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Complementary And Alternative Use In Lung Cancer Patients Systematic Review

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ABSTRACT

Lung cancer is one of the deadliest cancers, with 2.21 million cases and 1.80 million deaths globally in 2020. In Indonesia, lung cancer is the third most common cancer with 34,783 cases in 2018. The five-year survival rate is very low, especially in advanced stages. Complementary and alternative medicine (CAM) is becoming increasingly popular among cancer patients as an adjunct to conventional therapy. This study aims to systematically review the impact of complementary and alternative therapies on lung cancer patients, evaluating the additional benefits of CAM in the treatment of lung cancer patients. This study employs a systematic review method, gathering data from scientific journals, clinical reports, and related publications, including PubMed, Science Direct, and SageJournal. The inclusion criteria were original research articles published in English between 2014 and 2024. Based on the search results, only 5 articles met the analysis criteria. The study shows that Chinese Herbal Medicine (CHM), Laughter Yoga, and Press Needling can improve the quality of life for lung cancer patients. CHM increases progression-free survival (PFS) and reduces chemotherapy side effects. Laughter Yoga reduces stress and enhances mental health. Press Needling decreases postoperative pain and pulmonary complications. Chinese Herbal Medicine (CHM) improves progression-free survival and overall survival (OS) for lung cancer patients, reduces chemotherapy side effects, and enhances quality of life without causing significant additional toxicity. CHM is widely accessible with insurance coverage, but interactions with modern medicine must be monitored.

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INTRODUCTION

One type of malignant tumor that develops from the epithelium of the respiratory system, especially the bronchi, is lung cancer. Global Burden of Cancer data shows that in 2020, there were around 2.21 million cases of lung cancer worldwide, with 1.80 million deaths (Alfarisa et al., 2023). Indonesia had the highest annual death rate from lung cancer in Southeast Asia in 2018 with 26,095 deaths and 30,023 new cases. Lung cancer is the most common malignancy in men and ranks fourth in terms of the number of cases in women, according to three studies conducted in 100 hospitals in Jakarta. According to data from the Anatomical

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Pathology section of Persahabatan Hospital, almost 50% of cancer patients were diagnosed with lung cancer in 2014(Robot et al., 2021).

After breast cancer and cervical cancer, lung cancer is the third most common cancer in Indonesia, namely 34,783 cases or around 8.8% of the total cancer cases in Indonesia (396,914 cases). Compared with other types of cancer, lung cancer patients have a worse five-year survival rate of 22.9%. Cancer stage impacts a patient's ability to survive lung cancer. The survival rate for lung cancer patients identified at the local stage was 61.2%, but the rate for cases with regional spread was 33.5%. On the other hand, the five-year survival rate for metastatic lung cancer drops sharply to 7%(Alfarisa et al., 2023).

Lung cancer sometimes shows no symptoms in the early stages, this cancer is often only discovered at a later stage. The majority of lung cancer deaths are caused by lung cancer metastases to distant organs. Often, lung cancer spreads to the adrenal glands, brain, liver, and bones(Febriani & Furqon, 2020). It has been found through previous research that lung cancer ranks fourth and is most common in men. When lung cells multiply uncontrollably and rapidly, lung cancer occurs. Lung cancer can develop from uncontrolled growth of lung cells(Septhya et al., 2023).

Cancer is notorious for having a major physical and psychological impact on its victims. Despite significant advances in cancer diagnosis and treatment, the fact that cancer is still being diagnosed causes a lot of stress for those who suffer from it. This is related to understanding. The general public considers cancer to be synonymous with suffering, death and suffering. Individuals diagnosed with cancer and their treatment plans require assistance in meeting their care needs because these factors have a significant impact on their physical, psychological, social, and informational well-being. Symptoms of discomfort are always associated with impaired bodily function, and these symptoms can lead to challenges in daily activities and increased demand for support services(Dewi et al., 2024).

Cancer patients' quality of life is critical to their recovery, and to improve their quality of life, concerns about their condition, psychological problems, abnormalities in their body image, and any symptoms that may be distressing must be addressed immediately. Improving the standard of living of cancer patients will make them more compliant with the therapy they undergo during the recovery period, thereby strengthening their resilience in dealing with the various symptoms and complaints they experience.(Dewi et al., 2024).

