Pattern of Injuries in Poly-Traumatized Patients Admitted to Emergency and Poly-Trauma Unit at Mansoura Emergency Hospital

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Abstract

Background: Poly-trauma is the main reason of public health morbidity and mortality all over the world. Injuries are responsible for just about 3.7% of all society health costs. Modern society and standard life style have led to spectacular changes in patterns of trauma in Egypt country. As a result of non-available data from different sources in a single place and limited research, the concept of “hidden epidemic” in Egyptian poly-traumatized patients is a fact.

Objective: The study aimed to determine the magnitude and characteristics pattern of adult injuries in Egyptian patients at Mansoura Emergency Hospital and to identify the associated risk factors.

Methods: 252 patients were included in the study. An information sheet was organized for all patients attending to the Emergency Hospital of Mansoura University. It contains information about social-demographic data, injury pattern, clinical assessment outcome, investigations plus different treatment protocols.

Results: Road Traffic Accident (RTA) was the mainly widespread form of trauma by 140 patients (55.6%), subsequently falling in 57 patients (22.6%) and violence was the least frequent reason in 55 patients (21.8%). As look upon different patterns of injuries: Trauma to extremities (65.1%) was the mainly frequent pattern of trauma followed by skull trauma (44%), thorax trauma (36.5), abdominal trauma (34%), pelvic fractures (18.6%) and maxillofacial trauma (13%). As regards poly-trauma managing protocols, surgical management was the mainly ordinary decision in extremities trauma (79.7%) followed by spine fracture (58.2%) then head trauma (57.7%).

Conclusion: Young males are the most common individuals subjected to poly-trauma. RTA was the most common mode of injury. Trauma to extremities was the most common pattern of injury followed by head injury. Head injuries were the most common cause of death. Surgical intervention was the most common management plan. The mean Revised Trauma Score (RTS) in the current study population was 7.05 ± 1.16 (RTS <8 indicate instability). 38% of study population admitted to ICU. In the current study, 220 patients were cured (87.3%) and 32 patients were died (12.7%). The median hospital length of stay was 9 days while the median ICU length of stay was 6 days.

Key Words: Pattern of injuries – Polytrauma – Revised Trauma Score (RTS) – Road Traffic Accident (RTA).

Introduction

TRAUMA is an objective damage that caused by violent behavior or other forces. Severe injury expose the patient at the danger of death or function loss [1]. Poly-trauma is the principal reason of morbidities and mortalities between all different age groups [2]. Trauma presented with different injuries and troubles that require fast assessment, argument and interference to save the life and avoid everlasting disabilities [3]. Injuries are categorized as intentional or unintentional. Unintentional trauma includes injuries interrelated to road traffic, occupational, firearms, drowning and falling. Intentional trauma include personal assault and killing [4]. All through history, a lot of medical institutions have made hard works to decrease the death-rate of poly-traumatized patients, internationally, around 16,000 persons die from trauma every day and more than 5.8 million persons die every year that expected to be about 8.4 million deaths/year at 2020 [5]. In Egypt country, at least four individuals are injured and one individual is killed each hour due to different causes of trauma. Road traffic accidents are responsible for about 80%–85% of these injuries in Egypt country. Poly-trauma is one of the main reasons of hospital admission in Egypt, nearly 20% of all hospital admissions were caused by road traffic accidents with many unfavorable effects. Numerous patients necessitate aggressive therapeutic and surgical protocol management with good care because of residual disability. It has been detected that around 74% of many plegic persons in Egypt country are due to RTAs. Injury as a result of road traffic
accidents is the third most frequent reason of disabilities all over the world and the second frequent reason in the developing countries [8]. Worldwide, nearly 1.2 million persons are killed in road traffic accidents every year and approximately 50 million are injured [8,9]. Domestic injuries are global community health problems, in different countries of Europe, home accidents kill many people than road traffic accidents despite of firm safety regulations and laws concerning buildings and living areas [11]. Injuries related to occupation demonstrated a considerable decrease in many developed countries along 20 years, however the prevalence of these traumas is still very high in some developing countries [12]. The frequency of these injuries in many Egyptian workers was similar to that in other countries. Mortalities due to firearm injury are not limited to any area, ever since 1945, more than 22 million population have been murdered and more than three times are traumatized during war [16]. The present study was published to explain the different trauma patterns in patients attending to the Emergency Hospital of Mansoura University (Emergency Department).

