

[Integrative Oncology in Young Women With Breast Cancer](#)

1. Oncology (Williston Park). 2022 Nov 8;36(11):658-663. doi: 10.46883/2022.25920978.

Authors

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Abstract

Small studies have demonstrated the benefit of integrative oncology (IO) therapies in patients with breast cancer; however, referral patterns and timing of therapies are unknown. This study describes the referral pattern and utilization of IO services by young women with breast cancer. A retrospective review identified female patients, 40 years or younger, with a breast cancer diagnosis between 2014 and 2019, and a documented IO consultation. Patient demographics, cancer characteristics, treatments, reasons for seeking and timing of IO consultation, and IO treatment modalities were analyzed. The IO program treated 64 young women with a median age of 38.6 years. Clinical staging was primarily IA (27%), IIA (34%), or IIB (27%), and 64% of patients were clinically node negative with no evidence of metastasis. Women utilized the IO program for recurrence risk reduction and for treatment-related adverse effects (TRAEs), most commonly vasomotor complaints (44%). Therapies utilized were acupuncture (36%), healing touch (28%), oncology massage (30%), and other (75%; music therapy, therapeutic art, spiritual care, meditation, t'ai chi, yoga, and nutrition), which were commonly initiated during treatment (69%). Our data suggest that young women utilize IO services to reduce their future cancer risk and TRAEs, but they are often referred after standard cancer care treatments have begun. Future studies could examine the optimal timing for IO intervention.

[Isolation, Characterization and Anticancer Activity of Two Bioactive Compounds from *Arisaema flavum* \(Forssk.\) Schott](#)

2. Molecules. 2022 Nov 16;27(22):7932. doi: 10.3390/molecules27227932.

Authors

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Abstract

Medicinal plants play important role in the public health sector worldwide. Natural products from medicinal plants are sources of unlimited opportunities for new drug leads because of their unique chemical diversity. Researchers have focused on exploring herbal products as potential sources for the treatment of cancer, cardiac and infectious diseases. *Arisaema flavum* (Forssk.) is an important medicinal plant found in the northwest Himalayan regions of Pakistan. It is a poisonous plant and is used as a remedy

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against snake bites and scorpion stings. In this study, two bioactive compounds were isolated from *Arisaema flavum* (Forssk.) and their anticancer activity was evaluated against human breast cancer cell line MCF-7 using an MTT assay. The crude extract of *Arisaema flavum* (Forssk.) was subjected to fractionation using different organic solvents in increasing order of polarity. The fraction indicating maximum activity was then taken for isolation of bioactive compounds using various chromatographic and spectroscopic techniques such as column chromatography, thin-layer chromatography (TLC), gas chromatography-mass spectrometry (GC-MS), Fourier transform infrared spectroscopy (FTIR) and nuclear magnetic resonance spectroscopy (NMR). Crude extract of *Arisaema flavum* (Forssk.), as well as various fractions extracted in different solvents such as n-hexane, chloroform and ethyl acetate, were tested against human breast cancer cell line MCF-7 using an MTT assay. The crude extract exhibited significant dose-dependent anticancer activity with a maximum activity of 78.6% at 500 µg/mL concentration. Two compounds, hexadecanoic acid ethyl ester with molecular formula $C_{18}H_{36}O_7$ and molar mass 284 and 5-Oxo-19 propyl-docosanoic acid methyl ester with molecular formula $C_{26}H_{50}O_3$ and molecular mass 410, were isolated from chloroform fraction. These compounds were tested against the MCF-7 cell line for cytotoxic activity and exhibited a significant ($p < 0.001$) decrease in cell numbers for MCF-7 cells with IC_{50} of 25 µM after 48 h of treatment. Results indicated that *Arisaema flavum* (Forssk.) possesses compounds with cytotoxic activity that can further be exploited to develop anticancer formulations.

[Mindfulness-based Interventions and Yoga for Managing Obesity/Overweight After Breast Cancer: A Scoping Review](#)

3.

Integr Cancer Ther. 2022 Jan-Dec;21:15347354221137321. doi: 10.1177/15347354221137321.

Authors

[Vicki Vuong](#)¹, [Vibhuti Rao](#)², [Carolyn Ee](#)^{2 3}

Abstract

Introduction: Weight gain after breast cancer is common, and obesity after breast cancer increases breast cancer recurrence and mortality. Mindfulness-based interventions (MBIs) and yoga have been shown to be effective in managing obesity/overweight in people without breast cancer. There is a need to systematically map the extent and range of evidence on yoga and MBIs for managing obesity/overweight after breast cancer in order to aid planning and commissioning of future research.

Methods: We conducted a scoping review informed by methods described by Levac et al. Five electronic databases were searched for any peer-reviewed original research (including systematic reviews) that examined the role of yoga and/or MBIs for managing overweight/obesity after breast cancer. Data were extracted on study, population, intervention, comparator and outcome characteristics, and described narratively.

