

Evaluation and Pain Management in Children with Cancer: About 48 Cases in Dakar

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Abstract

Introduction: Pain is ubiquitous in cancer and is the most dreaded symptom in children with cancer. It is a medical emergency. In Senegal, there is little data on the assessment and management of pain in children. The objective of this study is to evaluate the role of morphine in cancer pain management in children.

Methodology: This is a prospective study carried out over a period of 4 and a half months (from April 15 to August 31, 2017). All children hospitalized at the pediatric Oncology Department and who used morphine as part of their treatment were included in this study. The hospital prevalence was 69.5%. The most common tumor pathologies found were acute leukemia, followed by nephroblastoma and Burkitt's lymphoma.

Results: Pain was present for an average of 30.3 days; It was abdominal in half of the cases. Nociceptive pain was present in 89.6% of cases. An average 40% reduction in pain intensity was observed following morphine administration on the first day. Analgesia was obtained on average after 6 days.

Conclusion: Morphine has a crucial role in pain management in children with cancer. Efforts still need to be made in our unit to improve the quality of pain management in children.

Keywords: Pain; Cancer; Morphine; Pediatrics; Senegal

Introduction

According to the official definition of the International Association for the Study of Pain (IASP), pain is “an unpleasant emotional and sensory experience associated with actual or potential tissue damage or described in terms of such damage”. It is ubiquitous in cancer disease and is the most feared symptom in children with cancer. In sub-Saharan Africa in general and Senegal in particular, there is little data on the assessment and management of pain in children. The objective of this study is to evaluate the use of morphine in pain management in children hospitalized for cancer.

Methodology

A descriptive prospective study was conducted in the pediatric oncology unit of the CHU Le Dantec of Dakar categorized as a level III hospital in the health pyramid. It is the reference service for childhood cancer management in the country. The facility

receives all cases of pediatric cancer in Senegal. Directed by pediatricians specialized in oncology, our study took place over a period of four and a half months (from April 15 to August 31, 2017). The population studied included all children hospitalized in the pediatric oncology department with moderate and/or severe pain. We did not include children with mild pain treated with a tier I analgesic and those whose pain assessment was poorly monitored. Pain assessment was done by:

- Hetero evaluation in children under 6 years of age: HEDEN and EVENDOL; FLACC scale (Face Legs Activity Cry CONSOL ability) was used for post-operative patients.
- Self-Assessment in Children over 6 Years of Age: EVA and faces scale.

The initial dose of morphine was 1 mg/kg/day divided into 6 doses associated with inter-doses to titrate morphine. The pain

was assessed before and after morphine administration. Data was collected from patient records and analyzed with Epi info software.

Results

We included 48 patients out of 69 hospitalized over the period study. 21 patients were not included since they experienced mild pain. The sex ratio was 2.2. The mean age was 7.5 years, with [extremes of 05 months and 18 years]. Acute lymphocytic leukemia accounted for 22.9% (11 cases) of painful cancers, followed by lymphoma 18.7% (09 cases) and nephroblastoma 14.6% (7 cases). There were 12 children (25%) in the metastatic stage at diagnosis. The delay between the onset of symptoms and the average pain consultation was 30.3 days [extremes of 01 and 180 days]. The pain was localized at the abdominal level in 50% (24 cases) and osteoarticular in 23% (11 cases). Pain was extremely intense in 12.5% (06 children), intense in 50% (24 children) and moderate in 37.5% (18 children). The most painful cancers were acute leukemia (41%) followed by Burkitt lymphoma (29%) and neuroblastoma (27%). The pain was present in less than seven days in 71% (34 patients) and lasted more than seven days in 29% (14 patients). Nociceptive pain was present in all patients. Neuropathic pain was present in 05 patients (10.4%). Behavioral signs such as crying, screaming, agitation, and changes in facial expression were identified in all patients. Neurovegetative signs, particularly sweating and tachycardia were found identified in seven patients (14.6%). Body signs, i.e. reflex protection of the body, analgesic position at rest, analgesic attitude in movement, and particular hindrance to passive mobilization, were present in 42 patients (87.5%). Psychomotor signs, in particular psychomotor atony, decreased Pleasure in interacting with the outside world, were found in 39 patients (81.25%). The time to get stable analgesia on morphine averaged 6 days [extremes of 1 to 16 days]. The dose of morphine that relieved the patients (titration) averaged 1.8mg/kg/J [extremes of 1 to 5 mg/kg/J]. Pain assessment before and after morphine, administration is displayed in (Figures 1 and 2). Despite the systematic prescription of laxatives, constipation was the main adverse event in patients on morphine (26 patients or 47.9%). Other adverse effects were abdominal pain (6.3%); vomiting (2%), pruritus (2%). There were no cases of respiratory depression. There were 17 deaths (35.4%). The main causes of death were the disease itself (9), febrile neutropenia (5), and pulmonary and/or cerebral leukostasis [1-3]. In these end-of-life situations, morphine doses were rapidly increased to favor the patient's comfort.

