

Original Research

Effectiveness of Acupressure Therapy in Cancer Patients with Constipation

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Email: zmunqidz@yahoo.co.id**How to cite this article:** Zahrawaani M, Allenidekania, Aprillia Z. Effectiveness of Acupressure Therapy in Cancer Patients with Constipation. *Health Dynamics*, 2024, 1(3), 73-79. <https://doi.org/10.33846/hd10303>**Copyrights:** © 2024 by the authors. This is an open access article under the terms and conditions of the Creative Commons Attribution – NoDerivatives 4.0 International (CC BY-ND 4.0) license (<https://creativecommons.org/licenses/by-nd/4.0/>).**ABSTRACT**

Background: Constipation in cancer patients on chemotherapy is common (31.7%), worsened by medication side effects. Laxatives worsen symptoms, prompting exploration of alternative therapies like acupressure, particularly in pediatric cases. Indonesian National Hospital research assesses acupressure's effectiveness in managing chemotherapy-induced constipation. This study aims to identifying the effectiveness of acupressure therapy in pediatric cancer patients with constipation. **Methods:** experimental research methods on cancer children with the health problem of constipation. **Results:** Before receiving acupressure therapy, the average patient had not defecated for 81 hours. Changes occurred after therapy, namely patients experienced defecation an average of 9.2 hours. **Conclusions:** The changes show that acupressure therapy is very significant in reducing constipation.

Keywords: Acupressure therapy; constipation; patient with cancer

1. INTRODUCTION

The prevalence of cancer patients suffering from constipation due to consuming chemotherapy drugs is 31.7% with an average severity level of moderate and having a negative impact on the patient's quality of life.⁽¹⁾ Preliminary research conducted by researchers in January 2021 found that of 11 children with cancer who received chemotherapy, 55% experienced constipation. Research shows that the use of chemotherapy drugs and opioids to reduce pain in cancer patients is a contributing factor to constipation.⁽¹⁻³⁾ The side effect of cancer therapy, namely constipation, often has a negative impact on daily life, well-being and quality of life.⁽⁴⁾ In addition, treating it effectively is a challenge, as medications specifically for constipation often cause side effects, requiring additional treatment to treat these symptoms.

Research shows constipation is poorly treated in hospitalized children.⁽³⁾ This research is strengthened by the results of research which found that constipation had not received proper treatment in the treatment room for children with cancer.⁽⁵⁾ Pediatric patients who experience constipation can be influenced by several factors such as a low fiber diet, immobilization, and use of medications.^(3,5)

Patients who receive chemotherapy experience constipation that is treated using laxatives, however laxatives (laxatives) often have side effects that disrupt the child's digestive tract such as nausea, vomiting, diarrhea and stomach

ache. The use of laxatives can increase the scale of pain in cancer patients so that non-opioid or opioid drugs are needed to reduce pain.⁽⁶⁾ So it is necessary to avoid using these laxatives to avoid patient discomfort. Alternative methods with complementary therapy are used to treat constipation in pediatric cancer patients.

Various studies on acupressure have been carried out and it has been proven that it can be used in various ages and various groups of patients with various types of diagnoses and can be carried out by nurses to treat constipation in cancer patients due to chemotherapy drugs. Acupressure has a positive impact in relieving constipation.⁽⁷⁾ Short-term acupressure is effective in reducing constipation in patients with advanced cancer.⁽⁸⁾ Therefore, this research was conducted to determine the effectiveness of acupressure in cancer patients experiencing constipation at the Indonesian National Hospital.

2. METHODS

2.1 Research methods

This research uses experimental research methods on cancer children with the health problem of constipation.

2.2 Selection and Sampling

This research was conducted on 20 children who had a medical diagnosis of cancer with chemotherapy treatment and were experiencing constipation. The research was conducted in the Children's Inpatient Room at the National Hospital in Indonesia. This research uses a sampling method with purposive sampling. Patients with inclusion criteria for children with cancer aged 2-18 years with a diagnosis of cancer who are undergoing chemotherapy, children are cooperative and able to withstand mild-moderate pain when acupressure is performed, children are able to understand when the benefits of therapy are explained. Exclusion criteria are children with vital signs below normal, cold acral or having a high fever.

