclusion and exclusion criteria, 146 patient records were analysed. Data on demographics, aetiology, injury patterns, management, complications, and outcomes were collected using structured forms and analysed using SPSS version 26. Males predominated (78.1%), with young adults aged 20–39 years most affected (56.2%). Road traffic crashes (RTCs) were the leading cause (62.3%), primarily involving motorbike accidents (13.7%), followed by falls (16.4%) and assaults including gunshot wounds (11.64%). Blunt injuries accounted for 59% of cases, with chest contusions (50.0%) and rib fractures (21.2%) being the most common lesions. Hemothorax was present in 14.1% of cases. Most injuries were mild (AIS 1: 63.7%; ISS 1–8: 75.3%). Over half (56.85%) had associated injuries, mainly to the head and neck. Chest radiography was used in 69.18% of cases, while CT scans were rarely utilized (2.74%). Analgesia was universally administered; chest tube insertion was performed in 13.01% of patients. The majority (93.15%) had no complications. Most patients were discharged (84.93%), with a hospital stay of less than five days in 58.22% of cases. Mortality was 4.11%. Chest injuries in this setting predominantly affect young males, mainly due to RTCs and violence. Most cases are mild and managed conservatively, though diagnostic and therapeutic limitations persist. Strengthening trauma systems and preventive strategies is essential.

2. Introduction

Injuries both unintentional and violence-related are a major global health concern, responsible for approximately 4.4 million deaths annually, equating to over 16,000 deaths per day and nearly 8% of all global mortality (World Health Organization [WHO], 2024a). This burden surpasses that of many infectious diseases. For instance, in 2019, malaria and HIV/AIDS caused an estimated 409,000 and 690,000 deaths respectively (WHO, 2024b; WHO, 2024c), while COVID-19 accounted for approximately 1.4 million deaths globally by January 1, 2021 (WHO, 2024d). Despite this staggering toll, injury remains under-recognized in global health discourse. Trauma has been referred to as "the neglected disease of modern society," highlighting the disparity between its impact and the attention it receives [1].

The leading causes of injury-related morbidity and mortality include road traffic crashes (RTCs), violence, falls, burns, and drowning many of which are preventable. Alarmingly, over 90% of injury-related deaths occur in low- and middle-income countries (LMICs), where weak infrastructure, limited emergency care, and socioeconomic vulnerabilities exacerbate outcomes (WHO, 2024a; [2]). Poverty increases exposure to hazardous environments and restricts access to timely, life-saving medical interventions [3].

Among trauma-related injuries, chest trauma is particularly critical due to its impact on vital functions such as respiration and

circulation. Chest injuries account for approximately 10% of all trauma cases and contribute to about 25% of trauma-related deaths, ranking third after head and abdominal injuries [4]. Mortality is often driven by life-threatening conditions such as tension pneumothorax, massive hemothorax, cardiac tamponade, and airway obstruction, which require rapid diagnosis and intervention.

Chest injuries are broadly categorized into blunt (non-penetrating) and penetrating trauma. Blunt thoracic injuries are primarily caused by RTCs and falls which are more prevalent globally, especially in LMICs [5]. Penetrating injuries, often resulting from stab wounds or gunshots, are increasingly reported in regions affected by armed conflict and sociopolitical instability ([6]; UN-OCHA, 2024). Chest trauma rarely occurs in isolation; it is frequently part of polytrauma involving the head, abdomen, spine, or extremities, complicating diagnosis and management. Severity scoring systems such as the Abbreviated Injury Scale (AIS) and Injury Severity Score (ISS) are essential tools for predicting outcomes and guiding treatment [7].

In Cameroon, data on chest trauma are limited and often embedded within broader trauma studies. At Yaoundé Central Hospital, chest injuries represented 4% of RTC-related admissions [8], while a similar rate (4.5%) was reported in a level III hospital in the Adamawa region. A decade-old study from Yaoundé identified RTCs as the leading cause of chest trauma, followed by falls and domestic accidents, with most cases managed conservatively due to limited surgical capacity [9]. However, no comprehensive data exist for the South-West region of Cameroon, a region marked by sociopolitical unrest, rising interpersonal violence, and increasing gunshot injuries, all of which likely influence the epidemiology and clinical presentation of chest trauma [10] UN-OCHA, 2024).

Specialized surgical expertise is scarce in the South-West region. At the time of this study, no thoracic surgeon was practicing in the area, and general surgeons were few and often overwhelmed. Consequently, general practitioners and medical officers are the primary responders to chest trauma cases. Many lack adequate training in managing penetrating chest injuries, particularly those caused by firearms-a growing concern due to ongoing civil unrest [11] gap in expertise, compounded by limited diagnostic resources, undermines the quality of initial assessment and care.

Although physical examination remains a cornerstone of trauma evaluation, accurate diagnosis of chest injuries often requires imaging. Unfortunately, advanced modalities such as computed tomography (CT) scans are either unavailable or inconsistently accessible in regional hospitals. Buea Regional Hospital (BRH) and Limbe Regional Hospital (LRH), both classified as level III facilities, serve as primary referral centers for trauma care in the South-West region, managing chest injuries under significant resource constraints [12].

