

A Brief Review of the Progress of Research on Late Pain Care in Patients with Leukemia

Xueyan Xu

Department of Hematology, Zhuji People's Hospital of Zhejiang Province, Zhuji, China
Email: 715130074@qq.com

Abstract: Leukemia is a general term for malignant diseases of the blood system. It is a group of primary malignant tumors of the blood system. Most of the diseases begin in the bone marrow, resulting in the release of a large number of abnormal blood cells into the peripheral blood, resulting in a series of clinical symptoms and signs. At present, the exact cause of leukemia is not clear, most of the genetic factors and environmental (non-genetic) factors combined effect of the result. There are four main types of leukemia: acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphoblastic leukemia (CLL), and chronic myeloid leukemia (CML). The development of the above-mentioned malignant hematologic diseases to the end stage often causes multiple organ dysfunction and pain. Late pain causes severe body drain and affects the patient's quality of life. In addition to conventional tumor analgesia, pain nursing is also very important in pain management of patients with advanced hematopathy. This paper reviews the literature of late pain nursing for patients with leukemia in recent years, and makes a review in order to provide some reference for the clinical late pain nursing for patients with leukemia.

Keywords: Leukemia; Hematologic malignancy; the late; Pain care; the research progress

1. Introduction

Leukemia is a malignant clonal disease of hematopoietic stem cells, in which a system of haematopoietic cells becomes overproliferated and infiltrates different tissues and organs, inhibiting normal haematopoietic function^[1]. Leukemia can present with more symptoms and manifestations after its onset, such as anemia, hemorrhage, and fever, accompanied by enlargement of liver, spleen, and lymph nodes. Hepatosplenomegaly may occur in patients with advanced leukemia and accompanied by severe pain. Pain, as a bad manifestation, can seriously affect the psychology of patients and their treatment compliance^[2, 3]. Through strengthening pain nursing intervention for patients with advanced leukemia, we can help patients to alleviate pain and improve comfort degree to the greatest extent. In this paper, based on the existing literature reports, we analyzed the contents related to the progress of pain nursing for patients with advanced leukemia, in order to better guide pain intervention for patients with advanced leukemia. The relevant contents are now summarized as follows.

2. Research progress of pain assessment methods in advanced leukemia

In view of the fact that patients with advanced leukemia need to strengthen pain assessment, it is necessary to better understand the pain conditions of different patients through strengthening pain assessment, so as to help patients to treat them^[4, 5].

2.1 Visual Analogue Scale (VAS) Evaluation

The VAS is currently commonly used in clinical practice for assessing pain severity with a high rate. That is to say, a long straight line with the size of 10cm was selected, which corresponded to 0–10 points, with 0 point being painless and 1–3 points being mild pain; 4–6 points: moderate pain; 7–10: Severe pain, in which the patient marks the pain he/she considers as severe on a straight line according to his/her pain perception^[6, 7].

2.2 Digital Scoring (NRS) Evaluation

The international common method of the NRS in pain assessment means that the patient is directly asked to tell the number representing his/her pain from 0 to 10, and the corresponding score is the pain assessment result, with 0 point indicating no pain. 1-3 points: mild pain; 4-6 points: moderate pain; 7-8 points: severe pain; 9-10 points: severe pain^[8].

2.3 Comprehensive pain classification

In fact pain, as an unpleasant feeling, is obviously subjective, and varies greatly from individual to individual. Different people have different pain thresholds. VAS and NRS scores are all relatively rough evaluations. In fact, for the evaluation of late stage pain of leukemia, the degree of patients' tolerance to pain, whether their diet, sleep and life are affected and whether they need to use analgesic drugs need to be considered. In view of the above manifestations, the late stage pain of leukemia is divided into four grades, namely, Grade 0: no pain, and Grade I: the pain is mild and bearable, and diet, sleep and life are not affected. Class II: continuous pain, paroxysmal method, bearable in a short term, greatly affecting diet, sleep and life; Class III: Diet, sleep and life are seriously affected, and the pain is severe and unbearable, requiring the use of analgesic drugs. According to the results of different literature reviews concerning the assessment of late stage pain induced by leukemia, all patients were classified into Grade III pain.

