CHARACTERISTICS OF PAIN IN TRAUMA VICTIMS AT AN EMERGENCY SERVICE

ABSTRACT

Objectives: to characterize the victims of trauma assisted in an emergency service and identify the most frequent type of pain. Method: this is a descriptive and transversal study with a quantitative approach carried out in an emergency service of Hospital of Urgency in Aracaju, Sergipe, Brazil, with 90 victims assisted between June and July 2011, after the approval by the Research Ethics Committee of Federal University of Sergipe, under CAAE 0008.0.107.107-11. The data were analyzed through the software SPSS, version 18.0. The chi-square test was used, with a 5% significance level. Results: we observed that 73.3% of the participants were male, the most frequent age group was from 20 to 29 years and 38.9% were from Aracaju. The onset of pain at the time of trauma was found in 93.3% of cases, out of which 50% reported severe pain. In 61.1% analgesia was used, 45% remained with severe pain after the analgesic peak, 22.5% experienced moderate pain, and only 12.5% had complete relief of pain. Conclusion: inadequate evaluation combined to a treatment different from the gold standard represents negligence in pain control. Descriptors: pain; pain measurement; wounds and injuries; emergency medical services.

RESUMO

Objetivos: caracterizar as vítimas de traumatismo atendidas num serviço de emergência e identificar o tipo de dor mais frequente. Método: trata-se de estudo descritivo e transversal com abordagem quantitativa desenvolvido em um serviço de emergência do Hospital de Urgência da cidade de Aracaju-SE com 90 vítimas atendidas entre junho e julho de 2011, após a aprovação do Comitê de Ética em Pesquisa da Universidade Federal de Sergipe, sob o CAAE n. 0008.0.107.107-11. Os dados foram analisados no software SPSS, versão 18.0. Foi utilizado o teste qui-quadrado, com nível de significância de 5%. Resultados: verificou-se que 73,3% eram do sexo masculino, a faixa etária mais frequente foi entre 20 a 29 anos e 38,9% eram provenientes de Aracaju. O início da dor no momento do traumatismo foi evidenciado em 93,3%, dos quais 50% relataram dor intensa. Em 61,1% foi instituída analgesia, 45% permaneceram com dor intensa após o pico analgésico, 22,5% sentiram dor moderada e somente 12,5% obtiveram alívio completo da dor. Conclusão: a avaliação inadequada associada ao tratamento fora do padrão recomendado representa negligência no controle da dor. Descriptores: dor; medição da dor; ferimentos e lesões; serviços médicos de emergência.
INTRODUCTION

Traumatic events cause injuries of diverse natures and therefore pain is one of the main complaints of patients seeking emergency services, whose appropriate evaluation and control should be part of victim assistance for the maintenance of basic physiological functions.¹

Acute pain is related to noceptive stimulation produced by injury, it is characterized by a sudden onset and may undergo a gradual reduction in intensity, when associated with resolution of inflammation and healing in the injured area.²

Pain can also negatively influence the evolution of trauma victims, delaying treatment and recovery. Treatment effectively contributes to basic physiological function maintenance, avoiding harmful side effects resulting from the pain process and allowing a shorter hospitalization period, thus lower costs.³⁻⁴

It is noteworthy that, among the health professionals who work in emergency services, nurses and their teams are those who live in continuous shifts with trauma victims. For proper and humane treatment of the painful phenomenon it is necessary that these professionals be aware of the important aspects of pain: a systematic evaluation, multidimensionality, appropriate intervention, pharmacology, treatment result monitoring and communication with the health team.

As a result of trauma, pain produces potentially harmful effects on the body and is a frequent cause of demand for emergency services, whose care is mostly related to external causes. It is noteworthy that trauma leads to increased morbidity, mortality and disability, with considerable socioeconomic burden. The implementation of actions to reduce the severity of injuries resulting from external causes is essential to minimize this serious public health problem.⁵⁻⁶

Among acute pains, the pain seen in emergency service patients is the least studied, which is quite disturbing. Another fact that deserves highlighting is the little attention given to pain management protocols for trauma victim care.⁷⁻⁸

Given this issue the following guiding questions arose: “Is it possible to characterize the profile of trauma victims treated in an emergency service?” and “What is the most common type of pain these victims experience?”.