Researchers identified patients according to the criteria using the Constipation Assessment Scale (CAS). Researchers also made selections according to the research inclusion and exclusion criteria. The researcher then provided an explanation of the research and asked the patient's parents/guardians for research approval. Research respondents will be given treatment, namely

acupressure therapy, then identify the effects of the therapy.

2.3 Research Measuring Tools

The Constipation Assessment Scale (CAS) is a scale measuring tool to measure the presence of constipation based on complaints that are often found in patients. The number of items used to measure there are eight items consisting of: 1) complaints of bloating, feeling of a full stomach (bloating) or abdominal distension, 2) complaints of reduced gas or flatus, 3) changes in the frequency of defecation. 4) stool consistency (dry or hard stool without any liquid that smells like feces). 5) there is a feeling of pressure from within that pushes towards the anus. 6) complaints of pain in the anus when defecating, 7) changes in the size of the feces (smaller or smaller) than usual, 8) feeling of wanting to defecate but not coming out (not urinating). This screening has passed the validity test and reliability and presented in Kyoto, Japan in 2016. The results of testing on 68 respondents aged 1-16 years were a valid CAS instrument used for children with cancer.

The CAS measurement consists of three measurement scales, namely scale 0 for no problem, scale 2 for a little problem or not too much problem, scale 3 for too much problem or very disturbing. The measurement results are carried out by adding up all the existing scores and then interpreting the measurement results. The interpretation of the total scoring results is that a scoring result of 0 indicates no constipation problems, a scoring result of 1 to 8 indicates mild constipation, and a score of 9-16 indicates severe constipation. A score of 16 indicates a severe constipation problem that requires immediate treatment or consultation with a digestive expert. Management of CAS scoring results is through constipation management to overcome constipation problems based on existing algorithms. This algorithm is a modification from various sources in dealing with constipation problems (Figure 1).

2.4 Research Ethics

Respondents were given an explanation of the research and asked for research approval from the patient's parents/guardians. This research has passed ethics at the University of Indonesia Ethics Institute with number Ket-193/UN2.F12.D1.2.1/PPM.00.02/2021. This research does not cause material or non-material

losses. The patient's condition before the study was assessed and was stable and able to participate in therapeutic activities. The researcher is a master's degree in nursing who has passed the pre-research test. Research activities are supervised by supervisors from

the relevant hospitals. Respondents do not receive coercion from any party and can stop research activities at any time if conditions do not allow it or the respondent refuses to undergo therapy.