2.4 Establishment of pain assessment questionnaire

Comprehensive pain assessment needs to be strengthened for advanced leukemia pain, so a pain assessment form should be established for patients from multiple angles to more objectively and truly reflect the changes of patients' pain in different periods and evaluate the effect of pain measures^[9]. The pain care list includes basic information of the patient, such as name, gender, age and pain classification; Make good records of pain assessment, such as the presence of pain, persistent pain, periodic intermittent pain, active pain, etc.; The location of pain, duration of pain, date of pain, pain score corresponding to different scales, and the description of pain by patients themselves are determined, which are of great significance for the comprehensive evaluation of patients' pain^[10].

2.5 Active reporting of pain

As a subjective feeling, pain cannot be judged intuitively by medical staff, which requires different patients to contact medical staff in time when they have pain feeling^[11]. Inform the medical staff about their own pain. In addition, if the patient feels no pain relief after the medical staff have taken measures, they can also contact the medical staff to facilitate more comprehensive and intensive comprehensive intervention on leukemia's late pain and to help the patient alleviate the pain as much as possible.

3. Progress of non-drug pain nursing care of patients with advanced leukemia

3.1 Psychological intervention

Leukemia patients themselves have such adverse emotions as anxiety, irascibility, and irritability. In addition to the effect of late pain, the negative emotions of patients will be aggravated, and the negative emotions will reduce the pain threshold of patients, and they interact with each other^[12]. Therefore, psychological intervention needs to be strengthened for patients with leukemia's advanced pain. Medical staff should pay attention to communication with patients and their families, encourage patients to describe their uncomfortable symptoms, strengthen ward patrol, and show sympathy during nursing, and express understanding of patients' negative psychological status and abnormal performance. Strengthening the encouragement, consolation and respect for patients' personality dignity; Maintaining empathy at all times to explain the relationship between negative psychology and pain can promote the emotional stability of patients^[13]. Some literature reports have pointed out that strengthening the positive psychological suggestion in patients with advanced leukemia was conducive to downplaying the pain thoughts of patients and reducing pain feelings.

3.2 Divert attention methods

If patients with leukemia continue to pay attention to their advanced pain, they will virtually feel more intense pain, so patients with advanced leukemia are advised not to concentrate their attention and vision on pain, but can rely on certain measures to transfer their vision to reduce the pain aggravation caused by excessive attention to pain. Nursing staff can chat with patients on some topics of interest, and transfer their attention through heart-to-heart talk, reading books, watching movies and TV plays, and meditation training ^[14]. During the period of attention diversion for patients with advanced stage pain of leukemia, their interests, hobbies, and personality traits should be known so as to make them feel better, and recommend favorite TV plays, books, newspapers and magazines for patients, so as to better motivate patients to concentrate and play a role in relieving pain.

3.3 Reduce pain stimulation nursing methods

The occurrence of advanced pain in patients with leukemia is also related to the stimulation received by patients, so the possible aggravation of pain caused by different stimulation should be reduced. For example, the family members of the patients are advised not to mention the medical expenses or the recent death of leukemia in the hospital before the patients, but on the contrary, the patients should see the hope, such as stable condition and smooth discharge after treatment ^[15]. Medical staff should try not to choose patients' rest time in the examination of patients, to keep the operation of the soft, reduce the stimulation; The related stents were used to improve the comfort level of patients in dressing change, catheterization, enema and other nursing operations. According to the changes in external air temperature, the appropriate temperature and humidity in the ward would be ensured, so as to eliminate the stimulation caused by overheating, supercooling, and excessively dry room to the patients and increase the pain perception ^[16].