Results: We found 18 publications representing 15 unique studies (11 clinical trials, 2 systematic reviews, and 2 observational studies). There were 10 studies on yoga, and 5 on MBIs. Of the clinical trials, only 4/11 examined a weight-related outcome as the primary outcome. The remaining trials examined lifestyle or metabolic outcomes (5/11) or unrelated outcomes such as psychological health (2/11). Gaps in the

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literature included small sample sizes, lack of cultural diversity amongst participants, inadequate reporting of the intervention, few lifestyle co-interventions offered, lack of active comparator groups, and inadequate safety reporting.

Conclusions: There is a need for adequately-powered RCTs that adhere to reporting guidelines. The use of gold-standard methods for measuring outcomes, and active comparator groups, is also recommended.

[Yoga Therapy During Chemotherapy for Early-Stage and Locally Advanced Breast Cancer](#)

4.

Integr Cancer Ther. 2022 Jan-Dec;21:15347354221137285. doi: 10.1177/15347354221137285.

Authors

[Samantha K Greaney](#)¹, [Neha Amin](#)¹, [Bethany C Prudner](#)¹, [Maggie Compennolle](#)², [Linda J Sandell](#)¹, [Susan C Tebb](#)³, [Katherine N Weilbaecher](#)¹, [Peri Abeln](#)¹, [Jingqin Luo](#)¹, [Yu Tao](#)¹, [Angela C Hirbe](#)¹, [Lindsay L Peterson](#)¹

Abstract

Background: Chemotherapy is associated with decreased quality of life (QOL), fatigue, depression, and weight gain in patients with breast cancer. Weight gain is associated with poorer prognosis. Yoga improves QOL, fatigue, and mood in women with breast cancer but its effect on treatment-related weight gain has not been studied. The aim of this trial was to determine the feasibility of personalized yoga therapy in women receiving treatment for early-stage or locally advanced breast cancer and assess its impact on weight gain.

Methods: Thirty women were randomized 1:1 to receive yoga therapy by a certified yoga therapist during treatment or a control group. Participants in the yoga arm were asked to complete three 30 minute yoga sessions weekly (which included movement, breath work, mindfulness, and relaxation) throughout adjuvant or neoadjuvant chemotherapy (N = 29) or endocrine (N = 1); the control arm received breast cancer treatment without yoga. For comparability between participants randomized to yoga therapy, the single patient treated with endocrine therapy was excluded from the analysis. Primary outcomes were feasibility and weight change. Additional outcomes were mood, fatigue, QOL, serum tumor necrosis factor-alpha (TNF-alpha), and C-reactive protein (CRP) as immune mediator biomarkers.

Results: Mean age was 51.6 years, 75.9% were white and 24.1% were people of color, reflecting the cancer center population. 80% had stage II-III disease. Enrollment was completed in 9 months. Compliance was lower than predicted; however, participants participated in on average 1.7 yoga sessions/week for a mean 15.6 weeks duration. There were no adverse events. Control arm participants gained on average 2.63% body weight during treatment while yoga participants lost 0.14% body weight (weight change = -0.36 in yoga arm vs. 2.89 in standard of care arm, Wilcoxon rank sum test $P = .024$). Control participants reported increased fatigue and decreased QOL, while yoga participants reported no change in QOL. No significant change in TNF-alpha or CRP was noted in either arm.

Conclusion: This feasibility study suggests that personalized yoga therapy is beneficial for QOL and weight maintenance among women undergoing chemotherapy for early-stage or locally advanced breast cancer. Weight maintenance associated with yoga therapy may be of clinical significance in this population given the poorer prognosis associated with weight gain in breast cancer survivors.

[Therapeutic mechanisms of integrated traditional Chinese and conventional medicine underlying its treatment of precancerous lesions of gastric cancer](#)

5.

J Tradit Chin Med. 2022 Dec;42(6):1023-1028. doi: 10.19852/j.cnki.jtcm.2022.06.011.

Authors

[X U Qing](#)¹, [Wang Yang](#)¹, [L I Zhongyu](#)¹, [Yan Jiaying](#)¹, [Zhao Yingpan](#)¹, [Wang Ping](#)¹, [Wen Yandong](#)^{1 2}

Abstract

China has a high incidence of gastric cancer. Secondary prevention of gastric cancer is a major public health problem that must be solved urgently. Modern medicine focuses on the pathogenesis of precancerous lesions of gastric cancer (PLGC), and it has been found that there are a variety of abnormal gene expression patterns in PLGC. This study summarizes recent advances in our understanding of the therapeutic mechanisms of PLGC from various clinical studies; this will provide a reference for studying the therapeutic mechanisms of Traditional Chinese Medicine in the treatment of PLGC from the combined points of view of Traditional Chinese and Conventional medicine.

[Toxic medicine used in Traditional Chinese Medicine for cancer treatment: are ion channels involved?](#)

6.

J Tradit Chin Med. 2022 Dec;42(6):1019-1022. doi: 10.19852/j.cnki.jtcm.20220815.005.