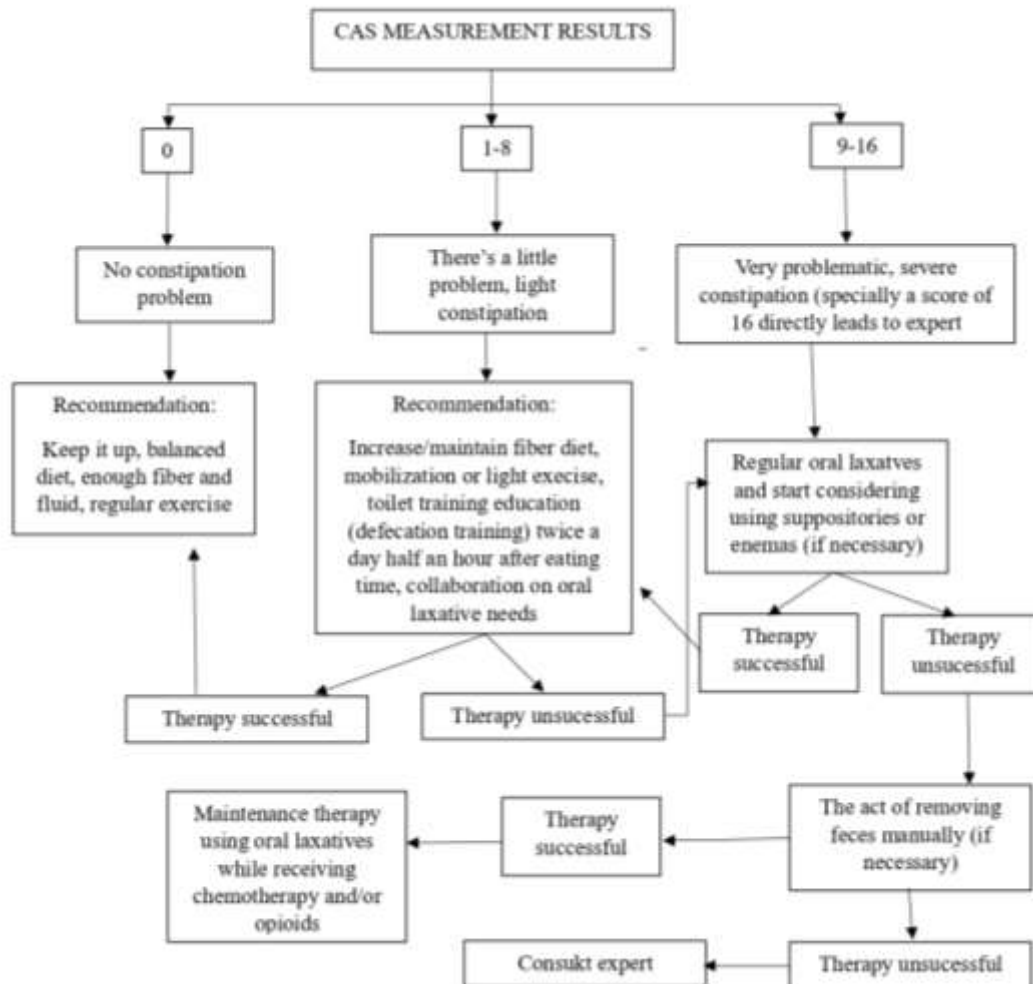


Figure 1. Algorithm of measurement results of Constipation Assessment Scale (CAS) in Children

2.5 Research procedure

Researchers provided explanations to parents/guardians about acupressure therapy. Acupressure therapy is also taught to families and nurses. The researcher then carried out an assessment, namely observing the child's temperature, heart rate, respiratory rate and temperature and recording it on a monitoring sheet. Researchers performed acupressure therapy to treat constipation in children with cancer who were receiving chemotherapy while being recorded by the patient's family. The recording results will be learning material for the patient's parents to continue therapy periodically every eight hours for the

child if the nurse is not on duty or when the patient has gone home. Acupressure is performed for 3-5 minutes 2-3 times a day for 30 days before the next chemotherapy. After that, researchers monitored any obstacles during acupressure therapy and analyzed the results of implementing therapeutic activities.

2.5 Research Analysis

Descriptive analysis was carried out to identify age, gender, type of chemotherapy, defecation pattern, fiber consumption, and degree of constipation. The analysis used to identify the effectiveness of acupressure therapy for constipation in children with cancer is the paired T test.

3. RESULTS

The research results in Table 1 show that the respondents were the youngest pediatric patients aged 2 years and the oldest 17 years, the average age of the respondents was 8.70 years. Table 2 shows that the majority of respondents were male (60%) and 3 types of chemotherapy were used, namely etoposide (35%), vincristine (40%), and methotrexate (25%). It also shows that, 50% of respondents consumed fiber and the other 50% did not consume fiber. The majority of respondents had a moderate degree of constipation, namely 55% and 40% severe. All respondents received chemotherapy and experienced constipation. Respondents had the longest frequency of defecation before therapy, namely once every five days, 40% and once every three days, 50%. After the respondent received acupressure therapy, the frequency of defecation changed to every day (100%) regularly.