Patients and Methods

It is a retrospective descriptive analytical study including 252 patients that were attended to Emergency Hospital, Mansoura University from January 2016 to August 2016. All types of traumatic injuries were included in the present study except patients with burns, intoxication and patients with a localized trauma to only one region of the body. A pre-organized information sheet for every patient contained all the clinical data. All the following were listed: All trauma data (e.g., trauma type, trauma cause, timing of hospital attendance and pre-hospital interference), socio-demographic data (e.g., gender, age, job, habitation and level of education), full clinical assessment, investigations and different management protocols. The fate of every patient was recorded. 8 types of fate were postulated: The patients were discharged after management of minor trauma, admitted under observation, admitted for further assessment then discharged later on, transferred for operative interference, admission to our Intensive Care Unit, discharged upon patient request or the patient had escaped, referred to the tertiary hospital and died.

Statistical analysis:
All different data were collected including patient history, different patterns of injury, outcomes, examination and different protocols of management. All these data were tabulated, coded then analyzed using the computer program SPSS (Statistical Package for Social Scientists) Version 17.0. Description of all statistics were calculated in the form of mean ± SD and frequency (number & percent). Comparison between different groups was tested using Student’s t-test. p<0.05 was considered statistically significant.

Results

Distribution of data of the present study according to:

1- Demographic data: The present study was carried out on 252 patients, 168 male (66.7%) and 84 female (33.3%). The median age of studied patients was (28.00), there were 108 patients (42.8%) between 18-30 years, 68 patients from 30-40 years (26.9%), 32 patients from 40-50 years (12.9) and 44 patients (17.4%) were older than 50 years (Table 1).

Table (1): Distribution of studied cases according to demographic data. Data expressed as median (min-max) or number (%).

<table>
<thead>
<tr>
<th>Demographic data</th>
<th>Study group (n=252)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex:</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>168</td>
</tr>
<tr>
<td>Female</td>
<td>84</td>
</tr>
<tr>
<td><strong>Age/years:</strong></td>
<td></td>
</tr>
<tr>
<td>Median (min-max)</td>
<td>28.00 (18-98.00)</td>
</tr>
<tr>
<td>18-30</td>
<td>108</td>
</tr>
<tr>
<td>30-40y</td>
<td>68</td>
</tr>
<tr>
<td>40-50y</td>
<td>32</td>
</tr>
<tr>
<td>&gt;50</td>
<td>44</td>
</tr>
</tbody>
</table>

2- Mode of trauma: RTA was the most common mode of trauma by 140 patients (55.6%) followed by falling injury in 57 patients (22.6%) and assault was the least common cause in 55 patients (21.8%) (Table 2). Fig. (1) demonstrate the relation between mode of trauma and fate.
3- Revised Trauma Score (RTS): RTS was calculated to all patients according to their systolic blood pressure, respiratory rate and Glasgow Coma Scale (GCS). The mean RTS for the studied cases was $7.05 \pm 1.16$. There is highly significant difference between died and cured patients regarding RTS. The cured patients (222) had a mean RTS $7.33 \pm 0.82$ while died patients (32) had a mean RTS $5.11 \pm 1.32$ (Table 3).

4- Pattern of injuries:

A- Head injuries: Head injuries were present in 44.4% of patients: Sub-Dural Hematoma (SDH) =10.3%, Epidural Hematoma (EDH)=9.9%, Sub Arachnoids Hemorrhage (SAH)=4.4%, fracture base=4.4%, combined injuries=4.4%, fissure fracture=2.4% and depressed fracture=2.4% (Fig. 2). There is highly significant difference between died and cured patients with head injuries. Among 112 patients had head injuries 86 patients cured (represent 39.1% of all cured patients) and 26 died represent (81.2%) of all dead patients.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Study group (n=252)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>RTA</td>
<td>140</td>
</tr>
<tr>
<td>Fall</td>
<td>57</td>
</tr>
<tr>
<td>Assault</td>
<td>55</td>
</tr>
</tbody>
</table>

Table (2): Distribution of studied cases according to mode of trauma.

Table (3): Relation between fate and RTS in studied cases.