METHOD

Cross-sectional field study with a quantitative approach, performed in an emergency care department at the Emergency Hospital Sergipe (HUSE), in Aracaju-SE, Brazil. The HUSE is a large and highly complex general public and teaching hospital, also a reference in treating trauma victims.

The sample consisted of trauma victims treated at the HUSE in June and July 2011. The sample was probabilistic and for convenience, consecutively composed of 90 trauma victims who met the inclusion criteria described below: trauma victims with a value of Glasgow Coma Scale (GCS) equal to 15 points during the evaluation, over 18 years of age and signed a Term of Free and Informed Consent (IC), by the interviewee or legal representative in case of the victim’s inability.

The first data collection form consisted of demographic data and reported previous diseases, allergies, scene of the accident, number of victims, type of collision, use of safety devices, alcohol intake, loss of consciousness and type of injury.

The second data collection instrument was the result of the pain evaluation⁹, which contains information about the vital signs values, level of consciousness, presence of pain, numerical scale, body chart, analgesia administered and consequences of the pain. The numerical scale choice for pain assessment was used due to its ease of use, objectivity, easy to understand and quickness at the time of application. To assess pain intensity, the numerical scale was used, which consists of the following scores: 0 - no pain, 1-4 - mild pain, 5-7 - moderate pain, and 8-10 - severe pain.

Systematic data collection was as follows: trauma victims seen at HUSE were initially evaluated by the surgeon and performed after the initial assessment and after the trauma, the researchers explained the study’s objectives, and then the necessary clarification and the on behalf of the subject’s acceptance a signed Informed Consent by the patient and/or legal guardian.
was requested. Then there were the semi-structured interviews with trauma victims who met the inclusion criteria described above.

To identify pain intensity, the numerical pain scale was used and the victim was asked to indicate their trauma on a scale of 0 to 10 points. It was requested that they also pointed on the diagram or on their body relating to the pain region. A new evaluation was performed one hour after administration of the routine prescribed analgesic by the institution’s attending physician for those who had reference pain. In victims who did not complain of pain only performed a pain intensity assessment after three hours.

In this study, there was no drug intervention and/or any other of the sort by the researchers, because it is not an intervention study. A pilot test was conducted to refine the instrument.

Data collection occurred after approval by the Ethics Committee in Research of Universidade Federal de Sergipe, under the Protocol No. CAAE 0008.0.107.107-11, given the precepts of Resolution no. 196/96 of the National Health.

The data were stored in a computerized database in the Statistical Package for Social Sciences (SPSS) software version 18.0, and presented in statistical form, by means of tables. The chi-square test was used, with a 5% significance level.

**RESULTS**

There were 90 trauma victims evaluated, of which 73.3% were male with an average age 33.7 ± 13.1 and predominant the age group 20-29 years, in relation to marital status, 41.1 % were single, and mostly came from the city of Aracaju (38.9%), according to data presented in Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>n = 90</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>24</td>
<td>26.7</td>
</tr>
<tr>
<td>Male</td>
<td>66</td>
<td>73.3</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
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</tr>
<tr>
<td>15-19 years</td>
<td>04</td>
<td>4.4</td>
</tr>
<tr>
<td>20-29 years</td>
<td>38</td>
<td>42.2</td>
</tr>
<tr>
<td>30-39 years</td>
<td>29</td>
<td>32.2</td>
</tr>
<tr>
<td>40-49 years</td>
<td>09</td>
<td>10.0</td>
</tr>
<tr>
<td>50-59 years</td>
<td>05</td>
<td>5.6</td>
</tr>
<tr>
<td>60-69 years</td>
<td>01</td>
<td>1.1</td>
</tr>
<tr>
<td>70-79 years</td>
<td>03</td>
<td>3.3</td>
</tr>
<tr>
<td>&gt;80 years</td>
<td>01</td>
<td>1.1</td>
</tr>
<tr>
<td>Single</td>
<td>37</td>
<td>41.1</td>
</tr>
<tr>
<td>Married</td>
<td>36</td>
<td>40.0</td>
</tr>
<tr>
<td>Cohabitate</td>
<td>13</td>
<td>14.4</td>
</tr>
<tr>
<td>Widow/ widower</td>
<td>03</td>
<td>3.3</td>
</tr>
<tr>
<td>Separated</td>
<td>01</td>
<td>1.1</td>
</tr>
<tr>
<td>Aracaju</td>
<td>35</td>
<td>38.9</td>
</tr>
<tr>
<td>Greater Aracaju</td>
<td>30</td>
<td>38.9</td>
</tr>
<tr>
<td>Other Cities</td>
<td>21</td>
<td>23.2</td>
</tr>
<tr>
<td>Other states</td>
<td>04</td>
<td>4.4</td>
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</table>