Author

[Liu Hengrui](#)¹

Abstract

Cancer has been one of the most serious public health issues in the world. Traditional medicines are widely used in adjunctive therapies in clinical cancer treatment in many countries. One of the unique traditional medicine usages in tumor treatment is the high-dose application of traditional toxin medicine, including venom or body from toxin animals. Evidence has shown that they are very likely to have direct effects on cancer cells. One of the potential pharmacological effects of traditional toxin medicines is their regulation of ion channels in cancers. Many ion channels are found critical in cancers. This study suggested that ion channels were involved in the effect of traditional toxin medicine on cancers. However, so far, the study of the effect of traditional toxin medicine on ion channels in cancers is relatively lacking. This perspective article urged the study in this field because, given the fact that these traditional toxin

traditional medicines have been widely used in cancer treatment, the identification of the effective components and pharmacological targets can improve their clinical application.

[Cytotoxicity of Medicinal Mushrooms *Oudemansiella canarii* and *Ganoderma lucidum* \(Agaricomycetes\) Against Hematologic Malignant Cells via Activation of Apoptosis-Related Markers](#)

7.

Int J Med Mushrooms. 2022;24(11):83-95. doi: 10.1615/IntJMedMushrooms.2022045306.

Authors

[Rich Milton R Dulay](#)¹, [Benigno C Valdez](#)², [Seemanti Chakrabarti](#)³, [Braham Dhillon](#)³, [Esperanza C Cabrera](#)⁴, [Sofronio P Kalaw](#)¹, [Renato G Reyes](#)¹

Abstract

Cancer is the second leading cause of death worldwide, and despite of the of the availability of the advanced chemical treatments, development of effective and safe alternatives derived from natural resources are still of high interest. Mushroom is one of the important resources of pharmacologically active cytotoxic compounds. In this paper, we report the cytotoxicity of ethanolic extracts of *Oudemansiella canarii* (Jungh.) Höhn. and *Ganoderma lucidum* (W. Curt.: Fr.) P. Karst. against nine hematologic malignant cells and describe their molecular mechanisms. Cell lines were exposed to varying concentrations of mushroom extracts for 48 h and the cell proliferation and apoptosis parameters were determined. Western blot analysis was performed to determine the extract-induced changes in the level of apoptosis-related proteins in cancer cell lines and patient-derived mononuclear cells. Results revealed that *O. canarii* and *G. lucidum* extracts exhibited cytotoxicity with IC50 values of 26.8-66.0 ppm and 48.1-78.4 ppm, respectively, in all the cancer cell lines used. Mushroom extracts inhibited cell proliferation by 57.3-72.5% (*O. canarii*) and 44.2-67.4% (*G. lucidum*), which correlates to the activation of apoptosis as indicated by increased annexin V positivity, cells in sub G0/G1 phase and production of reactive oxygen species, and decreased mitochondrial membrane potential. Western blot analysis showed increase in the level of apoptotic markers (cleaved PARP1, cleaved caspase 3 and phosphorylation of histone 2AX) and activation of the stress-activated protein kinase (SAPK/JNK) signaling pathway. The extract-activated apoptosis was also observed in mononuclear cells isolated from the peripheral blood of leukemia and lymphoma patients. In conclusion, activation of pro-apoptotic markers is one of the major mechanisms of the cytotoxicity of *O. canarii* and *G. lucidum* extracts against hematologic malignant cells.

[Comparison of Acupuncture vs Sham Acupuncture or Waiting List Control in the Treatment of Aromatase Inhibitor-Related Joint Pain: A Randomized Clinical Trial](#)

8.

JAMA Netw Open. 2022 Nov 1;5(11):e2241720. doi: 10.1001/jamanetworkopen.2022.41720.

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Authors

[Dawn L Hershman](#)¹, [Joseph M Unger](#)^{2 3}, [Heather Greenlee](#)², [Jillian Capodice](#)⁴, [Danika L Lew](#)^{2 3}, [Amy Darke](#)^{2 3}, [Lori M Minasian](#)⁵, [Michael J Fisch](#)⁶, [N Lynn Henry](#)⁷, [Katherine D Crew](#)¹

Abstract

Importance: Aromatase inhibitors (AIs) have proven efficacy for the treatment of hormone-sensitive breast cancer; however, arthralgias (pain and stiffness) contribute to nonadherence with therapy for more than 50% of patients.

Objective: To examine the effect of acupuncture in reducing AI-related joint pain through 52 weeks.

Design, setting, and participants: A randomized clinical trial was conducted at 11 sites in the US from May 1, 2012, to February 29, 2016, with a scheduled final date of follow-up of September 5, 2017, to compare true acupuncture (TA) with sham acupuncture (SA) or waiting list control (WC). Women with early-stage breast cancer were eligible if they were taking an AI and scored 3 or higher on the Brief Pain Inventory Worst Pain (BPI-WP) item (score range, 0-10; higher scores indicate greater pain). Analysis was conducted for data received through May 3, 2021.

Interventions: Participants were randomized 2:1:1 to the TA (n = 110), SA (n = 59), or WC (n = 57) group. The TA and SA protocols were composed of 6 weeks of intervention at 2 sessions per week (12 sessions overall), followed by 6 additional weeks of intervention with 1 session per week. Participants randomized to WC received no intervention. All participants were offered 10 acupuncture sessions to be used between weeks 24 and 52.