3.4 Musicial pain nursing methods

More modern studies have pointed out the relationship between music and pain, and pointed out that although music will not replace analgesic drugs, the efficacy of analgesic drugs can be improved through music. Therefore, the patients can choose music by themselves, or the medical staff can designate certain types of music for the patients, so as to help the patients to relieve pain through the auxiliary effect of music. Some studies have found that in the process of using music for patients with advanced pain due to leukemia, music not only can reduce pain, but also can help patients to reduce anxiety and relieve depressive symptoms ^[17]. The analysis may be that music promotes the excitement of auditory pathway in the brain and inhibits the adjacent pain centers, thereby alleviating the pain in the patient. Some studies have pointed out that music can promote the pituitary secretion of endorphins, increase the level of endorphins in the blood, also has a certain analgesic effect.

3.5 Affective support pain nursing

Emotional support pain nursing mainly relies on health education for family members of patients with leukemia to enable patients to master the relevant knowledge of leukemia and to provide emotional support to patients ^[18]. Understanding some abnormal behaviors, irritability and excessive language of the patients, showing tolerance to the patients, strengthening the encouragement and care in the treatment process of the patients, and avoiding some language of "adding insult to injury", so that the patients can get consolation emotionally, will have a certain effect on the relief of pain.

3.6 Physical pain relief methods

Leukemia patients with advanced pain can use some physical methods to relieve pain and irritation, such as local massage, and local application with hot towel, or hot compress with hot towel ^[19]. Is to stimulate the healthy skin in the pain area and relieve the pain possibly caused by spasm and inflammation. The selection of physical analgesia method must consider the actual situation of different patients to avoid blind use.

4. Research on the nursing methods of drug analgesia for patients with leukemia's late pain

Leukemia patients have severe pain in the late stage, and the effect of non-drug intervention alone is

limited. Most patients still need to improve the overall analgesic effect through the use and nursing of analgesic drugs. There are many ways of medication in the treatment of leukemia's late pain medication, among which oral medication is the first choice, and oral medication can be used for a long time, which is also beneficial to reduce addiction and dependence. Depending on the situation, sublingual administration, continuous subcutaneous injection, intramuscular injection or intravenous administration can be used to help patients with advanced leukemia to relieve pain through the use of different analgesic methods. In the process of pain treatment, it is necessary to use drugs according to the doctor's advice, ensure the dosage of different analgesic drugs, and use drugs regularly at the same time, so as to ensure that different analgesic drugs can play a continuous role, reduce the overall pain of patients and avoid pain before continuing to use drugs^[20]. The use of analgesic drugs should follow the "three-step therapy" for cancer pain proposed by WHO, pay attention to individual differences of different patients, and the dosage of drugs should be from small to large, according to the order of non-opioid analgesics, weak opioid analgesics and strong opioid analgesics. In the process of using analgesics, do a good job of medication health education for patients, especially oral medication, so as to prevent patients from increasing their own dosage.

5. Summary and prospect

In the nursing care of patients with leukemia's late pain, it is necessary to pay attention to the comprehensive pain assessment of patients. Through the combination of analgesic drug nursing and non-drug pain nursing methods, the patients can be comprehensively helped to improve the pain situation and relieve the pain, so as to better cooperate with the treatment and nursing work.