Table 1. Description of Age and Defecation Patterns of Respondents (n = 20)

Variable	Mean	SD	Minimum	Maximum
Age (years)	8.70	4.714	2	17

Table 3 shows the impact of giving acupression therapy on constipation (p 0.000). Before receiving acupressure therapy, the average patient had not defecated for 81 hours. Changes occurred after therapy,

Table 3. Effectiveness of Acupressure Therapy in Child Cancer Patients with Constipation Problems (n = 20)

Variable	Mean	SD	Minimum	Maximum	p value
Defecation before	81	34.136	36	120	0.000*
Defecation after	9.20	4.742	1	18	

* p value is significant if $p < 0.05$

4. DISCUSSION

One of the complementary treatments is reflexology massage therapy or acupressure which has high effectiveness and safety and can be done by all health workers as part of promotive, preventive, curative and rehabilitative measures. Acupressure massage therapy is a non-pharmacological treatment.⁽⁹⁾ Massage or acupressure means applying pressure using the therapist's fingers at certain points so that blood

namely patients experienced defecation an average of 9.2 hours. The changes show that acupressure therapy is very significant in reducing constipation.

Table 2. Description of Gender, Type of Chemotherapy, Fiber Consumption, Degree of Constipation, Frequency of Defecation Before and After Therapy (n = 20)

Variable	N	%
Gender		
Man	12	60%
Woman	8	40%
Types of Chemotherapy		
Etoposide	7	35%
Vincristine	8	40%
Methotrexate	5	25%
Consume fiber		
Yes	10	50%
No	10	50%
Degree of constipation		
Light	1	5%
Medium	11	55%
Heavy	8	40%
Frequency of defecation before therapy		
Once in two days	2	10%
Once in three days	10	50%
Once in five days	8	40%
Frequency of defecation after therapy		
Every day	20	100%

circulation becomes smooth. Massage also increases oxygen intake to the brain smoothly. The benefits of this massage are to reduce pain in the body, increase endurance, relieve migraine symptoms. The basic techniques that are often used in reflexology are the technique of spreading the thumbs, rotating the hands and feet, as well as pressing and holding techniques.⁽¹⁰⁾

Complementary therapy with acupressure therapy is used throughout the world as an alternative for treating constipation, because chemical drug reactions do not respond well to the body, financial

problems and the expected level of recovery, people are starting to be interested in using this therapy.⁽¹¹⁾ Complementary therapy has been supported by various nursing theories such as Nightingale, Roger, Levine and can be used at various levels of prevention so that nurses can play a role according to the patient's needs. Complementary therapies are invasive and non-invasive. Examples of invasive complementary therapies are acupuncture and cupping (wet cupping) which uses needles in the treatment. While non-invasive types such as energy therapy (reiki, chikung, tai chi, prana, sound therapy), biological therapy (herbal, nutritional therapy, food combining, juice therapy, urine therapy, colon hydrotherapy and touch therapy modalities; acupressure, baby massage, reflexology, reiki, rolfing, and other therapies.⁽¹²⁾

Acupressure therapy is useful in reducing anxiety, pain, reducing hypertension, improving digestion, improving blood circulation.⁽⁸⁾ Nurses can use acupressure therapy as an independent action to treat constipation in cancer children. Competent nurses provide information to families regarding acupressure therapy, teach therapy to other nurses and families as home care or follow-up care, then evaluate the therapy that has been given.⁽¹⁰⁾ Acupressure therapy has been shown to have a positive impact in treating constipation in patients during treatment.⁽⁶⁻⁸⁾ This acupressure therapy can identify disorders or diseases in certain areas of the body by detecting the areas of the feet and hands. This therapy originates from China and ancient Egypt and was introduced to the West in 1920 by Dr William Fitzgerald, an ENT specialist from America who together with his colleague Eunice Ingham mapped sensitive areas on the feet. By applying the ten zones or energy channels of the body, it can reduce pain or other symptoms in the body's organs. Reflexology maps showing reflex points on the feet that count organs were developed by Eunice Ingham (1879-1974) with the help of her own experience and findings in previous research.⁽¹²⁾ Acupressure therapy, for many reflexologists, can also be called "zone therapy" which is currently accepted as the basis of modern reflexology discovered by Fitzgerald and systematized as a more complete technique by Ingham.⁽¹²⁾

Stimuli are perceived by the peripheral nervous system due to stimulated and electrochemically activated nerve endings and messages formed by the peripheral nervous system are delivered to the central nervous system through afferent neurons after reaching

the ganglion. Messages passing through the ganglion are carried to specific organs and glands via efferent neurons, and a response is established to the message.^(12,13) Thanks to reflexology method, connected organs and glands are stimulated. The lactic acid theory is a theory based on the fact that lactic acid accumulates in the feet as micro crystals, reflexology puts it into circulation again by dissolving these crystals as a result, reflexology allows energy and blood flow by opening blockages and removing toxins from within body.^(13,14) This theory also explains why when massaged, the problem spot feels like grains of sand or crystals.