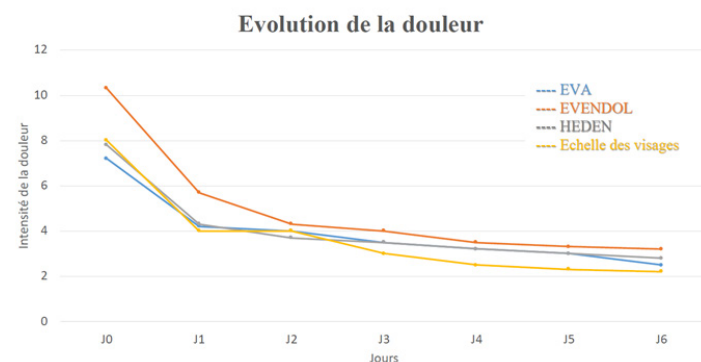


Figure 1: Evolution of pain as a function of time according to rating scales

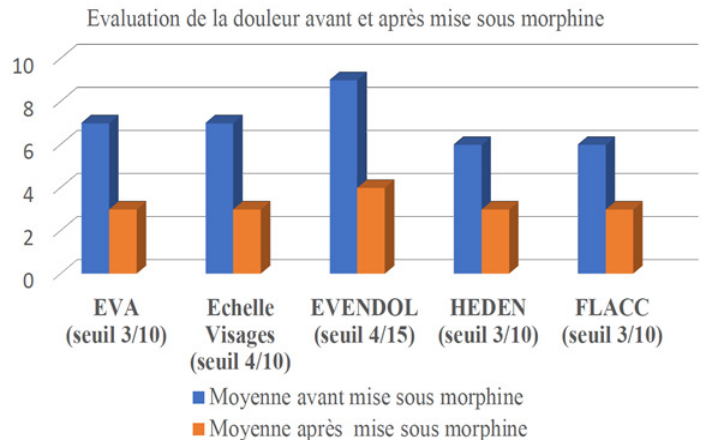


Figure 2: Evaluation of pain before and after morphine administration according to the pain scales used.

Discussion

The main challenges we encountered in our study were related to insufficient human resources (1 nurse and 1 doctor for every 10 hospitalized patients). This did not allow us to assess the child's pain on a continuous and regular basis. Morphine was administered at fixed times rather than on-demand. Our study is in line with the findings of the study conducted by the Franco-African Pediatric Oncology Group (GFAOP) on pain management related to cancer in Africa by YAO et al, where morphine was often administered at fixed times, as opposed to on-demand [1]. Pain prevalence in children with cancer reached 69.5 % in this study [2]. In the study conducted in Miser by the National Cancer Institute, the pain prevalence was 54%; in the study by Collins JJ et al pain was the predominant symptom in hospitalized children with a prevalence of 84.4% [3]. At the time of diagnosis, the average age of our patients was 7.5 years old [4, 5]. In the KA and KONE studies, the mean ages were 8.1 years and 6.77 years, respectively. The late age of discovery may be related to delayed diagnosis, insufficient human resources, and difficult access to appropriate care centers. In our study, the main tumor pathologies were dominated by acute leukemia, lymphoma, and nephroblastoma. The three main cancers were also found in the same proportions in the Senegalese studies of KA and KONE. In the KA study, the average time between the onset of the first symptoms and hospitalization was 180 days. In DIALLO's study on hematological malignancies in children, the meantime to the consultation was 343 days, and in TOGO B, the meantime was 180 days [6, 7]. Assessment of pain intensity revealed that 87.5% of patients had moderate to severe pain. Similar results were found in several studies. In the Chinese study by Sun ZHEN, the prevalence of moderate to severe pain was 86% [8]. In our series, the pain had functional and organic consequences. A Moroccan study found that pain had a negative impact on the child's sleep (50%), mood disorders (66%), and the ability to play with children or toys in 74% of cases. The Chinese survey of Cancer Center of Sun Yet Sen, revealed an average duration of pain control of 05 days, with extremes of 01 and 12 days. Analgesia was obtained on average in 06 days [extremes of 01 to 16 days] [8]. The most intractable pains were mostly visceral in origin and in children whose tumors responded poorly to chemotherapy. In the Chinese study, the main side effects encountered were constipation, nausea, vomiting, and

drowsiness, which is in line with our results.

Conclusion

Morphine plays a major role in the analgesic management of children with tumor pathologies. Its prescription, provided that rules are respected, and monitoring is ensured, is easy. The side effects are minor, consisting essentially of constipation, which has been systematically prevented in all patients.

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