Given these challenges, there is an urgent need for updated, context-specific data on chest trauma in this understudied region. This study aims to provide a contemporary profile of chest injury cases at BRH and LRH, analysing aetiology, clinical presentation, treatment approaches, and outcomes. The findings will inform local clinical practice, enhance trauma care protocols, and support advocacy for improved resource allocation and policy development in Cameroon and similar LMIC settings.

3. Materials and Methods

3.1. Study Design

This study was a descriptive, retrospective, hospital-based analysis conducted from January 2015 to December 2020 using patient records from two regional hospitals in the South-West Region (SWR) of Cameroon.

3.2. Study Sites

The study was conducted at Buea Regional Hospital (BRH) and Limbe Regional Hospital (LRH), both Level III healthcare facilities located in the SWR of Cameroon (Figure 1).

The SWR is one of the two English-speaking regions in Cameroon, covering an area of 25,410 km² with an estimated population of 1,553,300 as of 2015. It is administratively divided into six divisions and is home to Mt. Cameroon, the highest peak in West and Central Africa (Figure 1). The region's major urban centres are Buea (regional capital) and Limbe. Agriculture is the predominant economic activity, and motorcycles are a common mode of transportation in both urban and rural areas. Since 2017, the region has been affected by an ongoing armed conflict, which has significantly disrupted socioeconomic life and contributed to increased trauma-related injuries, although exact casualty figures remain undocumented.

Limbe Regional Hospital (LRH) is a 200+ bed facility and one of the two principal referral hospitals in the region. Established in 1940, it has undergone multiple rehabilitations and currently serves as a teaching hospital for students from the Faculty of Health Sciences, University of Buea. The hospital is equipped with various clinical units, including an imaging center staffed by three radiologists and supporting technicians. Diagnostic imaging services include a high-quality X-ray machine and a Computed Tomography (CT) scanner. Additionally, LRH has a four-bed intensive care unit (ICU) for critically ill patients.

Buea Regional Hospital (BRH), originally established as an annex of LRH, is also a Level III hospital and functions as a teaching institution. Located in Buea, Fako Division, at the foot of Mt. Cameroon, BRH offers a wide range of surgical services. During the study period, the surgical ward was staffed by at least one general surgeon. However, BRH lacked advanced imaging capabilities—only radiography and ultrasonography were available, and image quality was inconsistent. Notably, the hospital did not have an ICU during the study period.

3.3. Study Population and Sampling

The study population consisted of all patients admitted to the surgical units of BRH and LRH within the specified timeframe who met the inclusion criteria. A non-probabilistic, convenient sampling method was employed due to the retrospective nature of the study.

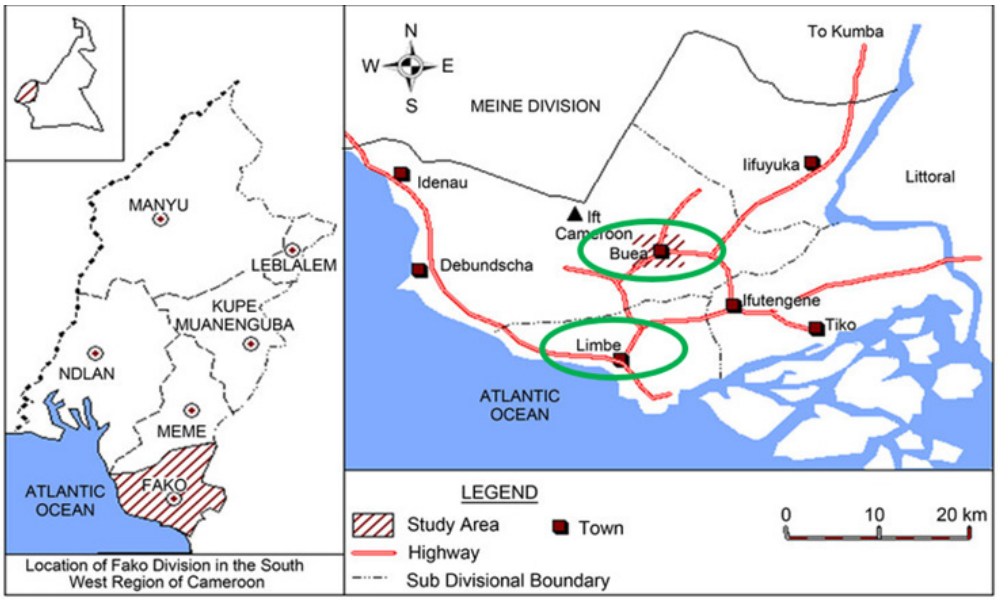

Figure 1: Map of the study area [18].

3.3.1. Inclusion Criteria

• All medical records of patients with at least one diagnosed chest lesion or a documented history of chest trauma.

2.3.2 Exclusion Criteria

• Incomplete medical records, defined as files lacking essential information on injury type or patient outcome.

• Patients with superficial chest lesions that did not compromise the integrity of the chest wall (e.g., minor burns or superficial lacerations).

• Patients whose primary diagnosis involved significant underlying medical conditions unrelated to chest trauma and which predominantly influenced their clinical outcome.

3.4. Study Procedure

Ethical clearance was obtained from the Institutional Review Board (IRB) of the Faculty of Health Sciences, University of Buea. Administrative approvals were also secured from the Regional Delegation of Public Health for the SWR, as well as from the hospital administrations of BRH and LRH.