Zonal acupressure therapy does not correspond to the meridian system of the Chinese system which is more dominant in acupressure. A person's 'vital energy' is said to flow along these zones, ending in the hands and feet. So, when pain is experienced in one part of the body, it can be relieved by applying pressure elsewhere in the body, within the same zone. Some reflexologists reject the suggestion of a connection to the chi and yin/yang of acupressure. They claim that they break down and disperse 'blood impurities' or 'crystals' that cause congestion and disrupt blood circulation. The crystals settle on the soles of the feet where reflexologists claim to be able to feel them.⁽¹⁴⁻¹⁶⁾ Others link their work to their belief in the existence of an etheric body in humans, and they bring about a state of harmony between the physical body and the etheric body.

As a complementary therapeutic modality, reflexology is currently used in many fields of medical science, such as neurology, gastroenterology, psychiatry, algology, physical care and rehabilitation, cardiology, pulmonology and oncology. To improve the quality of life by reducing cancer pain and the side effects of chemotherapy, this massage will make patients feel deep relaxation and refreshing emotions, to overcome complaints of dyspepsia, constipation, diarrhea and reflux in adults, and can be used as supportive therapy in treatment autism, cerebral palsy and speech defects in children. Considering studies related to reflexology, it was determined that reflexology reduces the symptoms of pain and anxiety in patients with stomach cancer in the postoperative period.^(4,6) Similar findings in patients with various types of cancer on chemotherapy.⁽¹⁰⁾

Most cancer patients and their families spend a large amount of money looking for complementary alternative treatments. Meanwhile, nurses are still

reluctant to promote the benefits of acupressure or reflexology therapy because of the long time use and little scientific evidence. Research that has been conducted to prove the benefits of this zone therapy has repeatedly shown that acupressure therapy has a positive effect on quality of life, stress, anxiety and reduction in pain.⁽⁷⁾

Literature reveals that acupressure therapy is also very useful for cancer treatment, treating pain and fatigue.⁽¹⁶⁾ Acupressure zone therapy increases blood flow to the appropriate organ or targeted body part. Findings using sonography showed a significant effect on blood flow to the kidneys during the massage process. Recent research also shows that the "nerve impulse theory" finds that stimulation from specific zone points on the feet can increase nervous nerve connections to the appropriate body parts. The theory of the autonomic nervous system shows that systems under the control of the autonomic nervous system, such as breathing, heart rate and blood pressure, will fluctuate with the stressor of massage thereby controlling calming changes. Acupressure therapy can work by stimulating the release of endorphins, thereby helping reduce pain and increase feelings of comfort and comfort. Relax.^(7,16)

5. CONCLUSION

Child cancer patients who are given chemotherapy drugs and opioids as painkillers can experience constipation. Constipation increases discomfort in pediatric cancer patients and the use of laxatives can add to other problems due to the impact of their use. Alternative efforts with acupressure therapy have been studied in various countries and its use has been proven to be effective in reducing constipation. In this research, it was found that acupressure therapy used in pediatric patients with constipation reduced constipation. The frequency of constipation, which was originally once every three to five days, became every day for patients defecating after being given therapy. The defecation pattern which was originally 81 hours before therapy changed to 9 hours after therapy. The effectiveness of acupressure therapy has a positive impact on patients and the use of this therapy method can be done independently by nurses and can even be done by the patient's family. This therapy does not have any negative impacts or unexpected side effects and cannot cause the patient's

condition to worsen. This research contributes to increasing the success of acupressure therapy in treating constipation. The use of acupressure therapy can be done consistently and continuously. Various research related to other complementary therapies needs to be carried out to prevent and treat constipation in pediatric cancer patients and in other patients who experience constipation either due to drugs or other factors.

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Conflict of Interest

The authors declare no conflict of interest.

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