Pain Management in Patients with Advanced Dementia: A Portuguese Study

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Abstract:

Introduction: Patients with severe dementia are particularly vulnerable to inadequate pain control. Its assessment approaches observational strategies, such as Pain Assessment in Advanced Dementia (PAINAD).

Objectives: The aim was to determine the percentage of patients with pain in an acute care facility, the adequacy of pain medication used and to compare pain intensity and treatment suitability between patients with and without pressure ulcers and cancer history.

Methods: We collected a sample of patients with advanced dementia admitted to our department of Internal Medicine in a weekly manner during three months. We gathered information regarding PAINAD assessments, type of analgesia, inlet diagnosis, presence of pressure ulcers and history of active cancer and calculated the pain management index (PMI).

Results: Of 135 patients with advanced dementia, 51.1% had pain: 66.7% mild pain, 23.2% moderate pain and 10.1% severe pain. The PMI was negative in 27.5% of patients.

There was no significant difference between the group with pressure ulcers and the control group, in regards of pain intensity (p = 0.403) or its control (p = 0.262).

We found a significant difference between cancer patients and controls, in terms of pain intensity (p = 0.011), but not in analgesic adequacy (p = 0.554).

Conclusion: There's still a high percentage of patients that have pain in an acute care facility. There is a high inadequacy in pain treatment that is even more evident in patients with cancer history.

1. INTRODUCTION

Pain is the main complaint in routine medical appointments, but is commonly undertreated. Many studies have shown inadequate control of pain in different conditions, such as in elderly populations, chronic pain, both oncologic and non-oncologic, or pain in emergency and post-operative care (1).

In November 1998 the "Veterans Health Administration" (VHA) initiated a strategy to improve pain control. The initiative called "pain as the 5th vital sign" required the use of a pain numerical scale on all clinical consultations, and its registration with the other vital signs in the patient's process. A pain score higher than 4 required intensive pain assessment and timely intervention by healthcare professionals (2). Nevertheless, as described in several studies, this approach alone did not improve the quality of pain control, since there were gaps in the evaluation and treatment of moderate to severe pain (2). Inadequate treatment of pain is due in part to the nature of modern medicine, and proper treatment will depend on a deliberate effort to rethink medical education, practice and philosophy (1).

Older people with severe cognitive impairments are most vulnerable to inadequate pain control (3), often because health professionals have difficulties in recognizing pain and making its assessment in this population(4).

Self-report is generally inadequate, therefore pain assessment has approached observational strategies, which provide indirect evidence that an individual has pain (3).

The strategies differ in time at which observations are made, ranging from minutes (5) to several weeks (6). They also differ in the type of target behavior, including facial expressions (7), motor responses (8), agitation (5), involvement with the environment (9-10), or a combination of several factors (11-13). While there is evidence to support the value of each of these approaches its multiplicity shows the lack of consensus in choosing the best pain control strategy.

The scale used in our hospital is the Pain Assessment in Advanced Dementia (PAINAD) which is based on evaluation of the physiological state and behavior, such as breathing, vocalization, facial expression, body language and consolability, with scores ranging from 0 to 2 to each of the five areas evaluated, where 0 (zero) equals the lowest intensity and 2 (two) increased intensity (14).

2. METHODS

This is an observational study through documentary means (computer registration system of pain assessment and therapeutic form).

During three months it was weekly collected a sample of patients admitted to the Internal Medicine Department of the Centro Hospitalar e Universitário de Coimbra who had severe dementia and were totally dependent.

It was collected Information about the inlet diagnosis, existence of pressure ulcers and history of cancer, since these factors contribute to the existence of pain. We also determined the type of analgesia used until then using the therapeutic forms. PAINAD assessments were previously carried out by the nursing service.

For statistical purposes, analgesics were classified according to their power in:

- 0- Absence of analgesic medication
- 1- non-steroidal anti-inflammatory analgesic / simple analgesic
- 2- Weak opioid (codeine / tramadol)
- 3- Strong Opioid (morphine / fentanyl)

Pain intensity was divided into:

- 0- No Pain
- 1- Mild pain (1-4)
- 2- Moderate pain (5-7)
- 3- Severe pain (8-10)

We calculated the Pain Management Index (PMI) to investigate the correlation between the reported level of pain and the level of analgesia used.

This index was obtained by subtracting the pain intensity on the potency of the drug. The PMI ranges from -3 to +3. Negative values indicate inadequate analgesia, while zero and positive values relate to the adaptation of the same.

The Student's *t* test was used to compare the intensity of pain and its control among patients with neoplastic background, pressure ulcers and control groups.

3. RESULTS

We collected a sample of 135 patients, of whom 71 were female. Patients were mostly hospitalized for respiratory infections (57%) and urinary disorders (19%).