Main outcomes and measures: In this long-term evaluation, the primary end point was the 52-week BPI-WP score, compared by study group using linear regression, adjusted for baseline pain and stratification factors.

Results: Among 226 randomized women (mean [SD] age, 60.7 [8.6] years; 87.7% White; mean [SD] baseline BPI-WP score, 6.7 [1.5]), 191 (84.5%) completed the trial. In a linear regression, 52-week mean BPI-WP scores were 1.08 (95% CI, 0.24-1.91) points lower in the TA compared with the SA group (P = .01) and were 0.99 (95% CI, 0.12-1.86) points lower in the TA compared with the WC group (P = .03). In addition, 52-week BPI pain interference scores were statistically significantly lower in the TA compared with the SA group (difference, 0.58; 95% CI, 0.00-1.16; P = .05). Between 24 and 52 weeks, 12 (13.2%) of TA, 6 (11.3%) of SA, and 5 (10.6%) of WC patients reported receipt of acupuncture.

Conclusions and relevance: In this randomized clinical trial, women with AI-related joint pain receiving 12 weeks of TA had reduced pain at 52 weeks compared with controls, suggesting long-term benefits of this therapy.

[Natural Products for Esophageal Cancer Therapy: From Traditional Medicine to Modern Drug Discovery](#)

9.

Int J Mol Sci. 2022 Nov 4;23(21):13558. doi: 10.3390/ijms232113558.

Authors

[Jeongeun An](#)¹, [Soojin An](#)¹, [Min Choi](#)¹, [Ji Hoon Jung](#)¹, [Bonglee Kim](#)¹

Abstract

Esophageal cancer (EC) is one of the most malignant types of cancer worldwide and has a high incidence and mortality rate in Asian countries. When it comes to treating EC, although primary methods such as chemotherapy and surgery exist, the prognosis remains poor. The purpose of this current research is to review the range of effects that natural products have on cancer by analyzing studies conducted on EC. Fifty-seven studies were categorized into four anti-cancer mechanisms, as well as clinical trials. The studies that were scrutinized in this research were all reported within five years. The majority of the substances reviewed induced apoptosis in EC, acting on a variety of mechanisms. Taken together, this study supports the fact that natural products have the potential to act as a candidate for treating EC.

[Effects of a yoga-based stress reduction intervention on stress, psychological outcomes and cardiometabolic biomarkers in cancer caregivers: A randomized controlled trial](#)

10.

PLoS One. 2022 Nov 10;17(11):e0277009. doi: 10.1371/journal.pone.0277009. eCollection 2022.

Authors

[Lena J Lee](#)¹, [Robert Shamburek](#)², [Hyojin Son](#)¹, [Gwenyth R Wallen](#)¹, [Robert Cox](#)¹, [Sharon Flynn](#)¹, [Li Yang](#)¹, [Margaret Bevans](#)², [Leslie Wehrle](#)³, [Alyson Ross](#)¹

Abstract

Caregiving stress is a risk factor for cardiometabolic disease. Therefore, integrating cardiometabolic biomarkers into caregiving research provides a more comprehensive assessment of an individual's health and response to an intervention. The objective of this study was to examine the effects of a yoga-based stress reduction intervention on stress, psychological outcomes, and cardiometabolic biomarkers in cancer caregivers. This prospective randomized controlled trial enrolled family caregivers of adult patients who underwent an allogeneic HSCT at the National Institutes of Health (NIH) Clinical Center. All subjects received usual care education. Participants in the intervention group received an Iyengar yoga intervention self-administered over six weeks using an audio recording file. The primary outcome was perceived stress (measured using the NIH toolbox Perceived Stress). The secondary outcomes were psychological factors (depression and anxiety measured using PROMIS® Depression and Anxiety), and cardiometabolic biomarkers measured by nuclear magnetic resonance spectroscopy. A total of 50 family caregivers (mean [SD] age, 44.9 [15.2] years; 42 [84.0%] women) were randomized, 25 to the intervention group and 25 to the control group. No group differences were noted in stress, depression, and anxiety. Significant

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interaction effects between group and time were found in large TRL-P ($F(1,43) = 10.16, p = 0.003$) and LP-IR ($F(1,42) = 4.28, p = 0.045$). Post-hoc analyses revealed that the levels of large TRL-P (mean difference = 1.68, CI = [0.86, 2.51], $p < .001$) and LP-IR (mean difference = 5.67, CI = [1.15, 10.18], $p = 0.015$) significantly increased over time in the control group but while remained stable in the intervention group (mean difference = -0.15, CI = [-0.96, 0.66], $p = 0.718$; mean difference = -0.81, CI = [-5.22, 3.61], $p = 0.714$, respectively). Even when perceptions of psychological distress remain unchanged, incorporating gentle yoga poses and breathing exercises may reduce the risk of cardiometabolic disease in caregivers by inhibiting the development of insulin resistance. Standard lipids of cardiometabolic risk do not appear to be robust enough to detect short-term early changes of cardiometabolic risk in caregivers. Trial registration: ClinicalTrials.gov Identifier: [NCT02257853](https://clinicaltrials.gov/ct2/show/study/NCT02257853).