Patient records were systematically reviewed to identify eligible cases. The review began with files from BRH, followed by those from LRH. Data were collected using structured, pre-tested data extraction forms. The following variables were recorded: Demographic information (age, sex, residence), occupation, date of admission, past medical history, mechanism of injury, clinical diagnosis. Other information collected include; Details of chest lesions (including Abbreviated Injury Scale [AIS] for the chest and Injury Severity Score [ISS]), diagnostic investigations performed, management interventions, duration of hospitalization, complications encountered and final outcome (discharge, death, referral, or left against medical advice). Collected data were anonymized and analysed as described below.

3.5. Data Management and Analysis

Each data collection form was assigned a unique code to ensure patient confidentiality. Data were entered into CSPro version 7.3 for digital storage and managed securely. Subsequent statistical analysis was performed using SPSS version 26, assisted by a qualified biostatistician.

Categorical variables were summarized using frequencies and proportions, while continuous variables were presented as means and medians, depending on distribution. Results were displayed using tables and figures. Where appropriate, inferential statistics such as the chi-square test were used to assess associations between variables.

3.6. Ethical Considerations

This research involved secondary analysis of existing patient records and posed no direct risk to participants, as no experimental intervention was conducted. However, ethical rigor was maintained throughout the study.

Given the retrospective design, individual informed consent was waived, in accordance with ethical guidelines for such studies. Confidentiality of patient data was strictly observed through anonymization and secure data handling. There was no anticipated conflict of interest, and none arose during the course of the study. The ethical committee served as the primary oversight body (“gatekeeper”) to ensure compliance with national and institutional research ethics standards.

4. Results

A chest trauma study conducted at Buea and Limbe Regional Hospitals in Cameroon reviewed 6,156 patient records. Of these, 2,466 were trauma cases, and 174 involved chest injuries. After excluding 28 cases due to incomplete data or ineligibility, the study analysed 146 patients to assess their clinical profiles, treatments, and outcomes.

4.1. General Characteristics of the Study Population

The chest injury patient data reveals that males constituted the majority of cases (78.1%), with females accounting for 22.9% (Table 1). Young adults were most affected, particularly those aged 20–29 (30.14%) and 30–39 (26.03%), while patients under

20 and over 70 represented smaller proportions (Table 1). Occupation-wise, businesspeople and technicians were the most represented (each 33.5%), followed closely by students and farmers (32.1% each). Drivers also formed a notable subgroup (24.8%) (Table 1). The annual distribution shows a rising trend in chest trauma cases, peaking in 2020 (27.4%) and 2018 (23.3%), with the lowest recorded in 2016 (8.2%) (Figure 3).

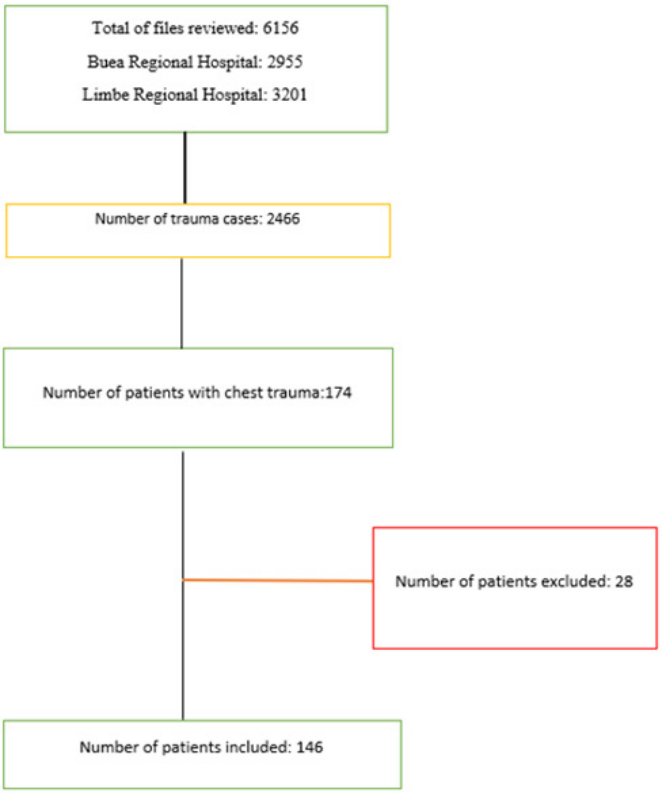

Figure 2: Flow chart showing recruitment of patients' chest injuries at the Buea and Limbe Regional Hospitals.