<table>
<thead>
<tr>
<th>Items</th>
<th>Cured (n=220)</th>
<th>Died (n=32)</th>
<th>Test of significance</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sys.BP: Mean ± SD</td>
<td>109.14±18.82</td>
<td>82.34±20.71</td>
<td>$t=7.425$</td>
<td>≤0.001 **</td>
</tr>
<tr>
<td>RR: Mean ± SD</td>
<td>21.27±9.42</td>
<td>34.06±15.70</td>
<td>$t=6.492$</td>
<td>≤0.001 **</td>
</tr>
<tr>
<td>GCS: Median (min-max)</td>
<td>15.00 (5.00-15.00)</td>
<td>7.00 (3.00-15.00)</td>
<td>$Z=7.882$</td>
<td>≤0.001 **</td>
</tr>
<tr>
<td>RTS: Mean ± SD</td>
<td>7.33±0.82</td>
<td>5.11±1.32</td>
<td>$t=12.989$</td>
<td>≤0.001 **</td>
</tr>
</tbody>
</table>

B- Spine injuries: Fifty seven patients (22.6%) had spine injuries: Cervical spine injuries were the most common=10.7% followed by lumbosacral spine=7.5% and the least common were the dorsal spines. There was statistically significant difference between cured and died patients with spinal fractures.

C- Chest injuries: There were 92 patients (36.5%) with chest injuries: Fracture ribs were the most common injuries that detected in 33 patients (13.1%) followed by hemothorax (8.3%), pneumothorax (4.8%), lung contusions (4.4), flail chest (3.6%), and combined injuries (2.4%). There is highly significant difference in outcome according to chest injuries. Among 102 patients with chest injuries there were 73 patients cured while there were 29 patients dead.

D- Abdominal injuries: Internal hemorrhage was present in 86 patients (34.1%). There was a statistically significant difference between died and cured patients with abdominal injuries (Table 4).

E- Extremities injuries: Extremities injuries were the most common injury pattern with 186 patients (65.1%); Combined injuries (13.9%) were the most common injury pattern followed by clavicle (6.7%), fracture femur (6.3%), both bone forearm (6%), crushed injuries (5.6%), tibia fracture (4.8%), humerus bone fracture (4.4%), and both bone leg fracture (4%) Fig. (3).
chest tube. Abdominal injuries: 43 patients (51.8%) had a conservative management and 40 patients (48.2%) managed surgically. Extremities injuries: 33 patients (20.2%) had a conservative management and 130 patients (79.8%) managed surgically. Pelvic injuries: 27 patients (57.4%) had a conservative management and 20 patients (42.6%) managed surgically. Maxillofacial injuries: 8 patients (25%) had a conservative management and 24 patients (75%) managed surgically.

6- Distribution of patients according to fate: The majority of patients cured=220 patients (87.3%), while there were 32 dead patients (12.7%). There is highly significant difference in outcome according to admission place (ward/ICU) (Table 5).

7- Length of stay: The median hospital length of stay was 9 days while the median ICU length of stay was 6 days.

Relation between pattern of injuries and ward/ICU admission: In patients with spine and pelvic injuries there was statistically significant difference between admission places regarding type of injuries. While there was a highly significant difference when comparing admission place with patients had head, chest, extremities and abdominal injuries (Table 6).

Discussion

Epidemiology of injury has become a fundamental public health concern. An injury affects more than just the person injured; it affects every one involved in the injured person's life. Injury, with all its consequences of death, life-long disabilities, physical disfigurement, and financial harms, can cause family destruction and community devastation. Worldwide estimates show that 16,000

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Table (4): Relation between abdominal injuries and outcome.

<table>
<thead>
<tr>
<th>Injured abdomen</th>
<th>Cured (n=220)</th>
<th>Died (n=32)</th>
<th>$\chi^2$</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemorrhage</td>
<td>No</td>
<td>68</td>
<td>30.9</td>
<td>18</td>
</tr>
</tbody>
</table>

Table (5): Relation between ward/ICU admission and fate.