11. [Underlying mechanisms of acupuncture therapy on polycystic ovary syndrome: Evidences from animal and clinical studies](#)

Front Endocrinol (Lausanne). 2022 Oct 24;13:1035929. doi: 10.3389/fendo.2022.1035929. eCollection 2022.

Authors

[Yang Ye](#)¹, [Cong-Cong Zhou](#)², [Hang-Qi Hu](#)¹, [li Fukuzawa](#)¹, [Hao-Lin Zhang](#)¹

Abstract

Polycystic ovary syndrome (PCOS) is a common endocrine and metabolic disorder among women of reproductive age. Current standard treatment includes lifestyle change, oral pharmacological agents, and surgical modalities. However, the efficacy of current therapies is less than satisfactory. Clinical evidence has shown that acupuncture is effective for regulating hormone levels, promoting ovulation, and attenuating insulin resistance in patients with PCOS. Acupuncture may affect the production of β -endorphin, which may lead to gonadotropin-releasing hormone secretion and then affect ovulation, menstrual cycle, and fertility. The mechanism of acupuncture for patients with PCOS has not been comprehensively reviewed so far. Better understanding of the mechanisms of acupuncture would help popularize the use of acupuncture therapy for patients with PCOS. In this narrative review, we aimed to overview the potential mechanisms and evidence-based data of acupuncture on PCOS, and analyze the most frequently used acupoints based on animal and clinical studies. The results of this study will contribute to a better understanding of the current situation in this field.

12. [In Silico and In Vitro Studies on the Mechanisms of Chinese Medicine Formula \(Yiqi Jianpi Jiedu Formula\) in the Treatment of Hepatocellular Carcinoma](#)

Comput Math Methods Med. 2022 Oct 29;2022:8669993. doi: 10.1155/2022/8669993. eCollection 2022.

Authors

[Zhulin Wu](#)^{1 2}, [Jianyuan Kang](#)^{1 2}, [Wanjuan Tan](#)³, [Chunshan Wei](#)^{1 2}, [Li He](#)^{1 2}, [Xiaoyan Jiang](#)^{1 2}, [Lisheng Peng](#)^{1 2}

Abstract

Objective: Traditional Chinese medicine (TCM) is an important part of the comprehensive treatment of hepatocellular carcinoma (HCC), and Chinese materia medica formulas with the effect of "Yiqi Jianpi" (replenishing qi and strengthening spleen) or "Jiedu" (removing toxicity) have been proved to be effective in treating HCC. However, mechanisms of these formulas in treating HCC remain unclear. In this paper, our goal is to explore the antitumor activity and its molecular mechanisms of Yiqi Jianpi Jiedu (YQJPJD) formula against HCC.

Methods: The bioactive ingredients and targets of YQJPJD formula and HCC targets were screened by five Chinese materia medicas and two disease databases, respectively. The network pharmacology was utilized to construct the relationship network between YQJPJD formula and HCC, and the mechanisms were predicted by the protein-protein interaction (PPI) network, pathway enrichment analysis, bioinformatics, and molecular docking. Numerous in vitro assays were performed to verify the effect of YQJPJD formula on HCC cells, cancer-associated targets, and PI3K/Akt pathway.

Results: The network relationship between YQJPJD formula and HCC suggested that YQJPJD formula mainly regulated the potential therapeutic targets of HCC by several key bioactive ingredients (e.g., quercetin, luteolin, baicalein, and wogonin). PPI network, bioinformatics, and molecular docking analyses displayed that YQJPJD formula may play an anti-HCC effect through key targets such as MAPK3, RAC1, and RHOA. Additionally, pathway analysis demonstrated that YQJPJD formula could play an anti-HCC effect via multiple pathways (e.g., PI3K-Akt and hepatitis B). Experimental results showed that YQJPJD formula could effectively inhibit the proliferation, migration, and invasion of HCC cells and promote HCC cell apoptosis in a concentration-dependent manner. Moreover, YQJPJD formula could decrease the mRNA expression of β -catenin, MAPK3, and RHOA and the protein expression of phosphorylated PI3K and Akt.

Conclusion: YQJPJD formula mainly exerts its anti-HCC effect through multiple bioactive ingredients represented by quercetin, as well as multiple pathways and targets represented by PI3K/Akt pathway, β -catenin, MAPK3, and RHOA.

13. [Mechanism of Sijunzi Decoction in the treatment of colorectal cancer based on network pharmacology and experimental validation](#)

J Ethnopharmacol. 2023 Feb 10;302(Pt A):115876. doi: 10.1016/j.jep.2022.115876. Epub 2022 Nov 5.

Authors

[Luorui Shang](#)¹, [Yichong Wang](#)², [Jinxiao Li](#)¹, [Fangyuan Zhou](#)¹, [Kunmin Xiao](#)³, [Yuhan Liu](#)⁴, [Mengqi Zhang](#)¹, [Shuhan Wang](#)¹, [Shenglan Yang](#)⁵

Abstract

Ethnopharmacological relevance: Sijunzi Decoction (SJZD) , as a famous classical prescription for the treatment of colorectal cancer(CRC) in the traditional Chinese medicine (TCM), has achieved good curative effects in clinical practice. However, its specific ingredients and molecular mechanisms is still unclear.