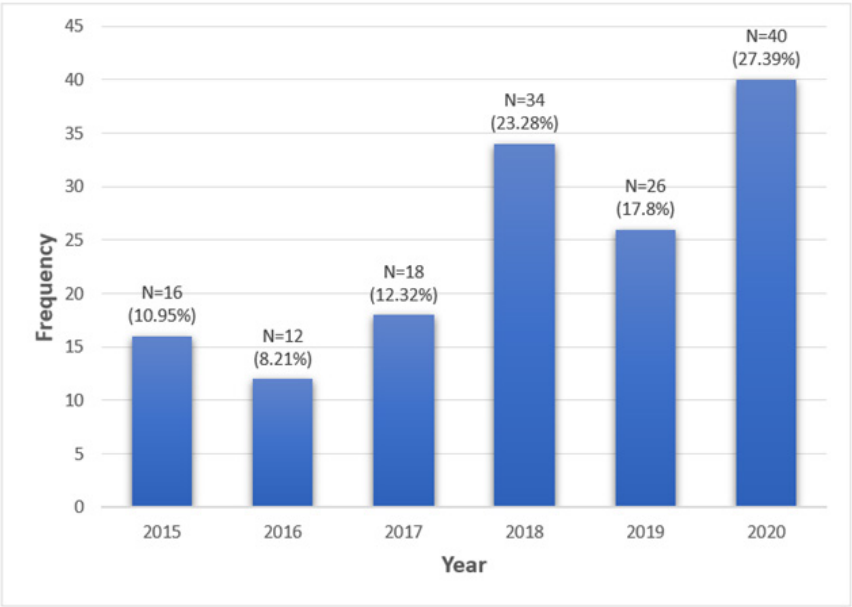

Figure 3: Distribution of patients according to year.

Table 1: Demographic characteristics of the study population.

Variables		Frequency (n)	Proportion (%)
Sex	Male	114	78.10
	Female	32	22.90
Age Group	<20	10	6.85
	20_29	44	30.14
	20_39	38	26.03
	40_49	23	15.75
	50_59	17	11.64
	60_70	6	4.11
	>70	8	5.48
Occupation	Business	23	33.50
	Technician	23	33.50
	Student	22	32.10
	Farmer	22	32.10
	Driver	17	24.80
	Retired	4	5.80
	Law forces	3	4.3
	Fisherman	3	4.3
	Others	12	17.5

4.2. Etiology and Clinical Profiles of Injuries

The distribution of chest injury cases reveals that road traffic crashes (RTCs) were the leading cause, accounting for a substantial portion of the cases. Among RTC-related injuries, motorbike accidents were most frequent accounting 13.70%, followed by car passengers accounting 11.64% and car drivers and pedestrians accounting 6.85% each (Table 2). A notable 15.07% of RTC cases had unspecified mechanisms, highlighting gaps in documentation. Falls were the second most common cause, with injuries from heights greater than 2 meters (10.96%) occurring more often than those from lower heights (4.79%) (Table 2). Assault-related chest trauma comprised 18 cases, with criminal assaults (6.16%) being the most prevalent, followed by physical fights (3.42%) and mob justice (2.05%). Gunshot wounds accounted for 11.64% of cases, underscoring the severity and potential lethality of penetrating trauma (Table 2). Less frequent causes included boat accidents (1.37%) and stone falls (0.68%), categorized under “other causes” (Table 2). Overall, the data emphasizes the dominance of RTCs and violent mechanisms in chest trauma, with a mix of blunt and penetrating injuries requiring varied clinical responses.

Table 2: Distributions of patients by cause of chest injury.

Variables	Sub variables	(Frequency (N	(%) Proportion
RTC	Car Passenger	17	11.64
	Car driver	10	6.85
	Motorbike	20	13.70
	Pedestrian	10	6.85
	Others	3	2.05
	unknown	22	15.07
Fall	meters 2<	16	10.96
	meters 2>	7	4.79
	unknown	1	0.68
Assault	Criminal	9	6.16
	Fight	5	3.42
	Mob justice	3	2.05
	unknown	3	2.05
	Gunshots	17	11.64
Other causes	Boat accident	2	1.37
	Stone fall	1	0.68

4.3. Clinical Patterns of Chest Injuries at the Buea and Limbe Regional Hospitals

Types of injuries

Chest trauma is classified into two: penetrating and non-penetrating (blunt). Non penetrating injuries were more prevalent (59%). Figure 4 illustrates the distribution of lesion types among chest trauma patients in Buea and Limbe regional hospitals. Contusions being the most prevalent, affecting 50.00% of cases followed with rib fractures (7.95%), hemothorax accounts for 14.10%. Less common but clinically important lesions include emphysema (4.49%), hemopneumothorax (3.85%), and rare presentations like flail chest and pneumothorax accounting for 0.64% each. The "others" category (8.33%) likely includes mixed or atypical injuries (Figure 4).

Figure 4 illustrates the severity distribution of thoracic injuries using the Abbreviated Injury Scale (AIS) for the chest, ranging from scores 1 to 5. A majority of patients (63.70%) were classified with AIS score 1, indicating minor injuries such as simple contusions or mild rib fractures. Moderate injuries (AIS 2 and 3) accounted for 15.75% and 17.12% respectively, reflecting more complex trauma like hemothorax or multiple rib fractures. Severe injuries were rare, with only 2.74% of cases scoring AIS 4 and a minimal 0.69% reaching AIS 5, which typically denotes life-threatening conditions like flail chest or major vascular damage (Figure 4).

Associated injuries shows that a majority of chest trauma patients (56.85%) sustained additional injuries beyond the thorax, while 43.15% had isolated chest trauma (Figure 5). Among those with associated injuries, the most affected regions were the head and neck (36.36%), followed by extremities (27.27%) and abdominal injuries (20.91%), indicating a high prevalence of multi-system trauma. External injuries were reported in 10.91% of cases, and facial injuries were the least common at 4.55% (Figure 5).