All of the patients were totally dependent, with a Katz Index of Independence in Activities of Daily Living of 0 (zero). Most had unspecified dementia (33.3%), Alzheimer's disease (12.6%), Parkinson (5.9%), vascular dementia (41.5%), dementia with Lewy bodies (2.2%), frontotemporal (0.7%), and dementia associated with brain tumors (3.7%).

More than half of the patients experienced pain (51.1%). Within this group 46 (66.6%) had mild pain, 16 (23.2%) had moderate pain, and 7 (10.1%) severe pain.

PMI was calculated, revealing that 27.5% of patients were not adequately treated.

Of the patients with moderate pain, 62.5% of them were treated with simple analgesics, 12.5% with acetaminophen and dipyrone association, 6.2% with weak opioids and 18.7% with strong opioids.

In patients with severe pain, an equal percentage of patients (42.8%) were treated with simple analgesics and strong opioids, while 14.3% were treated with weak opioids.

Pressure ulcers were described in 37.8% of patients. Of these, 58.8% experienced pain: 13.3% had severe pain, 30% moderate pain and 56.7% mild pain. PMI proved to be negative in 23.3% patients.

There was no significant difference between the group of patients with pressure ulcers and the control group, in regards of pain intensity measurement ($p = 0.403$), or its control with analgesia ($p = 0.262$).

Neoplastic disease was found in 10.4% of patients, of which 42.9% had pain: 16.6% mild pain, 50% moderate pain and 33% severe pain. The measurement of PMI showed inadequate pain therapy in 4 patients (66.6%).

Regarding the analysis of the intensity of pain, a significant difference was observed ($p = 0.011$) between the group of cancer patients and the control group. We found no significant difference in the control of pain ($p = 0.554$).

Regarding the type of drug used, we found that acetaminophen was used in 101 patients (75%); In 11 patients (11%) was used a combination of simple analgesics such as acetaminophen, dipyrone or naproxen, in 5 patients (3.7%) was used a weak opioid (tramadol); and in 11 patients (11%) were used strong opioids (morphine, buprenorphine, fentanyl). In five

patients no analgesic therapy was prescribed, despite the record of mild pain in three of these patients.

Of the entire sample, only one patient was followed in outpatient pain consultation.

4. DISCUSSION

The percentage of patients who presented pain is within the value reported in the literature (3,4), which reports that approximately 50% of patients with dementia have pain regularly.

International epidemiological research has shown that the elderly in general, but especially those with dementia, receive less pain medication than their cognitively healthy counterparts, even in the same painful situations. This occurs whether considering residential, nursing home, or hospital care. Also, when prescribed pain medication it is generally of low dosage, and stronger pain medication, such as opioids, are less likely to be considered (4, 15-18). This is noticeable in our sample, that demonstrates a high inadequacy of pain management therapy in relation to the degree of pain previously assessed (27.5%), particularly in moderate pain. Prescription of opioids was limited to 43.3% of patients with severe pain.

Pain is present at all stages of oncological disease (early stage to metastatic). In literature, the prevalence of pain varies from 33% in patients after curative treatment, 59% of patients undergoing treatment and 64% of patients with advanced, metastatic or terminal stage (19). Although we haven't assessed the stage of the oncological disease, pain was recorded in 42.9% of these patients, which is in agreement with the data mentioned before.

Systematic reviews show that close to 50% of cancer patients are undertreated, with some variations in design and study settings (19). European studies confirmed these data showing that patients are not adequately treated in a percentage ranging from 56% to 82.3%. In our study patients with neoplastic background had more severe pain, and most inadequate pain therapy (66.6%) than patients in control group, a value that relates to those obtained in the literature.

The pain resulting from pressure ulcers can range from moderate to severe depending on the ulcer grade (20), so we would expect a greater intensity of pain compared to the control group, which was not observed in this study. There wasn't, however, an evaluation specifying the degree of pressure sores in order to correlate with the pain intensity. Moreover, the scales used to assess pain are only partially effective, so that the pain can be undervalued in some patients, which could explain the data found. The brevity of PAINAD (only 5 items) makes it easy to use, but limits its usefulness to restrict the extent of behavioral pain indicators that can be observed in the population (21).

As criticism of the work, we stress the fact that it was not evaluated the response after analgesic therapeutic, only the appropriateness of these to the intensity of pain.

In conclusion, there is still a high percentage of patients that experience pain in an acute care facility. There is a high inadequacy in pain treatment that is even more evident in patients with cancer history.

There are several obstacles both in the assessment of pain as in its management. It is still necessary the development of a comprehensive and internationally accepted assessment system that targets the various subtypes of dementia.

It is essential the implementation of continuing education and training programs to develop, implement and evaluate new tools. It is also necessary to support and assist clinicians and other health professionals to enable informed decisions and remove the existing reluctance of effective analgesia prescription in patients with dementia (1).

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