



## Are Patients with Chronic Pain Less Satisfied with Their ED Management Than Non-Chronic Pain Patients?



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Chronic pain (CP) patients account for 10–40% of those coming to the emergency room (ER) [1–4]. Emergency physicians are focused on emergency-level treatment and have little training in the management of CP. It is therefore necessary for emergency physicians to recognize CP and provide an appropriate response when it is the reason for admission [3]. The most commonly discussed issues in the literature regarding CP patients in the ER are waiting times and patient satisfaction, barriers to accessing care, and strategies for improving care [5]. This study was performed to compare levels of satisfaction between CP and non-CP patients on discharge from the ER.

This single-center prospective observational study was performed in the ER of an academic hospital. The trial protocol was approved by our institutional ethics committee (ref. 2017 100,153 50). The inclusion criteria were age  $\geq$  18 years, communicative, and admitted to the ER between 08:00 and 17:00 from Monday to Friday between January 2 and 12, 2018. The primary endpoint was the level of patient satisfaction at discharge. Patients were asked to rate their satisfaction as none, low, moderate, good, or very good. Patients with CP were identified based on the known pathology in their medical records or because they had pain lasting for more than 3 months. The survey was carried out in the form of a questionnaire provided by researchers in the ER who then followed up with each patient until discharge.

Sample size was calculated based on a rate of satisfied or very satisfied patients of 70% [6]. We hypothesized that CP patients would have a lower rate of patient satisfaction ( $<$  50%). With a risk ( $\alpha$ ) of 5% and a power of 90%, the required number of CP patients was 124. In a preliminary study performed in the ER of our hospital, 38% of 229 patients had CP. Therefore, 327 patients were required to reach the required number of subjects for the study.

Statistical analyses were performed using SPSS version 17.0 software (SPSS Inc., Chicago, IL).

From 289 patients initially assessed for inclusion, 243 patients were included in the analysis. These patients consisted of 80 (32.9% [95% CI: 27.0–38.8%]) with CP (CP group) and 163 (67.1% [95% CI: 61.2–73%]) without CP (non-CP group). Evaluations of the primary endpoint were available for 64 patients in the CP group and 137 patients in the non-CP group. A total of 177 patients (73%) had pain on admission with a median NRS of 6 (IQR 4–8). Table 1 presents a comparison of the characteristics of the CP and non-CP patients. The mechanisms of CP were musculoskeletal in 71% of cases ( $n = 57$ ), cancer in 5% ( $n = 5$ ), neurological in 5% ( $n = 4$ ), and miscellaneous in 17% ( $n = 14$ ). Twenty-four CP patients (30%) came to the ER due to pain related to their known pathology, corresponding to 9.9% (95% CI: 6.1–13.7) of the whole cohort.

The rates of satisfaction did not differ significantly between the CP and non-CP groups (85.9% [77.4–94.4] vs. 87.6% [82.1–93.1], respectively). Pain intensity at admission was significantly greater in the CP group than in the non-CP group, and had decreased significantly between admission and discharge in both the CP and non-CP groups such that there was no difference in pain intensity at discharge between the two groups (Fig. 1).

The results of this study show that the satisfaction of patients with their care in the ER did not differ between the CP and non-CP groups. In a previous study of 390 patients, the rate of moderate to high satisfaction with treatment in the ER was reported to be 73% [6]. However, a telephone survey of 1004 CP patients showed that the satisfaction rate with their pain management was 58% [7]. A study involving telephone interviews of 500 CP patients who had come to the ER showed that 76% were satisfied with their management [8]. Emergency physicians put forward time constraints and recognize the low priority given to triage for these patients, but they consider it normal to take charge of them even though the ER does not seem to them to be the ideal place [9]. A retrospective study showed that only 50% of CP patients obtained pain relief during their stay in the ER, but 76% reported satisfaction with their management [8].

A study in France published in 2003 showed that the proportion of CP sufferers with pain in the ER was 13% [1]. In a North American study, 41% of 476 patients admitted to the ER had CP [2]. Sixty-five

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**Table 1**  
Characteristics of the study population and comparison between the CP and non-CP groups on admission.