The Injury Severity Score (ISS) classification of associated injuries reveals that the vast majority of chest trauma patients (75.3%) sustained mild injuries (ISS 1–8), indicating limited systemic impact and lower risk of complications (Figure 4). Moderate injuries (ISS 9–15) were observed in 14.4% of cases, while serious injuries (ISS 16–24) accounted for 8.9%, reflecting more complex trauma that may require closer monitoring or intervention. Only 1.4% of patients experienced severe injuries (ISS 25–49), and none were classified as critical (ISS 50–74) or maximal (ISS 75), which typically denote life-threatening or unrevivable trauma (Figure 5).

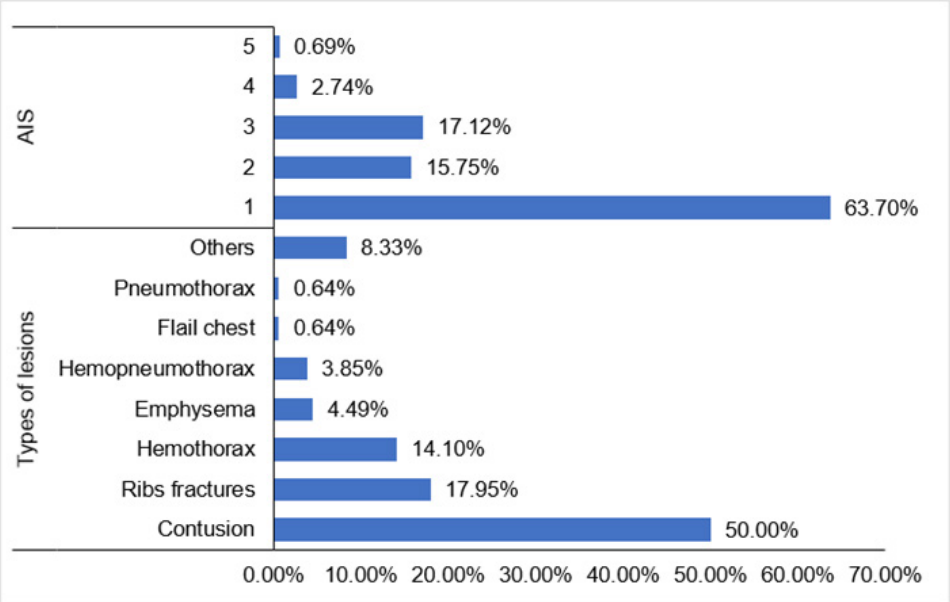

Figure 4: Proportion of specific lesions and Abbreviated Injury Scale (AIS) for chest representation.

Table 3: Chest radiography findings in injured patients.

Injuries	Xray findings	Frequency (N)	Proportion (%)
Rib fracture	Rib fracture ≤ 3	15	28.30
	Rib fracture > 3	7	13.21
Pleural lesions	Hemothorax	22	41.51
	Hemopneumothorax	5	9.43
	Pneumothorax	1	1.89
Others	Atelectasis	1	1.89
	Clavicular dislocation	1	1.89
	Clavicular fracture	1	1.89

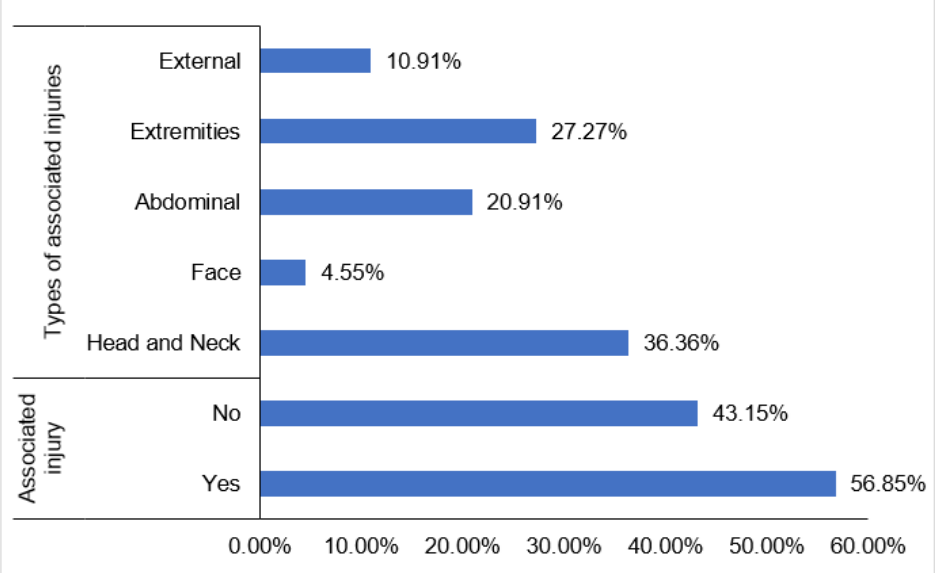

Figure 5: Proportion of Associated injuries and Injury Severity Score (ISS) classification.