Complementary-based therapeutic interventions that can improve a person's quality of life are something that nurses must offer. Complementary medicine is used in more than 88% of member countries along with national health systems to treat physical and mental problems such as fatigue, anxiety, sadness, and insomnia (Coughlin, 2019).

It is further said that complementary and alternative medicine (CAM) is one of the most widely used and fastest growing therapeutic methods in the United States, with an increasing number of cancer patients in Southeast Asia. Compared with other countries, this country already has strict laws, and between 40 and 59 percent of Indonesians consume domestically produced CAM (Dewi et al., 2024).

The terms “alternative” or “complementary” therapies refer to a range of methods or equipment that are not usually classified as medical or conventional therapies. The

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development of complementary therapies has attracted the attention of many countries and is now a popular therapy choice. This happens because of the public's demand for services that suit their preferences, because fulfilling these needs will affect their level of satisfaction. This provides a potential opportunity for nurses to participate in the delivery of additional therapy(Wijaya et al., 2022). Apart from treatment to treat pain and reduce patient stress, complementary and alternative medicine can be used as therapy(Panjaitan, 2016).

Complementary and alternative medicine plays an important role in world health services. The World Health Organization (WHO) has recommended the use of traditional medicine, including internal herbal therapy, to cure and prevent diseases, including cancer, degenerative diseases, and chronic diseases. In addition, WHO supports initiatives aimed at improving the efficacy and safety of conventional medicine (Wijaya et al., 2022).

A number of studies have shown a noteworthy positive impact on the use of complementary and alternative medicine by cancer patients (Panjaitan, 2016). However, there is still little research that specifically addresses the use of complementary and alternative medicine for lung cancer patients. Therefore, a comprehensive study regarding the application of complementary and alternative medicine in lung cancer patients is of interest to researchers.

METHODS

A systematic review approach was used in this study. A systematic review is a methodological approach to collecting, analyzing, synthesizing, and presenting data from a variety of studies regarding a research problem or theme of interest. Compared to a standard literature review, a systematic review can offer a deeper and more accurate level of information(Rodriguez & Arenas, 2018). Systematic reviews follow a predetermined methodology, are more thorough, rigorous, and set a time frame for literature selection(Richardson, 2013). The stages and procedures followed in the systematic review process help reduce the possibility of bias and subjective interpretations of researchers.

The research protocol used in this systematic review is The Joanna Briggs Institute Guideline as a guide for assessing the quality of the studies reviewed. The guide used is the PRISMA checklist guideline which functions as a writing guide in systematic reviews. Aromataris and Munn (2020) stated that there are several stages in conducting a systematic review, namely: 1) Formulating research questions, 2) Determining inclusion and exclusion criteria, 3) determining search strategies, 4) Data selection, 5) Carrying out study quality assessments, 6) Data extraction, 7) Analysis and synthesis of relevant studies, 8) Presentation and Interpretation of results.

Before conducting a systematic review, researchers formulate research objectives and formulate research questions as a guide in searching for articles. The research question being explored is "how does the use of complementary and alternative treatments affect lung cancer patients?". The search process in this literature uses a strategy, namely by formulating research questions into appropriate keywords. The keywords used in the PICOT format in this research aim to be able to identify when searching and finding the right literature(Melnyk & Fineout, 2011).

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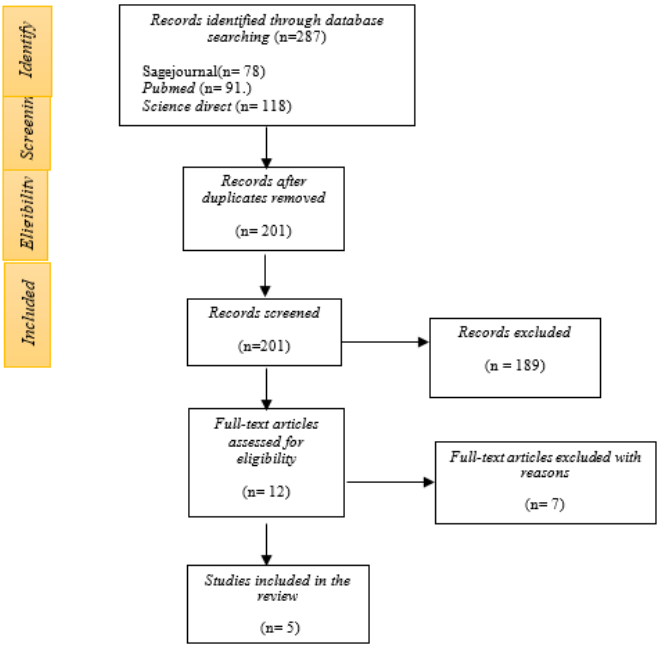
In this research, eligibility criteria are needed to simplify the process of selecting relevant literature. Exclusion and inclusion criteria function as filters in selecting and rejecting articles(Zhu, Sari, & Lee, 2018). The inclusion criteria in this Systematic Review are as follows: 1) Type of source, namely primary resources or original article 2) Literature discussing lung cancer, complementary and alternative 3) Research design Randomized Controlled Trial (RCT) and Quasi Experiment 4) Literature in full form -text and published in English 5) Literature published within the last 10 years (January 2014-July 2024), limited to the latest articles 6) Results report improvements measured using valid and reliable instruments. The exclusion criteria used in this research are qualitative research, Systematic Review method, Literature Review and the content of the article is not relevant or does not match the research objectives.