Aim of the study: To analyze the effective ingredients and molecular mechanisms of SJZD in the treatment of CRC through network pharmacology technology and experimental validation.

Materials and methods: First, the TCM Systems Pharmacology database and analysis platform database were searched to screen the effective chemical components of SJZD. Swiss Target Prediction was used to predict corresponding potential target genes of compounds. After that, we constructed a components and corresponding target network by Cytoscape. Simultaneously, 5 disease databases were used to search and filter CRC targets, and then we constructed a drug-disease target protein-protein interaction (PPI) network. Cytoscape 3.7 was used for visualization and cluster analysis, and Metascape database was used for GO and KEGG enrichment analysis. We drew the main pathway-target network diagram. Autodock vina1.5.6 was applied to molecular docking for the main compounds and target proteins. Subsequently, the potential mechanism of SJZD on colon cancer predicted by network pharmacological analysis was experimentally studied and verified in vivo and in vitro.

Results: 144 effective active chemical components, 897 potential targets, and 2584 CRC target genes were screened out. The number of common targets between the SJZD and CRC was 414.3250 GO biological process items and 186 KEGG signal pathways were obtained after analysis. The main compounds and the target protein had a good binding ability in molecular docking. The results of cell and animal experiments showed that SJZD could promote apoptosis and autophagy of CRC cells through PI3K/Akt/mTOR pathway.

Conclusions: SJZD can treat CRC through multiple components, multiple targets and multiple pathways. We initially revealed the effective components and molecular mechanisms of SJZD in the treatment of CRC, and we used molecular docking and experiment for preliminary verification.

14. [Effects of progressive muscle relaxation on health-related outcomes in cancer patients: A systematic review and meta-analysis of randomized controlled trials](#)

Complement Ther Clin Pract. 2022 Nov;49:101676. doi: 10.1016/j.ctcp.2022.101676. Epub 2022 Oct 31.

Authors

[Lanhui Tan](#)¹, [Pei Fang](#)², [Jiaxin Cui](#)³, [Huidan Yu](#)⁴, [Liping Yu](#)⁵

Abstract

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Background and purpose: Progressive muscle relaxation training (PMRT) has been widely applied to improve the physical and mental health of patients. The aim of this study was to evaluate the effects of PMRT on the symptoms and quality of life (QOL) of cancer patients.

Methods: Nine databases (Web of Science, CENTRAL, PubMed, Embase, CINAHL, OpenGrey, CNKI, Wanfang, and VIP database) were searched to identify randomized controlled trials (RCTs) that assessed the effects of PMRT on health-related outcomes for cancer patients. The risk of bias of the included studies and the evidence quality were appraised using the Cochrane Risk of Bias 2.0 tool and the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach, respectively. Meta-analysis was performed using RevMan 5.4.

Results: Twelve RCTs sampling 1147 patients were included. PMRT showed significant effects of alleviating anxiety [standardized mean difference (SMD) = -1.32, 95% CI (-1.88, -0.75), $P < 0.001$] and pain [SMD = -1.02, 95% CI (-1.93, -0.11), $P = 0.030$], and improving QOL [SMD = 1.65, 95% CI (0.53, 2.76), $P = 0.004$] in cancer patients. Regarding depression, self-esteem, nausea, and vomiting, PMRT showed better effects compared to the control group. However, no significant effect of reducing fatigue was detected [SMD = -1.00, 95% CI (-2.27, 0.27), $P = 0.120$]. The overall quality of evidence was moderate to very low.

Conclusion: PMRT is a promising complementary therapy that may improve the health-related outcomes of cancer patients. Future studies with rigorous research design are needed to obtain valid conclusions.

15. [Digitally distributed Yoga Intervention in Breast Cancer Rehabilitation \(DigiYoga CaRe\): protocol for a randomised controlled trial](#)

BMJ Open. 2022 Nov 1;12(11):e065939. doi: 10.1136/bmjopen-2022-065939.

Authors

[Emma Ohlsson Nevo](#)¹, [MiaLinn Arvidsson-Lindvall](#)², [Susanne Hellerstedt Börjeson](#)³, [Lars Hagberg](#)², [Elisabeth Hultgren Hörngqvist](#)⁴, [Antonios Valachis](#)⁵, [Åsa Wickberg](#)⁶, [Anna Duberg](#)²

Abstract

Introduction: Breast cancer is the most prevalent cancer among women. The treatment is extensive; in addition to surgery, various combinations of radiation therapy, chemotherapy and antibody and endocrine treatment can be applied. Cancer-related fatigue (CRF) is high in patients with breast cancer, peaking during chemotherapy, but may persist for several years. Physical activity has proven to be effective in reducing CRF in breast cancer rehabilitation, but many patients tend to be less active after the diagnosis. Yoga has a previously demonstrated effect on energy levels and digitally distributed yoga intervention can potentially increase accessibility in pandemic times and facilitate participation for patients susceptible to infection and those living far from organised rehabilitation opportunities. The purpose of this study, Digital Yoga Intervention in Cancer Rehabilitation (DigiYoga CaRe) is to investigate whether a 12-week digitally distributed yoga intervention can reduce CRF and stress, improve health-related quality of life (HRQL) and affect pro-inflammatory and metabolic markers in patients with breast cancer.