4.4. Investigation of Chest Injuries at the Buea and Limbe Regional Hospitals

Figure 6 illustrates proportion of the different imaging modalities reveals that chest radiography was the predominant diagnostic tool used in chest trauma cases, with 69.18% of patients receiving it, while 30.82% did not. In contrast, CT scans were rarely utilized, with only 2.74% of patients undergoing this advanced imaging, and 97.26% not receiving it (Figure 6).

The chest radiography findings reveal that rib fractures were a common injury, with 28.30% of patients presenting with up to three fractured ribs and 13.21% showing more extensive fractures involving more than three ribs (Table 3). Pleural lesions were also prominent, particularly hemothorax, which affected 41.51% of patients indicating significant bleeding into the pleural cavity. Hemopneumothorax and pneumothorax were less frequent, observed in 9.43% and 1.89% of cases respectively (Table 3). Other notable but rare findings included atelectasis, clavicular dislocation, and clavicular fracture, each occurring in 1.89% of patients (Table 3).

The treatment modalities, the complications encountered in those patients and the outcome at the Buea and Limbe regional hospitals

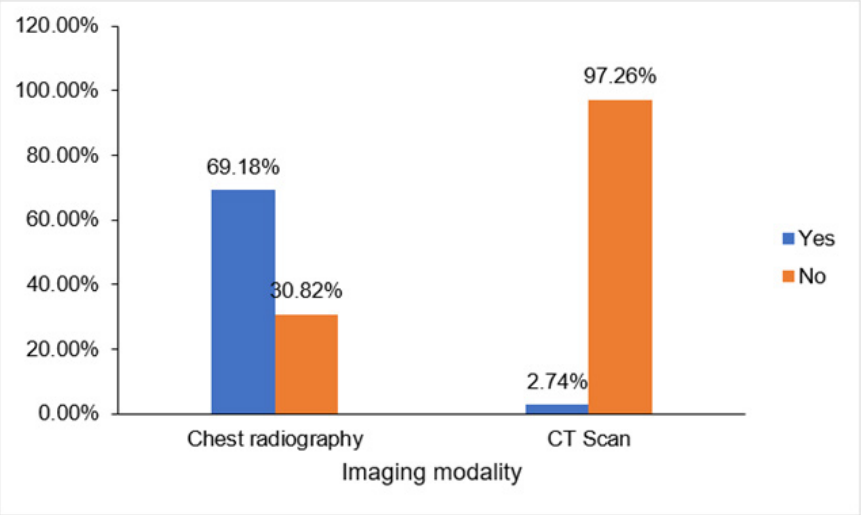

Figure 6: Proportions of the patients with imaging modalities.

4.5. Management Modalities of Chest Injuries

Analgesics were administered to all chest trauma patients, emphasizing their essential role in care. Antibiotics (29.45%) and chest tube insertion (13.01%) addressed infections and pleural injuries. Less common interventions included extra-thoracic surgery (4.80%), blood transfusion (4.11%), and oxygen therapy (0.69%), reflecting selective management for more severe or systemic complications (Figure 7).

Complications from chest injuries shows that the vast majority of patients (93.15%) experienced no complications during their clinical course, indicating generally favourable outcomes (Figure 8). However, 6.85% did develop complications, with pleural sepsis being the most frequent at 2.06%. The other complications such as wound sepsis, decompensated anemia, hypovolemic shock, renal failure, pneumonia, atelectasis, and respiratory failure occurred in 0.69% of cases each (Figure 8).

Most chest trauma patients (58.22%) were hospitalized for under five days, indicating mild or well-managed injuries. Moderate cases (28.77%) stayed 5–10 days, while only 13.01% required over ten days, reflecting more severe or complex clinical conditions (Table 4).

Table 4 reveals that most of the chest trauma patients (84.93%) were discharged successfully, indicating good recovery. A few were referred (4.80%), left against medical advice (6.16%), or died (4.11%), suggesting occasional complications, personal factors, or severe cases requiring specialized care or resulting in mortality.

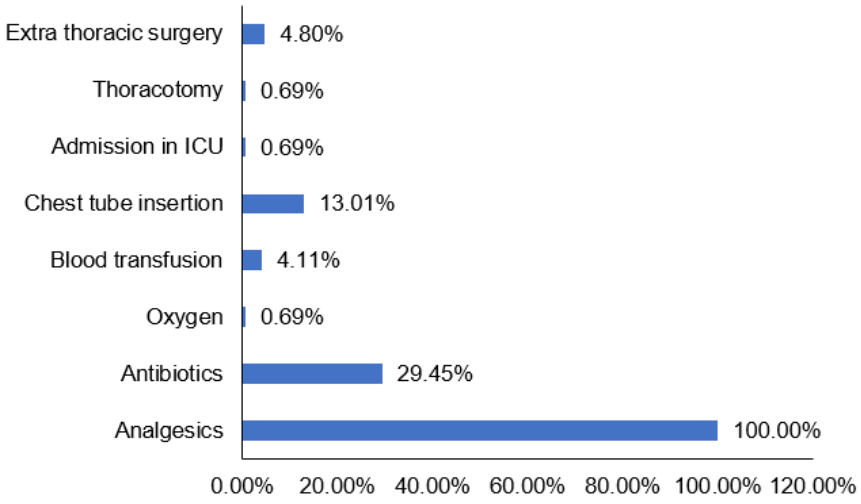

Figure 7: Types of Management modalities used for chest injury in patients.

