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Application of Family Centered Nursing Model in Children with Acute Lymphoblastic Leukemia

Dan Huang[1,a], Jialin Ye[1,b,*]

[1]The First Affiliated Hospital, Sun Yat-Sen University, Guangzhou, Guangdong, China
[a]1036671175@qq.com, [b]148378696@qq.com
**Corresponding author*

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Abstract: Acute lymphoblastic leukemia is a serious disease that endanger the life, health and safety as well as the quality of life of children. Most children with such diseases require long-term or even lifelong treatment. During the treatment process, children are very prone to various accidents in their daily life, leading to an increase in the incidence of complications, which affects the treatment of their diseases and endangers their life. This article studies the application of the family centered nursing model in children's Acute lymphoblastic leukemia, providing a reference for ensuring the effectiveness and safety of children during home treatment in clinical practice.

1. Preface

Globally, childhood Acute lymphoblastic leukemia is relatively common. They have an acute onset and are characterized by high incidence, high fatality rate, high recurrence rate, and high economic burden. After a patient develops a blood disease in children, their hematopoietic system is affected, making them very prone to various bleeding situations in daily life[1]. If timely care is not provided, it will lead to the aggravation of the child's condition and endanger their life and health. For children with Acute lymphoblastic leukemia, the best available nursing approach in clinical practice is the family-centered nursing model, which is the best nursing plan provided for children with Acute lymphoblastic leukemia undergoing home treatment, to ensure the effectiveness and safety of treatment for children with Acute lymphoblastic leukemia in their daily life.

2. Overview of Acute lymphoblastic leukemia

Acute lymphoblastic leukemia is a disease that originates from the hematopoietic system or affects the hematopoietic system and is accompanied by abnormal changes in the blood. Acute lymphoblastic leukemia is a malignant tumor disease in which B-line or T-line cells originated from lymphocytes abnormally proliferate in the bone marrow. Abnormally proliferating primitive cells can accumulate in the bone marrow and inhibit normal hematopoietic function. At the same time, they can also invade tissues outside the bone marrow, such as the meninges, lymph nodes, gonads, liver, etc. China has conducted a survey on the incidence of leukemia. The incidence rate of ALL is

approximately 0.67 per 100,000. The incidence rate in oil fields and contaminated areas is significantly higher than the national incidence rate. ALL has a peak incidence period in childhood (0-9 years old), which can account for more than 70% of childhood leukemia cases[2].Anemia: It is manifested as weakness, fatigue, drowsiness, reduced activity endurance, pale skin and mucous membranes, palpitations, shortness of breath, dizziness, headache, drowsiness, excessive sleepiness, blurred vision, tinnitus, memory loss, slow response, loss of appetite, indigestion, nausea, vomiting, increased nocturia, low specific gravity urine, increased menstruation in women or secondary amenorrhea, decreased libido, etc. Bleeding: It is one of the important clinical manifestations of Acute lymphoblastic leukemia, mainly manifested as bleeding of the skin and mucous membranes, such as petechiae, purpura, ecchymosis, and hematoma on the skin. It can also be manifested as nosebleeds, bleeding from the gums, and excessive menstruation, etc. Severe patients may experience internal bleeding, such as hematuria, gastrointestinal bleeding, intracranial hemorrhage, etc. A few patients may die due to severe bleeding[3]. Fever: It is one of the clinical manifestations of Acute lymphoblastic leukemia, but it is the first manifestation in some patients. The mechanism of fever mainly includes two aspects: First, due to reasons such as granulocytopenia or weakened immune function, the patient's immunity is low, making them vulnerable to various pathogen infections, which is infectious fever; The second type is fever caused by blood system diseases themselves, mostly tumor fever, such as lymphoma, malignant histiocytosis, leukemia, myelofibrosis, etc. In addition, patients with Acute lymphoblastic leukemia may also experience symptoms such as swollen lymph nodes, liver and spleen[4].

The early symptoms of children with acute lymphoblastic leukemia are caused by the inability of the bone marrow to produce sufficient normal blood cells. Fever and excessive sweating in daily life can indicate infection, and the infection may be attributed to too few normal white blood cells. Bleeding, weakness, fatigue and paleness may be caused by too few red blood cells (anemia). Some children may experience breathing difficulties, accelerated heart rate or chest pain. They are very prone to bruising and bleeding in daily life, sometimes presenting as nosebleeds or gum bleeding, which may be attributed to too few platelets (thrombocytopenia). In some cases, the child patient may experience cerebral or abdominal hemorrhage. The following nursing guarantees should be provided for acute lymphoblastic leukemia treated at home: First, care for complications: Due to complications such as anemia, thrombocytopenia and neutropenia caused by lymphoblastic leukemia, relevant care should be carried out, such as monitoring blood routine. Second, prevent infection: As the child's immunity declines, they are prone to infection. Therefore, preventive measures should be taken, such as washing hands frequently, using disinfectant, and wearing masks. Third, take the medicine correctly as instructed by the doctor, pay attention to the side effects of the medicine, such as nausea, vomiting, diarrhea, etc., and report them to the doctor in time. At the same time, regular blood routine tests should be conducted to adjust the medication plan in a timely manner[5].