<table>
<thead>
<tr>
<th>Admission</th>
<th>Cured (n=220)</th>
<th>Died (n=32)</th>
<th>$\chi^2$</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward</td>
<td>No</td>
<td>145</td>
<td>65.9</td>
<td>9</td>
</tr>
<tr>
<td>ICU</td>
<td>75</td>
<td>34.1</td>
<td>21</td>
<td>65.6</td>
</tr>
<tr>
<td>Die at ER</td>
<td>7</td>
<td>34.4</td>
<td>11</td>
<td>34.4</td>
</tr>
</tbody>
</table>

Table (6): Relation between pattern of injuries and ward/ICU admission.

<table>
<thead>
<tr>
<th>Pattern of injury</th>
<th>Admission</th>
<th>WARD</th>
<th>ICU</th>
<th>Die at ER</th>
<th>$\chi^2$</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injuries of head</td>
<td>36 (24.8%)</td>
<td>67 (69.8%)</td>
<td>9 (81.8%)</td>
<td>53.8</td>
<td>$&lt;.001^{**}$</td>
<td></td>
</tr>
<tr>
<td>Injuries of spine</td>
<td>22 (15.2%)</td>
<td>31 (32.3%)</td>
<td>4 (36.4%)</td>
<td>10.9</td>
<td>0.004 *</td>
<td></td>
</tr>
<tr>
<td>Injuries of chest</td>
<td>40 (27.6%)</td>
<td>41 (42.7%)</td>
<td>11 (100%)</td>
<td>25.7</td>
<td>$&lt;.001^{**}$</td>
<td></td>
</tr>
<tr>
<td>Injuries of extremities</td>
<td>114 (78.6%)</td>
<td>43 (44.8%)</td>
<td>7 (63.6%)</td>
<td>29.1</td>
<td>$&lt;.001^{**}$</td>
<td></td>
</tr>
<tr>
<td>Injuries of abdomen</td>
<td>33 (22.8%)</td>
<td>44 (45.8%)</td>
<td>9 (81.8%)</td>
<td>25.3</td>
<td>$&lt;.001^{**}$</td>
<td></td>
</tr>
<tr>
<td>Injuries of pelvis</td>
<td>32 (22.1%)</td>
<td>11 (11.5%)</td>
<td>4 (36.4%)</td>
<td>6.6</td>
<td>0.036 *</td>
<td></td>
</tr>
<tr>
<td>Injuries of maxilla/facial</td>
<td>16 (11%)</td>
<td>13 (13.5%)</td>
<td>4 (36.4%)</td>
<td>5.7</td>
<td>0.055</td>
<td></td>
</tr>
</tbody>
</table>