Gambar 3.1 PRISMA *Flow Diagram of Trial Selection Process for Critical Reviews*

RESULTS AND DISCUSSION

A total of 287 articles were found to be relevant to keywords based on search results from three databases with limited publications from 2014 to 2024. There were 201 articles after the same title was removed. 201 papers were obtained despite a screening process involving review of research titles and abstracts. Ultimately, only five publications were brought forward for analysis based on the inclusion criteria. 189 articles were excluded from the review list for the following reasons: inappropriate population (patients without lung cancer), study was cross-sectional, case report, qualitative study, and contained only a protocol.

The methodological quality of each article was assessed using The Joanna Briggs Institute (JBI) Critical Appraisal Tools, especially the JBI Checklist for Randomized Controlled Trial (2018). There are 13 questions in the JBI checklist with answer choices for each section,

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namely "Yes", "No", "Unclear" or "Not Applicable (NA)". A Yes answer to each question is given a score of 1 and after that the total score will be calculated.

Of the 5 studies that were obtained and met the criteria for a systematic review, the results obtained were 4 studies using a Randomized Controlled Trial and 1 study using a quasi experiment. Based on the results obtained, after a critical appraisal was carried out using The JBI Checklist for Randomized Controlled Trial, a total quality score of eleven to thirteen points was given and for the Quasi-Experimental Study, a total quality score of up to 9 points was given on the checklist. Data that is relevant to the research objectives is then extracted. The data extracted in this Systematic Review uses Microsoft Excel and Mendeley software to make it easier to manage literature. After that, the data will be summarized using a table by including the author's name and year of article publication, article title, country of origin, journal name, research objectives, research design, sampling method, sample size, research instruments and findings. Based on the themes chosen by researchers in a systematic review regarding the use of complementary and alternative treatments for lung cancer patients, the data taken in each article must contain the following information:

1. Characteristics of research include data on design type, variables used, measurement instruments, number of respondents, data analysis, research location and research results
2. Complementary and alternative interventions for lung cancer patients
3. Research limitations faced by researchers in conducting data analysis and the research process.

The risk of bias of this research will be carried out by three reviewers, namely the two research members and the researcher using *The Cochrane Risk of Bias Tool*.This assessment instrument consists of the domains of selection bias (random sequence generation and allocation concealment), performance bias (blinding of participants and personnel), detection bias (blinding of outcome assessment), attrition bias (incomplete outcome data), reporting bias (selective reporting) and other biases. After that*reviewer*will determine whether the article's risk of bias is high or low risk(Higgins, Altaman, & Sterne, 2011). The articles obtained were assessed for their suitability using*JBIchecklist for randomized controlled trials*and JBI critical appraisal checklist for quasi-experimental studies so that it can be used in this research. The results of the assessment of 5 articles carried out by three reviewers using JBI with the average scores are as follows:

Table 3.3 Article Assessment Results UsingJBI Critical Appraisal Tool

Citation	Criteria													Results
	1	2	3	4	5	6	7	8	9	10	11	12	13	
(Hung et al., 2017)											√			11/13=85%
(Li et al., 2022)											√			11/13=85%
(S. Han et al., 2023)										√				10/13=78%
(Y. Han et al., 2016)									√					9/9=100%
(Jiang et al., 2023)											√			11/13=85%