3. Key Points of family-centered Care Model in the Treatment and Care of Acute lymphoblastic leukemia

3.1 Advantages of the family-centered care model

Children with Acute lymphoblastic leukemia have an acute onset, rapid development and a severe degree of malignancy. Currently, the clinical treatment of Acute lymphoblastic leukemia mainly adopts a comprehensive treatment plan mainly based on chemotherapy. However, during the long-term treatment process of the children, due to the lack of intervention for the children and their families, there are many cases where the children give up treatment halfway[6]. In addition, the children patients are young, have poor self-care ability and poor compliance. The participation of

family members is needed to improve the quality of life of the children patients. The family-centered care (FCC) model not only focuses on the care of children's physical, emotional, social and educational needs, but also emphasizes the participation of the family to jointly maintain the health of the child patients[6]. The family-centered care model enables children patients to receive the most convenient and timely treatment, and thus becomes the first choice for early treatment. The family-centered care model has the following advantages: First, home treatment enables patients recovery as soon as possible. Second, reduce the time spent on the way to the hospital and waiting there, and minimize the time that children are affected by their studies or work. Third, it is convenient for children to receive preventive treatment.

3.2 Family-centered care methods

The family-centered care model requires close supervision by a multidisciplinary professional team and can only be initiated after the child and/or guardians have received adequate education and training. First of all, hospitals should focus on the family-centered medical model and provide training in home care skills for family members. The specific contents include:

3.2.1 Psychological care for family members

As children with acute lymphoblastic leukemia are often treated with chemotherapy regimens, but there are many adverse reactions during chemotherapy, increasing physical and mental suffering, family members are also relatively worried and anxious. The medical workrs attach great importance to communication with the children patients and their families, encourage them to face up to adverse reactions, stabilize their emotions, and provide emotional support to the children patients and social support to the families[7]. The medical workrs explain the patient's condition to the family members, including the current status of the condition, treatment plan and treatment goals, so that they can fully understand the entire treatment process, be aware of the possible adverse reactions during the treatment period, and gain their attention.

3.2.2 Enhance communication among family members

The medical workrs can regularly organize family member exchange meetings to promote communication among family members. Through sharing experiences, they can promote each other to further improve their intervention capabilities.

3.2.3 Assessment of Family Members' Nursing Ability

The evaluation of the intervention ability of the patient's family members: The nursing staff organize the patient's family members to conduct home care exercises and on-site operations. If problems such as insufficient disease awareness and operational errors are found, error correction and re-practice will be carried out on the teaching site[8]. For those with poor intervention ability such as unproficient operation process and significantly insufficient disease awareness, re-intervention skills training can be conducted.

3.2.4 Training on Psychological Support for family Members

This includes explaining to the patient's family the skills of providing psychological support to the patient, using the correct methods to make the patient feel the care of the family, etc. When the patient shows negative emotions,the medical workrs can guide the patient's family to share successful treatment cases to enhance the patient's confidence in treatment. When the patient shows resistance to treatment, medical workrs can guide the patient's family to positively guide them to

improve treatment compliance.

3.2.5 Dietary guidance training

This includes guiding the patient's family members to adjust the patient's daily diet structure to prevent adverse reactions such as oral ulcers caused by the intake of strongly irritating foods.

3.2.6 Infection Prevention Training

The treatment focus for children with acute lymphoblastic leukemia lies in infection prevention. Family members should be informed to visit the acute lymphoblastic leukemia diagnosis and treatment center every month for specialized follow-up, to adjust the treatment plan and assess the conditions of joints and important organs. Family intervention skills training, through various forms such as organizing symposiums and intervention training, enhances the intervention capabilities of patient family members, especially in psychological intervention and adverse reaction intervention for patients. In daily family care, it is necessary to remind family members to do the following care work well: First, remind family members to ensure that the child patient maintains a good living habit: regular rest, reasonable diet and moderate exercise. Make sure the child patient get enough sleep, take in a balanced diet, eat more fresh vegetables and fruits, avoid high-fat and high-sugar foods, and do moderate aerobic exercise every day[9]. Second, medical workrs can remind the family members to prevent the child from coming into contact with harmful substances: The family members should try to minimize exposure to chemicals such as benzene and formaldehyde. People engaged in related industries should take good personal protective measures, such as wearing protective clothing and masks. At the same time, the family members should try to make sure stay away from radioactive substances and avoid unnecessary radiation exposure. Third, remind the family members to take the child for regular physical examinations: Regular physical examinations are helpful for the early detection of acute lymphoblastic leukemia. Especially for those with a family history of acute lymphoblastic leukemia, they should pay more attention to physical examinations, detect abnormalities in time and take corresponding measures. Fourth, medical workrs can remind the family members to do a good job in the care of the child to prevent infection: Some viral infections may easily lead to infection in children with acute lymphoblastic leukemia, so it is necessary to ensure the child's personal hygiene to prevent infection. Such as getting vaccinated, avoiding close contact with infected people, and washing hands frequently, etc.

3.2.7 Safety knowledge training

Including potential unsafe factors that may occur during the patient's hospitalization and the safety incidents they may lead to, medical workrs can guiding the patient's family members to prevent the occurrence of adverse events for the patient.

3.2.8 Skills training for maintaining the functional status of venous catheters

Medical workrs must strictly follow the "Practical Standards for Infusion Therapy Intervention" to provide guidance on the maintenance of venous catheters to the patient's family members to maintain the function of the patient's venous catheters[10].

4. Summary

In conclusion, the family-centered care model is the most important and optimal one for children with Acute lymphoblastic leukemia. It requires family members to master the methods of daily disease prevention and treatment for children with Acute lymphoblastic leukemia, as well as the

emergency response methods for children, to ensure their safety in daily life.

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