

Evaluation of the Effectiveness and Nature of Analgesia in the Medical-Surgical Emergency Department of CHU-Donka

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Abstract

Introduction: Pain assessment is an essential step towards pain relief. In our context, however, it is insufficient in emergency departments. The aim was to assess the nature and effectiveness of the analgesia used in the emergency department of the CHU-Donka. **Method:** This was a single-centre prospective observational study conducted over one month (November 2020) in the medical-surgical emergency department of CHU-Donka. All patients aged 18 or over admitted to the emergency department with moderate to severe acute pain were included. **Results:** We enrolled 880 patients, 615 of whom (69.88%) were in pain. Males predominated (65.2%), with a sex ratio of 1.87. The average age was 44.78 ± 16.41 years, with extremes ranging from 18 to 85 years. The most represented age group was 18 - 34 years, with 66.18%. Initial assessment of pain by nursing staff in 3 cases. Initial assessment of pain by the investigator was 100%, 74% moderate and 26% severe. No reassessment of pain by nursing staff. Reassessment by the interviewer was 100% and found 5% no pain, 61% mild pain, 24% moderate pain and 10% severe pain. With an average numerical scale of 3.77 ± 2.61 and extremes from 0 to 10. Average length of stay was 2.85 ± 1.48 hours, with extremes ranging from 45 minutes to 8 hours. Analgesia was administered with paracetamol alone (43.58%), combined with tramadol or nefopam. No patient received morphine. **Conclusion:** This study revealed a lack of pain assessment in our department.

Keywords

Pain Assessment, Emergencies, Numerical Scale, CHU-Donka

1. Introduction

Pain is a frequent reason for consultation in emergency departments. Despite numerous advances in terms of knowledge, assessment and treatment, it is often poorly managed, even though it should be a priority for healthcare professionals [1].

The prevalence of pain in emergency medicine has been shown to be high, with 70% - 90% of patients suffering from acute pain [2].

In France in 2010, the percentage of patients in pain varied from 66% to 91% depending on the centre. Overall, pain was the reason for consultation for 64% of patients in pain [3].

Pain assessment and rapid therapeutic management have been associated with satisfaction and a reduction in the length of stay in emergency departments [4].

In Guinea, there are no national guidelines or recommendations in healthcare institutions for optimising pain management, and as there are no effective therapeutic methods, pain assessment and treatment remain largely inadequate, particularly in in-hospital emergency medicine.

As part of an overall approach to improving the quality of care in emergency situations, it is necessary to first assess the reality of pain management [3]. With this in mind, this observational study was carried out to assess the nature and effectiveness of the analgesia used in the emergency department of the CHU-Donka.

2. Methods

This was a single-centre prospective observational study conducted over one month (November 2020) in the medical-surgical emergency department of the CHU-Donka.

All patients aged 18 or over presenting to the emergency department with moderate to severe acute pain were included in the study. Severe pain was defined as a numerical pain scale (NPS) score of 4/10 or higher.

Severe pain was defined by an EN \geq 7/10.

Patients presenting with vital distress, polytrauma, unconsciousness or non-communication were not included.

Informed consent was obtained from included patients and anonymity was respected. A cross-sectional survey was carried out using a valid scale (numerical scale), a structured questionnaire to patients and the use of patient records to collect information on pain intensity on arrival and before discharge, the aetiologies of the pain and its management.

The other data collected were the patient's demographic characteristics, the reason for referral to the emergency department, the diagnostic category finally chosen, the type of analgesic dispensed, the length of stay in the emergency department, and the pain assessment by the carer and the investigator.

Primary endpoint:

The primary endpoint was defined as pain intensity measured by EN at the

end of emergency care (before discharge home or hospitalisation).

Analgesia was considered sufficient or of good quality when the EN was less than or equal to 3/10 at the end of emergency care.

The general description of the cohort was based on frequency for qualitative variables and mean and median for quantitative variables. The qualitative data were cross-tabulated using the Pearson chi-square test and the Fisher test.

3. Results

From 1 to 30 November 2020, we enrolled 880 patients, 615 of whom were in pain, *i.e.* 69.88% meeting our inclusion criteria. Males predominated (65.2%), with a sex ratio of 1.87. The mean age was 44.78 ± 16.41 years, with extremes ranging from 18 to 85 years. The most common age group was 18 - 34 years, accounting for 66.18% of cases.

Initial assessment of pain by nursing staff was carried out in only 3 cases. Initial assessment of pain by the investigator was carried out in 100% of cases, 74% of moderate pain and 26% of severe pain. There was no reassessment of pain by the nursing staff. Reassessment by the interviewer was 100% and found 5% no pain, 61% mild pain, 24% moderate pain and 10% severe pain. The mean numerical scale was 3.77 ± 2.61 , with extremes ranging from 0 to 10. The mean length of stay for patients in emergency was 2.85 ± 1.48 hours, with extremes ranging from 45 minutes to 8 hours. None of the patients received morphine.

4. Discussion

Our observational study describes the usual conditions of medical practice for pain management in 615 adult pain patients admitted to the emergency department of the CHU-Donka. The results of this study show that pain is a very frequent symptom and reason for consultation on admission to emergency departments, confirming a high rate of 69.88% of patients presenting with moderate to severe pain ($EN \geq 40$ mm) with a very low initial assessment of pain by nursing staff (3 cases). The high prevalence of pain in this study is similar to studies by Tchorny-Lessenot S *et al.* who showed that on arrival, 78% of patients complained of pain; of these, 54% complained of severe pain and 47% suffered from procedural pain [5].