The results of the literature search were that most of the research used randomized controlled trial and quasi-experimental designs which explained the effect of using

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complementary and alternative therapies on lung cancer patients as well as methods and techniques for using complementary and alternative therapies on lung cancer patients. The research results that comply with the systematic review criteria are then summarized using the following table:

No	Author's name and year	Title	Research purposes	Intervention	Results
01.00	(Hung et al., 2017)	The Efficacy of Traditional Chinese Herbal Medicine in the Treatment of EGFR Mutated Stage IV Pulmonary Adenocarcinoma Patients Who Received First-Line EGFR-TKI Treatment	Knowing the efficacy of Chinese Herbal Medicine in the treatment of lung cancer	This study used a retrospective design. Patients receiving EGFR-TKI therapy also receive additional treatment with CHMs, such as Herba Houttuyniae and Herba Oldenlandiae, to improve immunity and reduce certain symptoms. CHM is given by pharmacists and prescribed by doctors.	Alternative treatment of CHM during first-line EGFR-TKI treatment did not harm patients and PFS and overall survival were numerically better, although not significant, compared to patients who did not receive CHM treatment.
02.00	(Li et al., 2022)	Efficacy of Prophylactic Traditional Chinese Medicine on Skin Toxicity of Afatinib in EGFR Mutation-Positive Advanced Lung Adenocarcinoma: A Single-Center, Prospective, Double-Blinded, Randomized-Controlled Pilot Trial	Evaluating the efficacy of prophylactic traditional Chinese medicine against skin toxicity in patients with advanced lung adenocarcinoma treated with primary epidermal growth receptor (EGFR)-tyrosine kinase inhibitors (TKIs)	This study used a prospective, single-center, double-blind Randomized Controlled Trial (RCT) design to compare skin toxicity between afatinib plus TCM and afatinib plus placebo in patients with metastatic lung adenocarcinoma with EGFR mutations. The intervention included random assignment to the TCM or placebo group with use of sealed opaque envelopes to maintain blinding, initiated concurrently with afatinib and continued for 3 months.	Integrative TC may prolong the time to first skin toxicity in patients with advanced lung adenocarcinoma treated with first-line afatinib. Prophylactic TCM can delay any raised skin toxicities and reduce the incidence of grade 3 skin toxicities.

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No	Author's name and year	Title	Research purposes	Intervention	Results
				Patients are evaluated periodically by specialist physicians, using the Common Terminology Criteria for Adverse Events scoring system to categorize the severity of skin toxicity. Follow-up evaluation includes tumor response, quality of life evaluation, and safety for up to 3 years.	
03.00	(S. Han et al., 2023)	The Effects of Laughter Yoga on Perceived Stress, Positive Psychological Capital, and Exercise Capacity in Lung Cancer Chemotherapy Patients: A Pilot Randomized Trial	Examining the effect of laughter yoga on perceived stress, positive psychological capital, and exercise capacity in lung cancer patients.	The study involved a control group receiving routine care and standard health education, while an additional intervention group received Laughter Yoga as an additional intervention.	The results of this study indicate that yiga laughter is an effective way and can produce beneficial effects on stress perception, positive psychological capital, and exercise capacity.
04.00	(Y. Han et al., 2016)	Chinese herbal medicine as maintenance therapy for improving the quality of life for advanced non-small cell lung cancer patients	This study was to assess the efficacy and safety of using Chinese herbal medicine as maintenance therapy by considering the survival of patients with advanced non-small cell lung cancer after first-	Patients in the control group received palliative care according to the NCCN Cancer Palliative Care Guide (Version 1.2010). These interventions include analgesics, paracentesis, psychosocial care, nutritional support, and blood transfusions, according to individual patient needs. Local radiotherapy is used to reduce pain in	Of 106 patients, 99 completed the study. CHM is well tolerated and can improve the quality of life of patients with advanced NSCLC.