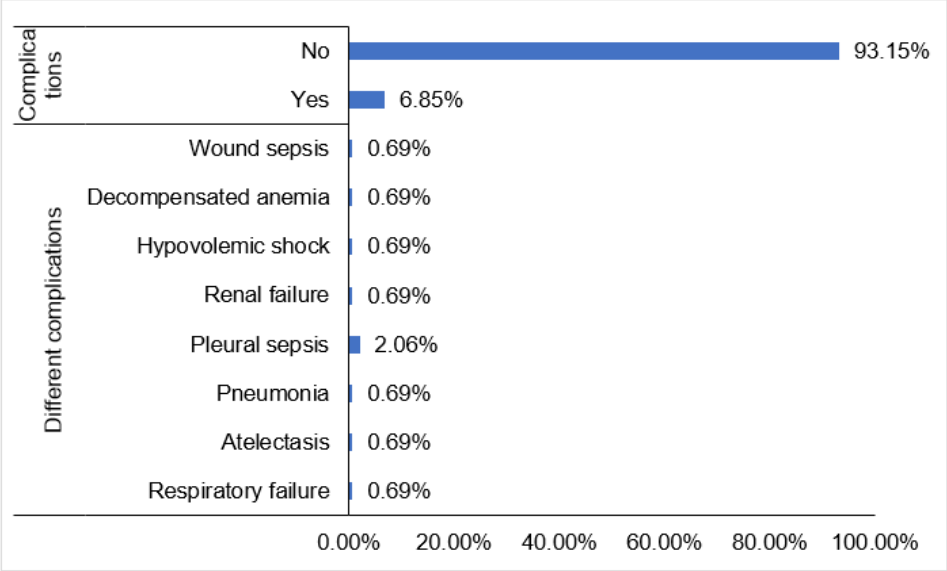

Figure 8: Representation of Complications related to chest injury.

Table 4: Duration of hospitalization and outcome of injured patients.

Variable	Sub variables	Frequency (N)	Proportion (%)
Duration of hospitalization	< 05 days	85	58.22%
	5-10 days	42	28.77%
	>10 days	19	13.01%
	Total	146	100%
Outcome of injured patients	Referred	7	4.80%
	Discharged	124	84.93%
	LAMA	9	6.16%
	Death	6	4.11%
	Total	146	100%

5. Discussion

The predominance of males in chest injury cases reflects global trauma trends, where men especially young adults aged 20–39 are more frequently exposed to high-risk environments due to occupational roles, mobility patterns, and sociocultural behaviours such as risk-taking and aggressive driving [12], as well as the sociopolitical crisis in the North west and South west of Cameroon. This aligns with the findings of [13,14], who reported that this demographic bears the highest burden of severe chest trauma globally due to increased exposure to road traffic crashes, workplace hazards, and interpersonal violence. The occupational distribution, with businesspeople, technicians, students, and farmers prominently affected, suggests that both urban and rural economic activities contribute to trauma risk especially in settings with limited safety enforcement. Drivers are particularly vulnerable due to prolonged road exposure and often poor vehicle safety standards (incidents [15]. The rising annual trend, peaking in 2020 and 2018, may be linked to increased urbanization, motorization, and sociopolitical unrest in the North West and South West of Cameroon, which have been associated with spikes in trauma admissions in Buea and Limbe regional hospital. These patterns underscore the need for targeted prevention strategies, occupational safety reforms, and robust trauma surveillance systems.

The predominance of road traffic crashes (RTCs) as the leading cause of chest injuries, particularly motorbike accidents, reflects the widespread use of motorcycles in low- and middle-income countries like Cameroon, often without adequate protective gear or enforcement of traffic regulations [16,17]. Car passengers, drivers, and pedestrians also face significant risk due to poor road infrastructure, limited trauma systems, and inconsistent use of seatbelts and airbags [18]. The 15.07% of RTC cases with unspecified mechanisms underscore systemic gaps in trauma documentation, which hinder targeted prevention and policy interventions [19]. Falls, especially from heights >2 meters, are common in construction and agricultural settings, where safety measures are often lacking, leading to high-energy blunt trauma [20]. Assault-related injuries and gunshot wounds highlight the impact of interpersonal violence, criminal activity and sociopolitical instability on thoracic trauma, with penetrating injuries posing greater risks for organ damage and mortality [21,22]. The presence of less frequent causes like boat accidents and stone falls further illustrates the diverse trauma landscape shaped by regional occupational and environmental factors. Overall, this distribution demands a multifaceted clinical and public health response, integrating trauma care, injury surveillance, and violence prevention strategies.

The predominance of non-penetrating (blunt) chest trauma in Buea and Limbe regional hospitals aligns with global patterns, where blunt mechanisms are primarily from road traffic crashes and falls which are more frequent than penetrating injuries due to their broader exposure across civilian populations. Contusions, the most common lesion, typically result from direct impact to the chest wall and are often underdiagnosed due to subtle clinical signs, yet they can lead to significant pulmonary dysfunction if not managed promptly. Rib fractures and hemothorax are hallmark injuries of blunt trauma, often associated with high-energy impacts and increased morbidity, especially in older adults or those with comorbidities [23,24]. Emphysema and hemopneumothorax reflect underlying alveolar rupture or pleural compromise, which may require chest tube drainage or surgical intervention. Rare but critical lesions like flail chest and pneumothorax carry high mortality risks due to impaired ventilation and paradoxical chest wall movement, as emphasized by [22]. The “others” category (8.33%) likely includes mixed-pattern injuries or atypical presentations such as diaphragmatic rupture or cardiac contusion, which demand advanced imaging and multidisciplinary care. These findings underscore the need for early recognition, imaging, and tailored management protocols in regional trauma settings.