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Discussion

Epidemiology of injury has become a fundamental public health concern. An injury affects more than just the person injured; it affects every one involved in the injured person's life. Injury, with all its consequences of death, life-long disabilities, physical disfigurement, and financial harms, can cause family destruction and community devastation. Worldwide estimates show that 16,000
die from injuries daily, accounting for 9% of the world’s deaths [6]. Improvement in trauma care in Africa and other developing parts of the world will ultimately depend on the establishment of functioning trauma care systems, of which a trauma registry is a key infrastructural component. A trauma registry provides a means of collecting and analyzing pertinent epidemiologic data that can be used for the purposes of quality improvement, research, and planning [7]. This study was a retrospective study carried out on 252 poly-trauma patients who were admitted to emergency and poly-trauma unit at the Emergency Hospital of Mansoura University. The aim of this study was to determine the pattern of injuries, patient characteristics and outcome of poly-trauma patients admitted to the Emergency Hospital of Mansoura University. The patients included in this work were selected as having multiple trauma, all patients with single trauma were excluded. In the present study, pediatrics were excluded for many reasons: There are major anatomic and physiologic differences between pediatric and adult patients that play a significant role in the pattern of injuries, evaluation and management of a pediatric trauma patient. For example, anatomically: Less mineralization of bones means that the skeleton offers less protection to structures in CNS, Abdomen and Thorax. Physiologically: The physiological response to hemorrhage and resuscitative interventions differ substantially from exhibited by adults. In the present study, adult group in the third decade of life was the most affected age group as the mean age was (28.00). This is in agreement with Goyal et al., [10] and Gomes et al., [13] who founded that poly-trauma commonly occur in productive age group. The results of the current study were also similar to those of a study conducted in a hospital of Saudi Arabia where most of trauma patients were in the age group between 18 and 30 years [14]. The reason why the youth (at the age of 20-40 years) are involved in poly-trauma could be explained by the fact that at this age group majorities are involved in productive activities that require them to move fast enough from one place to another and in so doing are predisposed to risks of being exposed to motor-cycle crashes, which adds a serious economic loss to the community. Similar observations were also made by others [15]. As regards gender distribution there were 168 males (66.7%) and 84 females (33.3%). This male predominance is probably due to higher physical activity by men and also because men are more involved in outdoor activities and also they are more prone to assault and violence. This is also in agreement with Zafer, 2008 [18] who found that trauma was more common in males compared to females. Motor vehicle collisions were the most common cause of trauma in the current study (55.6%), followed by falls (22.6%) then assault (21.8%). Hasler et al., [19] found that motor vehicle collisions are the most common cause of poly-trauma. Since 1980s, the mortality numbers of RTA have been increased progressively in the Middle-Eastern and North Africa (MENA) region and in Asia, and that's are owing to the rapid increase in motor vehicles ownership. Consequently, RTAs turn out to be a major community health matter in these countries [20]. This matches with the Egyptian injury surveillance report 2009 which established that road traffic injuries were a main leading cause of hospitalization and fatality at Egypt (about 21,000 deaths/year), especially among men. Among women, falls was the leading cause of death, followed by road traffic accidents [21]. Within 2004, road traffic injuries were the sixth principal reason of mortalities in the Mediterranean Eastern Region. Egypt has the highest rate of mortality due to road traffic accidents in the Mediterranean Eastern Region. Internationally, road traffic accidents are expected to be the fifth leading cause of death [21]. Generally, falling is the primary foundation of life threatening injuries among children, elderly and industrial work force; in general, falling from height is the most frequent cause of workplace interrelated injuries. In rapidly developing countries of Arab Middle East, the majority of fall-related accidents are associated with the construction industry [22]. In the current study, the vital signs and the GCS were significant in predicting ICU admission and outcome. It is interesting to note the study of Bruijns et al., [23] who studied the value of traditional vital signs in predicting trauma mortality. In this study, the first systolic blood pressure and the first GCS were significant in predicting in need to ICU admission and outcome of the patients. In this study Revised Trauma Score was calculated for all patients according to their blood pressure, respiratory rate and GCS. The RTS has been used internationally in both the pre-hospital and hospital environment primarily as an instrument to predict the likelihood of serious injury (i.e. RTS <8 indicate instability) and mortality. Trauma score systems try to translate the severity of injury into a number. The scores enable physicians to translate different severity of injuries into a common language. Many trauma scoring systems have been developed and used. For instance, the Revised Trauma Score is most widely cited and used. The mean RTS in the current study population was 7.05 ± 1.16. In the present study, there is highly significant relation between RTS and outcome, this is also in agreement with Jen-
Pattern of Injuries in Poly-Traumatized Patients Admitted to Emergency & Poly-Trauma Unit