No	Author's name and year	Title	Research purposes	Intervention	Results
			line platinum-based chemotherapy.	the palliative range. No other anticancer therapy was allowed during the study. Strict quality control is implemented to ensure consistency of care.	
				Patients in the trial group also received palliative care based on the same guidelines plus Chinese Medicine (CHM). CHM consists of 10-20 types of herbs selected based on the characteristics of Chinese Medicine syndrome in advanced lung cancer. Each syndrome is diagnosed according to certain criteria and prescribed the appropriate CHM, consisting of 3-5 herbs. CHM treatment was administered orally twice daily, starting at random assignment and continuing until subsequent disease evaluation or joint physician-patient decision.	
05.00	(Jiang et al., 2023)	Effects of Press Needling combined with general anesthesia on postoperative	Investigated the effect of push needle therapy on postoperative analgesia	This study identified and marked the Taiyuan (LU 9), Feishu (BL 13), Danzhong (RN 17), and Kongzui (LU	The Acu Group showed significantly lower NRS scores than the Control Group at 24

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No	Author's name and year	Title	Research purposes	Intervention	Results
		analgesia in thoracoscopic pulmonary resection for lung cancer: A randomized, single-blind, controlled trial	and other relevant complications in patients undergoing thoracoscopic lung resection in lung cancer patients.	6) acupuncture points in patients two hours before induction of anesthesia. The attachment of the tape to the skin ensured consistency and standardization in the application of the pressure needles used in this study. The acupuncture points were selected based on previous research and the theory of the Chinese meridian system. Taiyuan, Danzhong, and Kongzui are located on the lung meridian which has the potential to improve gas and blood circulation, while Feishu falls on the bladder meridian with indications for respiratory disorders. Patients receive a press needle with specifications of 0.2 mm in diameter and 2.0 mm in length, and equipped with a transparent ring to prevent excessive penetration into the skin. The choice of intradermal needle length is tailored to maximize therapeutic effectiveness and patient comfort, while minimizing risks.	hours and 48 hours after surgery (NRS score at 24 hours: Acu vs. Control, 3 (2.3) vs. 3 (3.5), Z = – 3.393, P<0.01; NRS score at 48 hours: 2 (1.3) vs. 3 (2.5), Z = –3.641, P<0.01). There was a decrease in the incidence of pulmonary complications after surgery in the Acu Group.

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Chinese Herbal Medicine

The Effect of Using Complementary and Alternative Therapies on Lung Cancer Patients

The use of Chinese herbal medicine (CHM) as a complementary therapy for stage IV adenocarcinoma lung cancer patients with EGFR mutations showed that patients who received CHM during EGFR-TKI treatment had better median progression-free survival (OS) times and overall survival (OS). longer, although not statistically significant, compared with patients who did not receive CHM(Hung et al., 2017).

Study Dong et al (2017)conveyed that the use of CHM did not cause significant additional toxicity, indicating that it is a safe option and has proven positive effects on the quality of life of lung cancer patients, although the effect was not statistically significant. In addition, several Chinese herbal treatments (CHM) have been proven to reduce the side effects of chemotherapy such as nausea. StudyWang et al (2013)A meta-analysis of response to treatment suggests that astragalus-based CHM may increase the effectiveness of platinum-based chemotherapy for advanced non-small cell lung cancer when combined with chemotherapy, although these results require further confirmation through phase III clinical trials.

Li et al (2022)in their research showed that the use of traditional Chinese complementary therapy (TCM) together with afatinib as first-line treatment can reduce skin toxicity associated with EGFR-TKI treatment in patients with locally advanced or metastatic adenocarcinoma lung cancer with EGFR mutations. TCM had a significant effect in reducing the time to appearance of skin toxicity and the incidence of grade 3 skin toxicity compared with placebo. Additionally, patients receiving TCM demonstrated improved quality of life (QOL) assessed using various dermatology- and lung cancer-related quality of life indices.

The use of Complementary and Alternative Therapy (TKA), especially Chinese Herbal Medicine (CHM), in lung cancer patients has shown several significant results. This study revealed that although there was no significant difference in disease progression-free time (PFS) between the groups receiving CHM and controls, the trial group with CHM showed a significant increase in the probability of 3-month PFS. In addition, the quality of life (QOL) of patients receiving CHM improvedsignificant in various aspects such as physical, functional, emotional well-being, and lung cancer symptoms compared to the control group. However, improvements in social welfare were not seen(Y. Han et al., 2016).

However, the safety of CHM is maintained with minimal side effects and can be handled well. The study also noted several limitations, including the absence of a placebo for CHM and challenges in collecting eligible patients. Overall, CHM shows potential as a beneficial short-term maintenance therapy for advanced NSCLC patients, especially in improving their quality of life, although further research is needed to confirm these findings(Y. Han et al., 2016).

