Assessment of Pain in the Field of Extra-Hospital Emergencies in Catalonia

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Abstract

Objective: To know the assessment and pain management used by the professionals of the Medical Emergency System (EMS) in Catalonia.

Methodology: Descriptive, observational and transversal study in the field of out-of-hospital care, from August to October 2015 in Catalonia. The sample was non-probabilistic of convenience, as an information collection technique was used an online survey sent by the company SEM SA to all workers of SEM. The project was approved by the management of the company. It was studied demographic variables, workplace (SVA Mike, SVA India, SVB), professional category (Physician, Nurse, Technician), years of experience in the type of patient to whom the pain is assessed, the scales of pain used, the professionals' perception about the pain approach and the management of the analgesia within the care. Data analysis has been done with the SPSS version 20.0 per IBM statistical package.

Results: From a total population of 932 EMS workers belonging to the professional categories of physician, nurse and technician in health emergencies (TES), 152 responses were analyzed (the response rate was 16.30%). 95.4% of the participants assessed the pain in the patient’s initial anamnesis, 94.1% used scales. Physicians and nurses used the EVA scale (54.6%) and medical emergency technicians used the numerical scale (45.4%) (p < 0.001). The 46.7% one applied the analgesia they considered opportune and 96.7% of doctors and nurses did a subsequent revaluation the pain.

Conclusion: The majority of participants assessed pain systematically and on a scale. It would be of great interest to unify criteria of evaluation and pain management, as well as to have specific protocols updated in the prehospital setting.

Keywords: Pain; Pain Management; Pre Hospitality Emergency; Pain Measurement; Health Professionals

Introduction

The assessment of pain in people is essential to address it effectively at any level of care that occurs. Acute pain can be reliably evaluated with one-dimensional tools such as numerical rating scales. Severe or severe pain is considered when a result is obtained above 7 in its measurement using visual analog scales (VAS) [1]. In prehospital care, the proper management of pain is essential in order to avoid the negative effects that it entails for the patient [2] and it is also essential to make an initial assessment of it through valid tools that allow objectifying this subjective manifestation [3].

Pain assessment scales are cognitive tools that must be adapted to the different expressions of pain, give an objective measure of the intensity of pain, but not of the characteristics, and can be used by healthcare personnel and by the patients [4]. In addition, the use of pain scales allows to know the situation of each patient and thereby minimize its consequences, considering that pain increases the use of health services by five [5]. However, in the daily practice of healthcare professionals, pain scales are not frequent, although they help prioritize patient care [3]. It has also been pointed out that the use of the scales reduces the time of administration of the analgesia, as well as a considerable increase in the use of the same [4].

Some authors have pointed out that the training of health personnel (doctors and nurses) on the assessment of pain and the use of algorithms for treatment can reduce the incidence of pain going from moderate to severe [6]. The assessment of pain results in good praxis for part of the health professionals, thus giving a holistic or integral attention of the whole process to the patient [5].

**Objective of the Study**

The main objective of this study has been to know the assessment and management of pain used by SEM professionals in Catalonia. Our secondary objectives are to identify the type of patients whose pain is valued in the SEM, describe the pain scales used in the SEM and know the health professionals’ perception of the analgesic procedure provided in the SEM.

**Methodology**

Descriptive, observational and cross-sectional study carried out do within the scope of prehospital assistance since August to October 2015. The study population has been the health professionals working in the SEM.

The studied sample of participants has been of convenience and includes workers from Advanced Medical Life Support Units (SVA Mike), where the care team is composed of a team leader, a nurse and a technical; of Advanced Nursing Life Support Units (SVA India) composed of a nurse leader of the team and a technician, Basic Life Support Units (SVB) composed of two emergency technicians and Command Units, formed by a territorial chief doctor and a territorial deputy chief nurse [7].

**Inclusion criteria:** All health professionals hired and sub-treated by the SEM who have worked during the study period in their care bases in Catalonia and who have participated in the study decided to participate.

**Exclusion criteria:** All health professionals who have not been hired by the SEM and all emergency professionals who were not health workers, for example firefighters, police, civil protection, have been excluded.

The instrument used in this study has been an online ad hoc survey of 18 questions addressed to the SEM health professionals in the period described above.

Ethical considerations: all the data of the professionals who have participated in the study have been treated with absolute confidentiality. The project of this study was approved by SEM SA at a meeting of its clinical meeting (July 2015).

The data has been analyzed with the statistical package SPSS version 19.0 for IBM. The p significant value p < 0.05 has been considered, with a 95% confidence interval.

**Results**

152 professionals from the SEM of Catalonia participated, with a response rate of 16.3%, the majority of which cos (21.5% of the workforce participated) and nurses (29.8%). Figure 1 shows the percentages of the workforce and the answers obtained according to professional category.