References

- [1] Partanen M, Alberts NM, Conklin HM, et al. *Neuropathic pain and neurocognitive functioning in children treated for acute lymphoblastic leukemia. Pain, 2021.*
- [2] Ghaljaei F, Jalalodini A. *The effects of foot reflexology on pain and physiological indicators in children with leukemia under chemotherapy: a clinical trial study. Rep Pract Oncol Radiother, 2021, 26(6):955-961.*
- [3] Meeks H, Anghelescu DL, Meyer M, et al. *Successful Multimodal Treatment for Complex Regional Pain Syndrome in an Adolescent with Acute Lymphoblastic Leukemia: A Case Report. J Adolesc Young Adult Oncol, 2021.*
- [4] Yan H, He D, Huang W, et al. *Differentiation Syndrome with Severe Abdominal Pain During Induction Treatment of Acute Promyelocytic Leukemia: A Case Report. J Pain Res, 2021, 14: 1981-1984.*
- [5] Ito A, Osumi T, Fujimori K, et al. *Utility of emergent plain X-ray for childhood acute leukemia with bone pain. Pediatr Int, 2021.*
- [6] Romanus D, Kindler HL, Archer L, et al. *Does health-related quality of life improve for advanced pancreatic cancer patients who respond to gemcitabine? Analysis of a randomized phase III trial of the cancer and leukemia group B (CALGB 80303). J Pain Symptom Manage, 2012, 43(2):205-17.*
- [7] Essawy MA, Abohadida RM, Abd-Elkader WM, et al. *Comparing the effect of acupuncture and ginger on chemotherapy gastrointestinal side-effects in children with leukemia. Complement Ther Med, 2021, 60: 102730.*
- [8] Li Chun-ru, ZHANG Wen, FAN Bi-fa. *Numerical scoring (NRS) versus oral scoring (VRS) in elderly patients with chronic pain. Chinese journal of pain medicine, 2016, 22(09):683-686.*
- [9] Van Cleve L, Bossert E, Beecroft P, et al. *The pain experience of children with leukemia during the first year after diagnosis. Nurs Res, 2004, 53(1):1-10.*
- [10] Zhong Wei. *Nursing methods and effect analysis of oral pain in patients with leukemia. Chinese medical guide, 2020, 18(25):180-181.*
- [11] Goodwin J, Das B. *Acute Lymphoblastic Leukemia Presenting Solely as Low Back Pain. Clin Pract Cases Emerg Med, 2019, 3(1):59-61.*
- [12] Coluzzi F, Rocco M, Green Gladden R, et al. *Pain Management in Childhood Leukemia: Diagnosis and Available Analgesic Treatments. Cancers (Basel), 2020, 12(12).*
- [13] Barzilai-Birenboim S, Yacobovich J, Zalcberg Y, et al. *Bone pain at leukemia diagnosis and other risk factors for symptomatic osteonecrosis in children with acute lymphoblastic leukemia. Pediatr Blood Cancer, 2021, 68(8):e29033.*
- [14] Ramzee AF, Sameer M, Khan MB, et al. *Combination of Common Problem in a Rare Disease: Right Iliac Fossa Pain in a Chronic Myeloid Leukemia Patient. Cureus, 2020, 12(11):e11523.*

- [15] Louvign M, Rakotonjanahary J, Goumy L, et al. Persistent osteoarticular pain in children: early clinical and laboratory findings suggestive of acute lymphoblastic leukemia (a multicenter case-control study of 147 patients). *Pediatr Rheumatol Online J*, 2020, 18(1):1.
- [16] Ozer Etik D, Suna N, Borcek P, et al. When abdominal pain knocks the door: an unusual presentation of chronic lymphocytic leukemia. *Oxf Med Case Reports*, 2019, 2019(5):omz037.
- [17] Li F, Wang J, Liu A, et al. Prolonged lumbosacral pain as the initial presentation in acute lymphoblastic leukemia in an adult: A case report. *Medicine (Baltimore)*, 2019, 98(24):e15912.
- [18] Cheng Nannan. Evaluation of pain control effect of standardized cancer pain nursing mode on patients with advanced tumor. *China Standardization*, 2022, (02):149-151.
- [19] Kota V, Atallah E. Musculoskeletal Pain in Patients with Chronic Myeloid Leukemia after Tyrosine Kinase Inhibitor Therapy Cessation. *Clin Lymphoma Myeloma Leuk*, 2019, 19(8):480-487.
- [20] Bettle A, Latimer M, Fernandez C, et al. Supporting Parents' Pain Care Involvement with Their Children with Acute Lymphoblastic Leukemia: A Qualitative Interpretive Description. *J Pediatr Oncol Nurs*, 2018, 35(1):43-55.