Methods and Techniques for Using Complementary and Alternative Therapies in Lung Cancer Patients

Patients have the option to receive Chinese Herbal Medicine (CHM) along with EGFR-TKI therapy at no additional cost, as the costs are covered by the national health insurance. CHM treatment can be started at the start of EGFR-TKI therapy or after the disease has

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progressed. The average number of visits to outpatient clinics for Chinese Herbal Medicine (CHM) was 7.3 times, with the number of visits varying between 1 and 39 times during treatment with EGFR-TKI. The median time to CHM consumption was 19 weeks, with a range from 4 to 139 weeks(Hung et al., 2017).

Chinese Herbal Medicine (CHM) is given based on the patient's physical condition and the type of cancer treatment they are undergoing. It is important for patients to obtain CHM at a health facility that has complete medical information to prevent negative impacts. The introduction of CHM in cancer treatment requires a systematic approach, which includes phytochemical profiling, quality control, pre-clinical evaluation, safety evaluation, as well as clinical trials from phase I to phase III. CHM is used as adjuvant therapy during chemotherapy to reduce side effects and improve quality of life. However, interactions between CHM and modern medications should be carefully monitored to prevent adverse side effects(Dong et al., 2017).

Methods and techniques for using complementary and alternative therapies in lung cancer patients in this study involved recruiting patients from four hospitals between September 2011 to March 2014. A total of 106 patients were initially recruited, but seven patients did not complete the study due to protocol violations, leaving 99 patients who completed treatment. The per protocol analysis population (PPS) consisted of 99 patients, and the full analysis population (FAS) consisted of 106 patients. There were no significant differences in demographic and clinical characteristics between the two groups, including age, sex, disease stage, pathological type, chemotherapy cycles, response after standard chemotherapy, or ECOG performance status(Y. Han et al., 2016).

The use of Chinese Herbal Medicine (CHM) as a complementary therapy was evaluated by comparing Progression-Free Survival (PFS) and quality of life (QOL) between the trial group receiving CHM and the control group. The cut-off date for analysis was July 2014, with a median follow-up time of 146 days. CHM is administered according to individual treatment needs in combination with standard therapy. During the study, CHM demonstrated a significant increase in 3-month PFS probability and significant improvement in several QOL domains such as physical, functional, emotional well-being, and lung cancer symptoms. Safety evaluation showed no significant difference in side effects between the two groups, and the side effects that occurred could be managed by temporary discontinuation or symptomatic treatment.This study ensured accurate measurements through rigorous radiological assessments every two months and patient self-completed QOL questionnaires(Y. Han et al., 2016).

Laughter Yoga / Laughter Yoga

The Effect of Using Complementary and Alternative Therapies on Lung Cancer Patients

This study evaluated the effect of complementary and alternative therapies, especially laughter yoga, on lung cancer patients undergoing chemotherapy. The results of the study showed that after the laughter yoga intervention, there was a significant decrease in the Perceived Stress Scale (CPSS) score in the intervention group compared to the control group. This indicates that laughter yoga is effective in reducing stress levels in lung cancer patients. Additionally, the intervention group also demonstrated significant increases in positive

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psychological capital, reflecting positive psychological experiences and better mental health(S. Han et al., 2023).

In addition to reducing stress and improving mental health, this study also found that laughter yoga therapy can increase patients' exercise capacity. This was measured via the 6-minute walk test (6-MWT), in which the intervention group showed a significant increase in exercise capacity after therapy compared to the control group. These results show that laughter yoga is not only beneficial for mental health, but can also improve the physical condition of lung cancer patients undergoing chemotherapy(S. Han et al., 2023).

Methods and Techniques for Using Complementary and Alternative Therapies in Lung Cancer Patients

This study evaluates methods and techniques for using complementary and alternative therapies, especially laughter yoga, in lung cancer patients. Laughter yoga is a new form of aerobic exercise that incorporates simulated laughter exercises. During the intervention, participants participated in shared laughter sessions that not only aided in emotional communication and information sharing, but also provided spiritual support. Another technique included in laughter yoga is deep breathing exercises which aim to activate the parasympathetic system and reduce the activity of the sympathetic system, thereby reducing psychological stress in the patient(S. Han et al., 2023).