In regards to the trauma’s site of occurrence, the public roads were highlighted in 67.8% of the victims. Regarding the medium used for the removal, 33.3% of the victims were transported to the hospital by the Mobile Emergency Care Service (SAMU). As for external causes, the injury was most frequently caused by traffic accidents by 50%, according to the data in Table 2.
Table 3 shows that, in relation to the body site, the most affected region was to the lower extreme of the pelvic girdle (65.6%).

In this study, it was found that 22.2% of victims had consumed alcohol and 17.8% lost consciousness at the time of the accident.

The relationship between the type of injury with the means of transport which led victims to the hospital, it was found that there was a statistically significant association between the severity of the injury and arrival to the hospital by SAMU: p = 0.02.

Table 4 shows that at the time of initial evaluation, 50% of the victims complained of severe pain, 93.3% reported that the onset of pain was at the time of the accident and that this was the continuous type in 88, 9% of victims surveyed. Movement was a highlighted factor for the pain aggravation by 60%.

It was observed that those who received analgesia, part of the victims spent more than 30 minutes without receiving analgesia (46.6%), even reaching periods of three hours from the start time of the initial treatment and use of the analgesic. It should also be noted that 35 (38.9%) received no pain control treatment.
Regarding the type of treatment, 61.1% made use of analgesics, it was observed that non-steroidal anti-inflammatory drugs (NSAIDs) was the most widely used class of analgesics (30%), only 2.2% used weak opioids and no victim used strong opioids.

Of the total victims surveyed, 40 were evaluated in two stages (1st and 2nd assessment) and of these, one hour after the drug’s peak action 45% remained in severe pain and 22.5% reported moderate pain, and only 12.5% reported no pain. There was a statistically significant difference in the comparisons of the 1st and 2nd evaluations, p = 0.004.

While checking the pain records on the chart it was noted that in 74.4% that there was no record and only 25.6% had a pain recorded by physicians. No records were obtained by the nursing staff.

### DISCUSSION

The results corroborate with studies\(^5\text{-}11\) which claims the majority of victims were male; the onset of traumatic injuries in this genre is due to greater exposure to violence and alcohol usage.

From childhood, the concepts of what is allowed for the children is clear, especially in Western countries, this leads to the formation, of often aggressive profiles mainly in men. Another fact that deserves to be highlighted is the easy access to alcoholic beverages associated with multimedia programs that encourage aggression. Such facts may make men more prone to become involved in accidents and violence.

The distribution of victims evaluated, as for age was more common in young adults. These data are similar to studies\(^12\text{-}15\) which indicates youths as the main trauma victims.

As for the city where traumatic event occurred, most victims were from the city of Aracaju, the capital of Sergipe State, where public roads were a major cause of accidents, corroborating the study\(^6\) performed in the same city. Studies say the most common type of occurrence is related to motor vehicle accidents, particularly motorcycle, automobile, pedestrian and bicycle.

Regarding the type of transportation used for the victim’s removal and transport to the hospital, part of which were transported by SAMU. It was observed that there was a statistically significant association between injury severity and type of transport to the emergency service, which demonstrates this service’s proper use by the population.