The relatively low-severity lesions such as contusions and mild rib fractures, which are common but frequently underdiagnosed due to subtle clinical signs. Moderate injuries, including hemothorax and multiple rib fractures, and typically arise from higher-energy impacts, requiring more intensive monitoring and intervention [21-24] emphasized that AIS scoring is a reliable tool for stratifying thoracic trauma severity and guiding resource allocation, especially in settings with limited imaging and surgical capacity. These findings underscore the importance of early triage, standardized injury scoring, and targeted clinical protocols to manage the spectrum of chest trauma severity.

The head and neck, extremities, and abdomen were the most affected regions, consistent with global trauma patterns where blunt thoracic injuries often co-occur with craniofacial and orthopaedic damage due to force transmission across the body [22,20]. Confirm that polytrauma is common in chest injury cases, especially in Low- and Middle-Income Countries (LMICs), and that early identification of associated injuries is critical for reducing morbidity. The Injury Severity Score (ISS) distribution, with 75.3% of patients classified as mild (ISS 1–8), suggests that while multi-region involvement is frequent, most cases do not reach thresholds for critical care, allowing for conservative management. Moderate and serious injuries reflect the need for targeted monitoring, particularly in patients with abdominal or head trauma, which can complicate respiratory function and increase mortality risk. The absence of critical or maximal ISS scores aligns with findings from, who noted that survivable chest trauma often dominates in civilian settings, while maximal scores are rare and typically linked to penetrating or blast injuries.

The chest radiography as the primary imaging modality in Buea and Limbe regional hospitals reflects its accessibility, affordability, and rapid diagnostic utility in low-resource settings, where advanced imaging like CT scans remains limited due to cost, infrastructure, and availability. Radiographs are particularly effective in identifying common thoracic injuries such as rib fractures seen in patients with up to three fractured ribs and with more

extensive fractures which are hallmark features of blunt chest trauma. Pleural lesions, especially hemothorax, are frequently detected via radiography and indicate significant intrathoracic bleeding requiring prompt intervention. This finding aligns, who confirmed that confirms that chest radiography is often the first-line modality for detecting rib fractures and hemothorax, especially in acute trauma settings.

The therapeutic profile observed universal administration of analgesics to chest trauma patients highlights their foundational role in pain control and respiratory function preservation, as emphasized in trauma management guidelines. The use of antibiotics in some cases and chest tube insertion reflects targeted intervention for suspected infections and pleural injuries, particularly hemothorax or pneumothorax. Prophylactic antibiotics during chest tube placement have been shown to significantly reduce the risk of empyema and pneumonia, with meta-analyses reporting relative risk reductions of 0.25 and 0.41 respectively. The lower rates of extra-thoracic surgery, blood transfusion, and oxygen therapy suggest that most injuries were not life-threatening or systemically destabilizing. This is supported by who reported that favourable clinical course in 93.15% of patients, aligning with global data indicating that blunt chest trauma often results in manageable outcomes when promptly treated. However, the complication rate dominated by pleural sepsis highlights the importance of early infection control, as pleural infections post-trauma carry significant morbidity if not addressed swiftly.

The hospitalization and discharge patterns observed among chest trauma patients reflect a predominantly favourable clinical course, consistent with global trauma care trends. The fact that patients were hospitalized for fewer than five days suggests that most injuries were mild or effectively managed with analgesics, oxygen therapy, and chest tube drainage when necessary. This was supported by, who emphasize that uncomplicated rib fractures and minor blunt trauma often resolve with conservative care. Moderate stays likely correspond to patients with multiple rib fractures or pleural injuries requiring prolonged monitoring, while extended hospitalization (>10 days) reflect more severe trauma, comorbidities, or complications such as pneumonia or pleural sepsis. The high discharge rate indicates effective initial management and recovery, while referrals and patients leaving against medical advice may be influenced by systemic limitations or sociocultural factors, including financial constraints and preference for traditional healing. The mortality rate for chest trauma might be due to low-resource environments, where delayed presentation and limited access to advanced imaging or surgical care can impact survival.

5. Conclusions

This study conducted in the South-West Region of Cameroon, reveal that chest trauma mainly affected young adult males, often linked to occupational exposure and motorbike-related road crashes. Injuries were mostly blunt, with contusions, rib fractures, and hemothorax being common. Minor to moderate trauma predominated, frequently involving head, limb, or abdominal regions. Chest radiography was the primary diagnostic tool, while CT scans were rarely used. Management was conservative, relying on analgesics, antibiotics, and chest tubes based on severity. Most patients recovered well, with low complication and mortality rates, short hospital stays, and high discharge rates. However, referrals, patients leaving against medical advice, and occasional severe outcomes highlight the impact of financial constraints and cultural preferences on trauma care continuity.

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