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Methods and analysis: This multicentre study will adopt a randomised controlled design including 240 persons after their breast cancer surgery. They will be randomised to a 12-week digitally distributed yoga intervention or to a control group. The intervention group practice yoga two times a week, one yoga class live-streamed to the patient's computer or mobile device and one prerecorded video class for self-training. The controls receive standardised care, gift cards for flowers and access to yoga video links after the data collection has ended. The primary analysis will be performed following the principle of intention to treat. Data will be collected by questionnaires, blood samples, accelerometers and interviews.

Ethics and dissemination: The DigiYoga CaRe study was approved by the Regional Ethical Review Board in Lund. The final results of this study will be disseminated to conference, patient and public involvements and peer-reviewed publications.

[Effect of manual lymphatic drainage on upper limb lymphedema after surgery for breast cancer](#)

16.

Ceska Gynekol. 2022;87(5):317-323. doi: 10.48095/cccg2022317.

Authors

[Kristína Chmelová](#), [Marta Nováčková](#)

Abstract

Objective: Evaluation of the effect of manual lymphatic drainage on lymphedema of the upper limb after previous axillary lymphadenectomy/sentinel node bio-psy during the maintenance phase of lymphedema after the breast cancer surgery.

Material and methods: A total of 30 patients after surgical treatment of unilateral breast cancer underwent 10 manual lymphatic drainages within 8 consecutive weeks. All patients underwent upper limb circumference measurements before and after the study and completed two specialized EORTC questionnaires (QLQ-C30 and QLQ-BR23).

Results: The average time between surgery and admission into this study was 32.5 months. In the beginning of the study, lymphedema was present for an average of 19.8 months. At the end of a series of manual lymphatic drainages, the average volume decrease of the limb with lymphedema was 3% (1.5-5.6%). In contrary, the average loss of volume on the healthy (control) upper limb was only 0.4%. The average reduction of lymphedema volume after therapy achieved 57% (37-88%). After a series of manual lymphatic drainages, the results of the EORTC QLQ-C30 questionnaire showed a statistically significant improvement in physical and role functions, fatigue, nausea and vomiting, pain, dyspnea and constipation, while the results of the EORTC QLQ-BR23 questionnaire showed a statistically significant improvement in the arm and breast symptoms. There was no statistically significant deterioration in any of the monitored parameters.

Conclusion: The results of the study showed a positive effect of manual lymphatic drainage on the maintenance phase of lymphedema in patients after breast cancer surgery. The questionnaires showed a significant improvement in hand and arm symptoms as well as an improvement of the other functions and

symptoms affecting quality of life. Further studies should be performed on groups of patients with the maintenance phase of upper limb lymphedema to confirm or disprove our results.

[Effects of Acupuncture on Cancer Pain in Animal Intervention Studies: A Systematic Review and Quality](#)

17. [Assessment](#)

Integr Cancer Ther. 2022 Jan-Dec;21:15347354221123788. doi: 10.1177/15347354221123788.

Authors

[Liangbo Jiao](#)¹, [Xiaoxia He](#)², [Jihong Zhang](#)¹, [Yali Liu](#)², [Yanan Luo](#)², [Hu Wei](#)²

Abstract

Background: Preclinical studies often provide the evidence base for clinical studies. However, the design and reporting of preclinical trial results are inadequate, resulting in poor reproducibility and clinical translatability. We aimed to systematically evaluate the methodology and reporting quality of animal studies of acupuncture for cancer pain.

Methods: About 7 databases were searched for animal research articles on acupuncture for cancer pain from the beginning of the database to January 31, 2022. ARRIVE guidelines, STRICTA, and SYRCLE risk of bias tools were used to assess the reporting quality and risk of bias of the selected studies.

Results: A total of 18 studies were evaluated. Of the 22 items on the SYRCLE tool, only 6 items had a positive reporting rate of more than 50%. Of the 39 items in the ARRIVE guidelines, 14 were rated excellent, and the least frequently reported checklist items were 7. Out of the 17 STRICTA checklist items analyzed, 10 were considered appropriately reported in more than 80% of the studies, while 4 were correctly reported in less than 20%.

Conclusions: Some crucial points in the design, implementation, and reporting of the experiments included in the study were not well developed, which could significantly affect the clarity, reproducibility, and translatability of the experiments. There is a need to fully implement scientific tool guidelines for future experimental studies in order to improve the quality of preclinical studies and facilitate effective translation of their results to the clinic.

[The Use of Traditional Chinese Medicine in Patients with Oral, Oropharynx, Nasopharynx, and](#)

18. [Hypopharynx Cancers: A Retrospective Longitudinal Cohort Study in Taiwan](#)

Integr Cancer Ther. 2022 Jan-Dec;21:15347354221132790. doi: 10.1177/15347354221132790.