...ings, [24] who reported that as a predictive instrument, the Revised Trauma Score has been shown to have a moderate to high ability to accurately predict survival. As regards pattern of injuries: Trauma to extremities (65.1%) was the most common pattern of injury followed by head injury (44%), chest injury (36.5), abdominal injury (34%), spine injury (22.6%), pelvis fractures (18.6%) and maxillofacial injuries (13%). This is in agreement with Probst et al., 2009 [25] in his retrospective study on 4849 cases over 30 years. Three periods, 1975-1984 (decade I; n=1469) and 1985-1994 (decade II; n=1937) and 1995-2004 (decade III; n=1443) were compared. He found that 65% of multiple trauma patients had cerebral injuries, 58% thoracic trauma, 81% extremity fractures and 37% open injuries. This also can be compared to the study of Hasler et al., [19] on 458 poly-traumatized patients who reported that extremities was also the most common site of injury (57%) followed by head injuries (39%) then chest injuries (27%). Fazel et al., [26] in his retrospective cross-sectional study, enrolling all trauma adults (22564 patients) admitted to the Shahid Beheshti Hospital, Kashan, Iran between 2007 and 2011 reported that the most commonly affected body regions injured were the extremities (58.8%), followed by the head, neck and spine. Similar trend has been demonstrated in other studies [27-29]. This is clarifying that different injury patterns is in general the same and these facts of injury patterns could be useful while elaborating Trauma and Emergency Services of Care and also in planning and performing safety measures. Our findings regarding injury patterns are dissimilar with the studies done by Schalamon et al., [30] and Wolf et al., [31] who stated that head injuries were the most common injury pattern in poly-traumatized patients. As regard poly-trauma management, surgical management was the most common decision in extremities injuries (79.7%) followed by spine fracture (58.5%) then head injuries (57.7%). Abdominal trauma managed surgically in 48.2% of patients and chest injuries were managed conservatively in 51.6% of patients. This in agree with the large study on 35,564 blunt trauma patients done by Christensen et al., 2008 [32]. All patients were stratified according to Injury Severity Score (ISS) and it was found that 69% of included patients had done at least one surgical interfece; most commonly, bone fixation (47%), wound debridement (6%) and intracranial interference (6%). Open reduction and internal fixation was the most common procedure in the ISS 0-9 group, the ISS 10-16 group and the ISS 17-25 group (35%, 19% and 10% of patients, respectively). Evacuation of extra-dural hematoma/subdural hematoma was the most common procedure in the ISS 26-75 group (9%). As regards surgical intervention of abdominal injuries (48.2%) this is relatively high percentage when compared with results of Townsend et al., [33] who stated that about 25% of all abdominal trauma cases require abdominal exploration, also results of Jan et al., [34] stated that the conservative treatment is nowadays the therapy of choice in hemodynamically stable patients. But this high percentage of surgical intervention can be explained by that most of the current study population were unstable (mean RTS 7.05 ± 1.16) and high number require ICU admission in 96 patient (38%). Most of the patients admitted to ward in 145 patients (57.5%), 96 patients to ICU (38%) and 11 patients (4.3%) died at ER. There was a statistically highly significant difference regarding outcome of the patients either cured or died and ICU admission. In this study 220 patients were cured (87.3%) and 32 patients died (12.7%). In Egypt the mortality rate following major injuries was 13.2 deaths per 100,000 populations which was lower than Qatar, Iran, Iraq, Sudan and Saudi Arabia. In comparison with African countries the rate of injury mortality in 2004 was the highest in Nigeria and the lowest in Egypt [38]. In the present study, the most body region affected by injuries among deaths was the head. This in agree with the study of Osime et al., [36] about pattern of trauma deaths in an accident and Emergency Unit of a University Teaching Hospital in Nigeria. As regards the relationship between patterns of injuries and outcome of the patients, there was a statistically highly significant difference between died and cured patient as regards head injuries. This agreed with the studies done by Bodanapally et al., [37] who stated that traumatic brain injuries are the most common cause of death in young patients and this relation confirmed by the study of Roozenbeek et al., [38] who founded that traumatic brain injury is a major health and socioeconomic concern throughout the world and is the leading cause of mortality and morbidity among young people. Also, Baker et al., [39] founded that brain injury accounted for a majority of deaths at 50%. In United Arab Emirates, Eid et al., [40] reported that head injury was a major factor affecting mortality, followed by injury severity and hypotension. Also, in the current study, there is statistically significant difference between died and cured patients with abdominal injuries, this agree with the results of Aygencel et al., [41] who founded that abdominal injuries responsible for around 7-10% of all trauma-related deaths and have statistically significant effect on the mortality. In the present study, the median hospital length of stay was 9 days while the median ICU length of
stay was 6 days. In large study on 35,564 blunt trauma patients done by Christensen et al., 2008, [33] the median length of stay at ICU was 4 days and the median total hospital length of stay was 9 days. In United Arab Emirates, data of the Trauma Registry of Al-Ain city were collected prospectively over 3 years (2003-2006) at the main trauma hospital by Eid et al., [40], they reported that: The mean hospitalization was 9.7 days; 13% of patients were admitted to ICU with mean stay of 6.5 days. This long hospital and ICU length of stay cannot be contributed only to the pattern of injuries as there is many factors affecting length of stay. In the large study done by Böhmer et al., [42] on 30,157 cases that admitted to ICU with poly-trauma, they stated that treatment regimens, as well as secondary effects and complications of trauma and intensive care treatment, prolong ICU length of stay more than the mechanism of trauma and pattern of trauma.