The data from our study are also similar to those of Casalino E. who show that pain is the main reason for consultation in emergency departments, and it has been estimated that it concerns seven out of ten patients as the main reason for consultation or as an associated symptom [4].

They are also consistent with the data collected by Boccard E. *et al.* In 11 French emergency departments selected from an ad hoc list of 15 centres receiving an average of at least 60 patients per day, pain was of moderate to severe intensity ($VAS > 30$ mm) in 829/1022 patients. The gender distribution was the same, the mean age was similar in our study and the mean pain intensity was similar [3] [6] [7] [8]. Our data are inferior to those of Guéant S *et al.* [9] who

showed in their study that on admission to the emergency department, pain intensity was assessed in 90% of patients (44% experienced severe pain). However, reassessment was less frequent (48% at discharge). Pain assessment in emergency departments is poor, despite numerous studies on the use of different pain assessment scales. This lack of pain assessment in our study highlights the need for training of emergency staff.

Eight out of 10 patients used a non-medical means of transport on admission to the emergency department (see **Table 1**), which is explained by the absence of pre-hospital medicine in our country. These patients do not receive any care upstream, and arrive at emergency with maximum pain intensity.

Its medical management remains clearly inadequate, with a lack of Tier III prescriptions, despite the sometimes significant pre-existence of pain, and with patients who appear poorly relieved on leaving the emergency department because 10% had intense pain [4]. Patients whose pain intensity is not reassessed. This lack of reassessment is an obstacle to appropriate patient management, and reminds us of the need to implement pain management protocols.

Pain assessment in emergency departments is poor, despite numerous studies on the use of different pain assessment scales [6].

The majority of these painful patients are trauma emergencies (40%), since pain is almost systematic after a trauma. The aetiological distribution of this traumatic and medical pain is given in **Table 2**.

Table 1. Breakdown of patients by means of transport.

Means of transport	Number	Percentage
Taxi/personal car	571	92.85
Ambulance	12	1.95
Motorbike	32	5.2
Total	615	100

Table 2. Breakdown of patients by etiology.

Etiology	Frequency	Percentage
Traumatology	246	40
Hepato-gastro-enterology	99	16.1
Pleuropulmonary	56	9.1
Gynaecology	30	4.88
cardiovascular	12	1.95
Urology	28	4.55
Neurology	102	16.58
Rheumatology	42	6.83
Total	615	100

One of the aims of treating pain in emergency departments is to reduce the patient's mental suffering and to facilitate his care, as the absence of analgesia can have harmful neurological, circulatory, respiratory or metabolic consequences.

The treatments received during the emergency stay were mainly of the non-morphine type, with paracetamol accounting for 43.58% (see **Table 3**). This finding can be explained by the unavailability of morphine in the department despite repeated requests to the administration. On the other hand, pain relief can be improved in emergency departments, where the intensity of pain is not reassessed [8]. In their study, Galinski M. *et al.* showed that morphine was used as a first-line treatment by 71% of doctors [10].

The data from our study highlight a lack of knowledge regarding the management of acute pain, both in terms of pain assessment and the nature of the treatment to be undertaken. At the same time, there is a virtual absence of local analgesic protocols to compensate for this lack of knowledge. Morphine drugs, recognised for their indisputable efficacy in the treatment of severe pain, should be used more often in emergency departments, and the introduction of therapeutic protocols including the widespread use of titrated intravenous morphine, with recommendations depending on the pathology, could improve our therapeutic efficacy.

Motov SM *et al.* in their study of the problems and barriers to pain management in emergency departments found that the barriers that prevent emergency physicians from managing pain correctly include ethnic and racial prejudice, gender prejudice, age prejudice, inadequate knowledge and formal training in acute pain management, and opiophobia [11].

Given the high prevalence of pain, healthcare staff need to be given the best possible training in recognising, assessing and managing pain.

The traumatology department was the department most frequently consulted, in relation to the frequency of traumatic aetiology (see **Table 4**).

Table 3. Distribution of patients according to analgesic method.

Analgesic means	Number	percentages
Acetaminophen	268	43.58
Tramadol	3	0.48
Diclofenac	4	0.65
Antispasmodic	45	7.32
Nefopam	1	0.16
Acetaminophen + tramadol	17	2.76
Acetaminophen + Diclofenac	2	0.32
Acetaminophen + Tramadol + Diclofenac	9	1.46
Paracetamol + Nefopam	8	1.30
Immobilisation	85	13.82
Total	615	100

Table 4. Breakdown of patients by transfer department.

Transfer services	Number	Percentages
Medicine	102	16.58
Haematology	76	12.36
Traumatology	124	20.16
Visceral surgery	14	2.28
Neurosurgery	32	5.2
Released	267	43.41
Total	615	100

The average length of stay for our patients was 2.85 ± 1.48 hours. This median length of stay was slightly shorter than that observed by Boccar E. *et al.* who showed that the median time spent in the emergency department was 3.4 hours (extremes: 4 minutes-37 hours) [3]. This short time in our study is explained by the need to transfer patients rapidly to referral services, as the capacity of the emergency department is very limited.

Against this background of the need to improve pain management at the CHU-Donka, effective solutions must be envisaged, such as the introduction of standardised therapeutic protocols [6] [12] [13], pain assessment and administration of analgesics by the reception nurse, and computerisation of pain data.

5. Conclusion

Effective pain management in emergency medicine is based on the recognition of pain, the assessment of its intensity using a tool adapted to the patient, and the application of therapeutic protocols adapted to the pathology and the patient. Focusing on these strategies to improve pain management is a necessary aspect of developing optimal acute care for patients.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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