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The profile of the participant has been a woman between 31 and 35 years, a nurse and working in a USVA Mike unit. 95.4% of participants reported assessing pain in the initial history of the patient. Doctors and nurses stated that they value pain in unconscious and intubated patients mostly (p < 0.001). 94.1% of the participants stated that they used a scale to assess pain in conscious patients without cognitive impairment, regardless of the professional category (p = 0.59). The scale most used by doctors and nurses was VAS (54.6%) and by technicians the numerical scale (45.4%) (p < 0.001) (Table 1). In unconscious and intubated patients, the professionals expressed using a scale to assess pain in 55.9% of cases, regardless of the job category (p = 0.121), the scale most used by the participants has been that of facial expressions in 51.7% of the cases (Table 1). 46.7% of the participants stated that they applied the analgesia they considered appropriate, regardless of the job category (p = 0.70), given the absence of specific pain management protocols. 96.7%, mostly doctors and nurses, they revalued pain after analgesia (p = 0.009). 94.7% of the participants expressed that the use of pain scales helps to administer the most convenient and efficient analgesia, the response has been similar between the different labor categories (p = 0.200).

Table 1: Use of scales for the value of pain in the emergency service.

<table>
<thead>
<tr>
<th>Total population (n)</th>
<th>Medical</th>
<th>Nurses</th>
<th>Technical</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscious patients</td>
<td>EVA</td>
<td>34 (44,5)</td>
<td>35 (45,5)</td>
<td>8 (10,4)</td>
</tr>
<tr>
<td></td>
<td>Numerical scale</td>
<td>20 (31,2)</td>
<td>19 (29,7)</td>
<td>25 (39,1)</td>
</tr>
<tr>
<td>Intubated patients</td>
<td>Using a Pain Scale (YES)</td>
<td>28 (32,9)</td>
<td>25 (29,4)</td>
<td>0,112</td>
</tr>
<tr>
<td></td>
<td>Scale of facial expressions</td>
<td>14 (45,2)</td>
<td>13 (41,9)</td>
<td>4 (12,9)</td>
</tr>
<tr>
<td></td>
<td>Pain Indicator Behaviors Scale (ESCID)</td>
<td>5 (45,5)</td>
<td>3 (27,3)</td>
<td>3 (27,3)</td>
</tr>
<tr>
<td></td>
<td>Scale Critical-Care Pain Observation Tool (CEPOT)</td>
<td>1 (1,7)</td>
<td>0 (0,0)</td>
<td>1 (100,0)</td>
</tr>
<tr>
<td></td>
<td>Using other scales</td>
<td>6 (35,3)</td>
<td>3 (17,6)</td>
<td>0,791</td>
</tr>
</tbody>
</table>

*Results are displayed in absolute frequencies and their percentages in parentheses (%).

Discussion

The presence of severe pain is very frequent among patients treated in emergencies, and objective measurement of pain is important for it to be treated [3]. The majority of professionals participating in the present study stated that they value pain systematically.

During the initial history of the patient, both in the conscious patient and in the intubated patient, almost half reported reassess the pain after analgesia. In a systematic review of the quality indicators for the evaluation and treatment of pain in the emergency department, the importance of pain assessment and revaluation was highlighted using a validated pain scale and the decrease in time to administer analgesia [8].

In the present study, to assess conscious patients, the pain scale most used by doctors and nurses has been VAS, however, among technicians it has been the numerical scale; Other authors reported using VAS to assess pain initially and after transfer by paramedical personnel, as well as for a reassessment upon arrival at the hospital, concluding that the scale was valid, but inadequate analgesia constituting a problem in the prehospital setting [9]. Along the same lines, a multicenter study conducted in the USA. UU. on the assessment and analgesia in prehospital provided to children, he revealed that pain is undervalued, and analgesia is insufficient in most cases [10]. In relation to the instruments for measuring pain, participants have reported that the most commonly used scale for assessing pain in intubated patients has been facial expressions. Miró, et al. analyzed the validity of the Spanish version of this scale (Faces Pain Scale-Revised), concluding that this scale is suitable for measuring pain in Spanish-speaking children and adolescents [11]. The Campbell scale is recommended to assess pain in unconscious critical patients [6] as well as the ESCID scale to assess pain in critical, non-communicative and mechanically ventilated patients [12].

The main limitations of the study are related, above all, to the cross-sectional design that does not allow causal relationships to be established and the response rate of the participants that has not reached 20% of the professionals consulted. Nonetheless, it is worth highlighting the strength of a study that deals with pain management in the prehospital setting, which is a very rare study, with little evidence, despite the importance of the issue because it is directly related to the quality of care the patients and with their well-being and safety.

Conclusion

In conclusion, most participants reported assessing pain systematically and using a scale. In our opinion, it would be of great interest to unify pain assessment and reassessment criteria, as well as have updated protocols for administration of analgesia for application in the prehospital setting.

Conflict of Interests

The authors declare no conflict of interest.

Bibliography


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