It was evident that, with regard to external causes, injuries were more frequent transportation accidents and that the victims had consumed alcohol. Alcohol consumption is a predictive factor in accidents with trauma victims.\(^16\)

It was found that during the first pain assessment, half of the victims complained of severe pain and, after the analgesic’s peak time, 26.7% were still in severe pain, 17.8% felt moderate pain and only 5.6% had no pain. During the second assessment, 26% of the victims reported severe pain, 38% moderate pain and only 7% had complete pain relief. The data are consistent with a study\(^17\) conducted in São Paulo city in which it sought to ascertain the analgesia used in patients who suffered traffic accidents, the standard analgesics and pain intensity.

Since the 1990s, pain is considered the fifth vital sign, whose prolongation can produce physiological changes and compromise the clinical condition of the injured. The American Agency for Quality and Research in Public Health and the American Society of Pain established guidelines for their measurement with the same physiological importance of standards that are considered when anamneses.\(^18\) The persistence of pain in trauma victims in emergency services is...
worrying, because of neurovegetative changes and psychological damage caused by it.

It is noteworthy that physical, emotional and psychological pain resulting from traumatic injury is common in patients seen in emergency services; however, it was not the object of this study was to evaluate the multidimensional aspects of pain.

It should be noted that of the victims (38.9%) received no analgesic intervention. The World Health Organization (WHO) recommends, according to the Analgesic Pain Scale, the use of simple analgesics and NSAIDs for mild pain. For moderate pain, there should be an increased to a weak opioid and intense pain must employ a strong opioid, combined or not with non-opioid analgesics or NSAIDs. It is noted by WHO in each step, from the beginning of treatment that drugs should be used to enhance the adjuvant analgesic effect.19

Several factors can interfere in the proper treatment of the painful phenomenon, especially the pain underestimation by the victim, ignorance of the techniques pain management available by health professionals, fear regarding the use of opioids and lack of institutional protocols in controlling the pain process.20

In this study, some victims received analgesia that does not consider WHO’s recommendation19; this is worrying since they can lead the trauma victim to unnecessary suffering and worsening their clinical symptoms. A study2 conducted at the national level indicates that the sub-analgesia pain, as well as their undervaluation is a reality at emergency units in Brazil.

It is noteworthy that there was no record of pain by nursing staff during the evaluation of trauma victims. In this context, studies20-21 report the difficulties encountered by the team which are not on the nursing action records, in particular the difficulty of understanding the patient in relation to pain, lack of time and underestimation of pain by health professionals for proper painful phenomenon assessment. This involves an ethical issue by professionals, because pain relief is a humanitarian aspect and the patient's right.

The Nursing Professional Code of Ethics determines that actions must be recorded on the chart in a clear, concise and objective manner. Seeing the Importance of these professional’s daily practice records, that besides being a duty provided by law, supports the treatment.

CONCLUSION

The study of 90 trauma victims showed that 73.3% were male, with the most prevalent age group being young adults, and 38.9% of victims being from the city of Aracaju-SE. Analgesia was performed on 61.1% of victims, 45% of which were still in severe pain and the continuous type in 88.9%. After the analgesic peak, 22.5% felt moderate pain and only 12.5% reported complete pain relief.

The inadequate assessment associated with the non-standard treatment of the analgesic pain scale showed that, despite the pain being considered the fifth vital sign, a parameter remains largely unexplored, with few records. It is shown that the service researched gave emphasis to the traumatized victim’s initial assessment; however treatment outside the recommended standard suggests the underestimation of pain control. These facts highlight the need for investment in the training of emergency service professionals.

It is believed to have contributed to the awakening of health professionals about the importance of pain control, especially in emergency services, because the pain resulting from traumatic injury is inevitable, however, the patient's suffering should not be overlooked.

We suggest further studies in which the multidimensional aspects of pain are investigated in order to complement the research data and support the development of protocols to evaluate the painful phenomenon in trauma victims.

REFERENCES


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