Variables	Non-CP group n = 163	CP group n = 80	p
Female, n (%)	76 (50)	48 (61)	0.07
Age, years (mean ± SD)	47.2 ± 22.1	56.6 ± 19.7)	0.002
BMI*, kg · m <sup>-2</sup> (mean ± SD)	24.3 ± 5.3	26.4 ± 5.9	0.01
Mode of coming to the ER, n (%)			
Referred by physician	48 (30)	32 (41)	
Referred by emergency medical call center	29 (18)	14 (18)	
Came spontaneously	77 (48)	28 (35)	NS
Others (e.g., employer, workmate, rescuer)	8 (5)	5 (6)	
History, n (%)			
Medical	68 (42)	57 (71)	0.0001
Surgical	51 (31)	31 (39)	NS
Gynecological/obstetric	14 (18)	19 (40)	0.009
Psychiatric	20 (12)	10 (13)	NS
Depression	18	10	
Psychosis	1	0	
Anxiety	37 (23)	21 (27)	NS
Stress	36 (22)	24 (30)	NS
Main reason for admission to ER			
Pain	100 (62)	48 (60)	
Dyspnea	11 (7)	9 (11)	
Fever	20 (12)	7 (9)	
Trauma	38 (23)	13 (17)	
Pain on admission to ER, n (%)	119 (73)	58 (73)	
Intensity, NRS score (Median [IQR], range)	6 [4–7], 1–10	7 [5–8], 1–10	0.01
SVS*, n = 5; missing, n = 6			
Anxiety in the ER, n (%)	61 (37)	30 (38)	NS
Intensity, strong–very strong, n (%)	41 (25)	19 (24)	NS
Stress in the ER, n (%)	67 (41)	38 (47.5)	NS
Intensity, strong–very strong, n (%)	35 (21)	27 (34)	0.04

\*BMI: body mass index; NRS, numerical rating scale; \*SVS: simple verbal scale.

(13.7%) identified their CP as the reason for their visit [2]. A multicenter study found a proportion of 39% of CP patients among 842 patients attending ERs [3]. In a recent retrospective study of a cohort of 1000

patients, 10.4% were admitted to the ER for reasons related to CP [4]. Our results are consistent with those in the literature.

This study has some limitations. First, the number of patients included in the analyses did not meet the theoretical requirements, which reduced the power of the study. However, as the satisfaction rates were high and similar in the two groups, it is unlikely that a larger cohort would have yielded markedly different results. The single-center nature of the study did not allow generalization of the results, especially as this is a hospital with a pain assessment and treatment center, which may be indirectly associated with recruitment bias.

Levels of patient satisfaction with treatment in the ER did not differ between the CP and non-CP groups. CP patients accounted for 32.9% of those admitted to the ER, of whom 30% came to the ER due to pain related to their known pathology, corresponding to 9.9% of the whole cohort.

**1. Clinical Trial number**

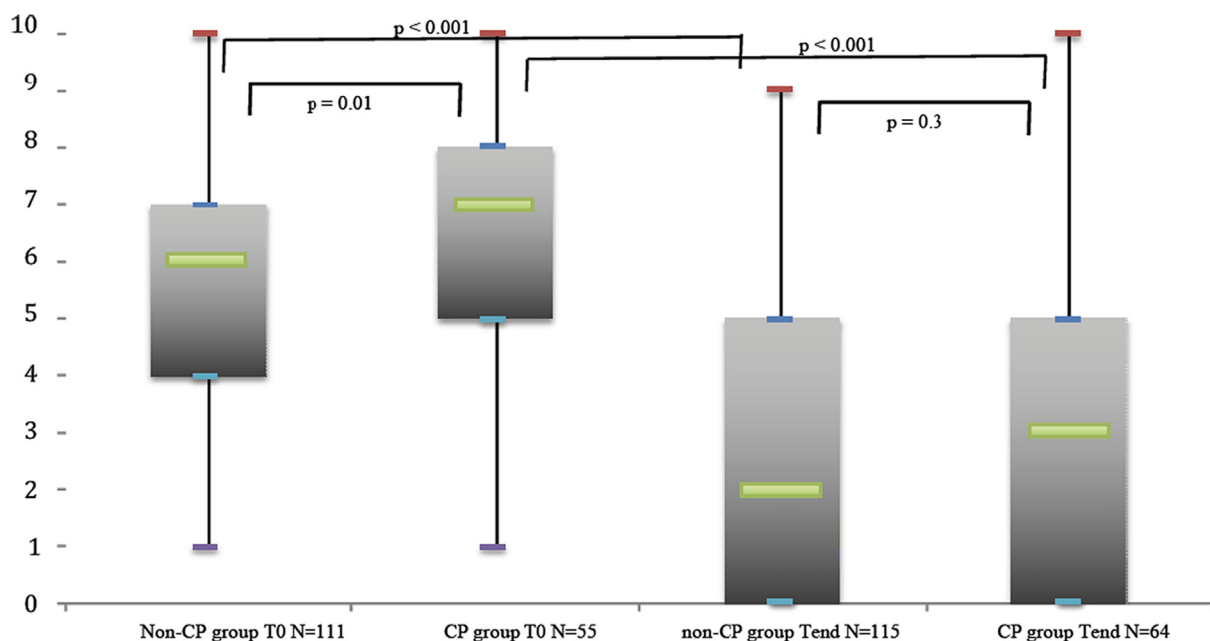
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**Fig. 1.** Evolution of acute pain in the ER (median [IQR], range) from admission to discharge and between the CP and non-CP groups.

### Declaration of Competing Interest

The authors report no proprietary or commercial interest in any product mentioned or concept discussed in this article.

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