In addition, the stimulation of laughter in laughter yoga has a positive effect in reducing the release of neuroendocrine and stress hormones. This technique has been shown to be effective in reducing serum cortisol levels and increasing endorphin production, which ultimately strengthens the immune system. With a combination of deep breathing exercises and simulated laughter, laughter yoga can provide significant benefits in reducing psychological stress and improving the emotional and physical well-being of lung cancer patients undergoing chemotherapy.(S. Han et al., 2023).

Press Needling

The Effect of Using Complementary and Alternative Therapies on Lung Cancer Patients

This study shows that the use of complementary and alternative therapy in the form of press-needle-assisted analgesia during thoracoscopic surgery can reduce postoperative pain in lung cancer patients. The results of this study showed that the group that received acupuncture therapy with pressure needles experienced a significant reduction in postoperative pain scores compared to the control group. In addition, the use of pressure needles was also associated with a reduced incidence of postoperative pulmonary complications (PPCs) in patients undergoing lung resection using VATS. There were no significant differences in hemodynamic indices and the incidence of adverse reactions between the two groups, indicating that the combination of pressure needles with general anesthesia is safe and reliable(Jiang et al., 2023).

Other research results that support these findings include research by Fan et al. and Chen et al. who found that electroacupuncture and acupuncture point stimulation can reduce the need for postoperative analgesics and reduce the use of ineffective PCIA (Patient-Controlled Intravenous Analgesia). Although several other randomized controlled studies have shown that acupuncture does not affect postoperative pain, the results of this study are

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consistent with the hypothesis that stimulation of certain acupuncture points can improve blood circulation and reduce the inflammatory response contributing to the reduction of postoperative pain. The decrease in inflammatory mediators such as IL-1 in the needle pressure group suggests a possible role for acupuncture in reducing the inflammatory response, which ultimately helps reduce pain and postoperative pulmonary complications.(Jiang et al., 2023).

Methods and Techniques for Using Complementary and Alternative Therapies in Lung Cancer Patients

This study used a prospective, single-blind, randomized controlled trial to evaluate the analgesic effect of push-needle therapy during thoracoscopic surgery. The results showed that the group that received pressure needle therapy experienced a significant reduction in postoperative pain scores compared to the control group. In addition, the incidence of postoperative pulmonary complications (PPC) was lower in push needle users who underwent VATS lung resection. There were no statistically significant differences in hemodynamic indices and the incidence of adverse reactions between the two groups, indicating that the use of push needles under general anesthesia is safe and reliable. A significant reduction in Visual Analog Scale (VAS) scores in the acupuncture point stimulation group was also observed, indicating that needle pressure therapy was effective in relieving postoperative pain.(Jiang et al., 2023).

Another study conducted by Fan et al. and Chen et al. supports these findings, where electroacupuncture therapy and transcutaneous acupuncture point stimulation also showed a significant reduction in postoperative pain in patients undergoing thoracoscopic lung resection. However, several randomized controlled studies have shown that acupuncture does not affect postoperative pain, as found by Yang et al. and Deng et al.

These differences in results may be due to variations in the selection of acupuncture points, surgical methods used, as well as differences in study populations. In this study, preoperative needle-pressure therapy was associated with a reduced incidence of postoperative pulmonary complications, possibly due to stimulation of acupuncture points on the lung meridian that improved gas exchange and oxygenation, as well as a reduction in inflammatory mediators. This allows patients to more effectively expel secretions by coughing and moving earlier, thereby reducing the risk of postoperative lung infections(Jiang et al., 2023)

CONCLUSION

The use of Chinese Herbal Medicine (CHM) as a complementary therapy for lung cancer patients has shown several significant benefits. Studies show that patients who received CHM during EGFR-TKI treatment had longer disease progression-free (PFS) and overall survival (OS) times, although not always statistically significant. CHM can also reduce chemotherapy side effects and improve patients' quality of life without causing significant additional toxicities. CHM administration methods adapted to the patient's physical condition and treatment, as well as evaluation through clinical trials, ensure the safety and effectiveness of this therapy. In addition, CHM can be provided at no additional cost because it is covered

by national health insurance, facilitating wider access for lung cancer patients. Studies also show significant improvements in quality of life, especially in physical, functional, and emotional aspects. However, interactions between CHM and modern medications should be carefully monitored to prevent adverse side effects. Overall, CHM has potential as a beneficial maintenance therapy for lung cancer patients, although further research is needed to confirm these findings.

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