**Conclusion:**

Young males are the most common individuals subjected to poly-trauma. RTA was the most common mode of injury. Trauma to extremities was the most common pattern of injury followed by head injury. Head injuries were the most common cause of death. Surgical intervention was the most common treatment plan. The mean Revised Trauma Score (RTS) in the current study population was 7.05±1.16 (RTS <8 indicate instability). 38% of study population admitted to ICU. In the current study, 220 patients were cured (87.3%) and 32 patients died (12.7%). The median hospital length of stay was 9 days while the median ICU length of stay was 6 days.

**References**


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نماط الإصابة في مرضى الإصابات المتعددة
بوحدة الطوارئ والإصابات المتعددة
بمستشفى الطوارئ – جامعة المنصورة

الحوادث هي السبب الرئيسي للفوت في جميع أنحاء العالم، وهو ما يمثل حوالي 10% من الوفيات في العالم بشكل عام. كل عام
يموت تقريباً 12 إلى 15 مليون شخص نتيجة حوادث متعددة. وحاصلات مريض الحادث لا تزال واحدة من الدعام الأساسي لبلد
الطوارئ، وفي حالة الطوارئ يجب أن تكون السرعة في استقرار حالة المرضى في أولوية عالية. العلاج، مرضى الطرد، تتطلب قدرة
على القيادة وتدريب ومهارات تقنية. ولذلك فإن الإستدامة الجيدة يؤدي إلى تغيير النتائج النهائية حتى في المرضى المريجي والإصابات المتعددة. تجعل جرح العديد من أعضاء الجسم بحيث تكون إحدى أجزاء الجسم تحت شدة الضرار
أكثر من 16% في قياس شدة الإصابة. الكتلة الإجمالية للحوادث المنحلة، حيث تشير التقديرات إلى أن الكتلة الإجمالية للحوادث التي وقعت
في عام 2000 هو 4.7 مليار دولار ورغم ذلك تشمل الكتاليف المادية والتشريعات الإنتاجية على وجه الخصوص. تشكل حوادث السيارات 27% (99
مليار دولار) وحوادث السقوط 20% (81 مليار دولار) من هذا المجموع.

الهدف من الدراسة: تحليل نمط الإصابة وتكاليف المرضى وطريقة علاج مرضى الإصابات المتعددة المحجوزين ببوحدة الطوارئ
والإصابات المتعددة بمستشفى الطوارئ- جامعة المنصورة.

ال наличии للمستودع:
1. تطوير الأساليب في الدراسة: دراسة تحليلية مرجعية بوحدة الطوارئ والإصابات المتعددة بمستشفى الطوارئ- جامعة المنصورة خلال الفترة من
2. تحليل مجموعة مرضى الإصابات المتعددة، ومتابعة حالات الحوادث، وتسهيل معالجة المرضى عند استقبالهم بالمستشفى
مع تقديم التوعية وسبب الإصابات المتعددة، ووضع الحوادث البرمجية لدعم أشخاص المرضى، وفقاً لإجراء عمليات البحث وفق
المعالج المشفى في حالات الإصابات المتعددة لمعرفة ما إذا كان المريض يحتاج للراحة العاجلة أو أن لم تكن الإصابات
التي يتعرض لها المريض كافية للعلاج في المستشفى.

الحالة المضمنة: جميع مرضى الإصابات المتعددة خلال فترة 24 ساعة من الدخول لمستشفى الطوارئ- جامعة المنصورة.

التعليقات المستدامة:
1. مرضى الإصابة الواحدة وأقسام المستشفى، الأطفال، حالات المرض، وكمية المرضى الذين يأتون في مستشفى الطوارئ.
2. التوصيات: الإصلاح الإداري للدراسة: كان من الصعب على المرضى 880 عامًا وكان معظم المرضى من الذكور بنسبة
67.7%. وكانت السبب الأكثر شيوعًا للإصابة هو حادثة الطرق بنسبة 55% وليه السقوط من على نسبة 27.6%. ثم حوادث
الإذعاء بنسبة 18.2%، السلسلة الشاذة (4.2%)، الرأس (36%)، والبيبات (2.8%).

الخلاصة والنتائج: كان السبب الأكثر شيوعًا للإصابة هو حادثة الطرق بنسبة 45.5% وليه السقوط من على نسبة 27.6%. ثم حوادث
الإذعاء بنسبة 18.2%، وليه السقوط من على نسبة 27.6%. الرأس (36%)، والبيبات (2.8%).