Authors

[Eyal Ben-Arie](#)¹, [Chanya Inprasit](#)², [Bernice Lottering](#)¹, [Hei-Tung Yip](#)^{1 3}, [Wen-Chao Ho](#)¹, [Yu-Chen Lee](#)^{1 3}, [Pei-Yu Kao](#)³

Abstract

Introduction: Given the prevalent use of tobacco and betel nut in the Taiwanese community, an increase risk of oral, oropharynx, and hypopharynx cancers (head and neck cancers) is apparent. The use of Traditional Chinese Medicine (TCM) and acupuncture is both common and conveniently accessible in Taiwan, with treatments being financially supported by the National Health Insurance (NHI). This study aims to investigate the use of TCM in head and neck cancers in Taiwan through a longitudinal cohort study.

Methods: The Taiwan National Health Insurance Research Database (NHIRD) was utilized in order to conduct this study. The study populations consisted of oral, oropharynx, nasopharynx, and hypopharynx cancers (head and neck cancer) patients in 2002, which were then followed up until 2007 in regards to TCM use, until 2013 in regards to acupuncture use and until 2014 for all-cause mortality. Patients were divided into 4 groups. Common symptoms, Chinese herbs and formula used, TCM visits and 5 and 12 years all-cause mortality were analyzed.

Results: The use of TCM was increased in the second to fourth-year post-diagnosis. TCM use in nasopharynx cancer patients was higher compared to other cancers. The number of TCM visits per patient was increased post-diagnosis. The findings suggest a non-significant reduction in 5 and 12 years all-cause mortality between TCM II and CON II groups.

Conclusion: The use of TCM in new patients suffering from head and neck cancers was increased in close proximity to the cancer diagnosis. The relation between TCM use and mortality of head and neck cancer should be investigated through larger scale studies.

[Significant Tumor Reduction With Traditional Chinese Medicine in a Patient With Advanced Prostate Cancer: A Case Report](#)

19.

Am J Mens Health. 2022 Sep-Oct;16(5):15579883221130854. doi: 10.1177/15579883221130854.

Author

[Xiaojun Zhang](#)¹

Abstract

Prostate cancer (PC) is the most common malignancy of the male genitourinary system. For patients with advanced progressive PC, the treatment strategies include second-line endocrine therapy, chemotherapy, and immunotherapy. Such therapeutic techniques are either too expensive or too toxic for some patients, and traditional Chinese medicine (TCM) has become an alternative for its low cost and low toxicity. The application of Shi-pi-san and Gui-zhi-Fu-ling-wan in PC has never been reported. We report their application on a 71-year-old male patient, who was diagnosed with PC and was undergoing endocrine therapy. He originally chose chemotherapy, and experienced acute renal failure, which required

hemodialysis during hospitalization. He felt weak and opted for Chinese herbal medicine treatment. After treatment with Shi-pi-san and Gui-zhi-Fu-ling-wan, the patient's tumor and other symptoms were significantly reduced, and he reported feeling "refreshed." This case indicates that TCM treatment has unique advantages and is more tolerable than endocrine therapy and chemotherapy. Considering that the patient was undergoing hemodialysis treatment and using low-molecular-weight heparin (LMWH) to prevent blood coagulation while taking TCM, whether LMWH has a synergistic anticancer effect remains to be explored.

20. [Tumor-associated macrophages in tumor progression and the role of traditional Chinese medicine in regulating TAMs to enhance antitumor effects](#)

Front Immunol. 2022 Oct 13;13:1026898. doi: 10.3389/fimmu.2022.1026898. eCollection 2022.

Authors

[Jiatong Zhang](#)¹, [Jiafeng Gao](#)¹, [Jingwen Cui](#)¹, [Yongqiang Wang](#)², [Yipeng Jin](#)¹, [Di Zhang](#)¹, [Degui Lin](#)¹, [Jiahao Lin](#)^{1 3}

Abstract

Purpose: To emphasize the importance of tumor-associated macrophages (TAMs) in tumor immunity and to describe the ways in which extracts from Traditional Chinese Medicine (TCM) achieve tumor therapy by modulating macrophages.

Significance: By summarizing these available data, this review focused on TAMs and TCM and can build the foundation for future research on antitumor therapeutics.

Methods: In this review, we summarized the key functions of TAMs in cancer development and overviewed literature on TCM targeting TAMs together with other immune cells aiming to enhance antitumor immunity.

Conclusions: With an indispensable role in antitumor immunity, TAMs contribute to tumor progression, migration, invasion, angiogenesis, lymphangiogenesis, and immunosuppressive microenvironment. In recent years, TCM has gradually gained attention as a potential antitumor adjunctive therapy in preclinical and clinical trials. TCM is also a regulator of cytokine secretion and cell surface molecule expression in balancing the tumor microenvironment (TME), especially macrophage activation and polarization. Therefore, it is believed that TCM could serve as modifiers with immunomodulatory capability.

21. [Methodological Review: Summary of Findings for Acupuncture as Treatment for Cancer Therapy-induced Xerostomia](#)

In Vivo. 2022 Nov-Dec;36(6):2579-2597. doi: 10.21873/invivo.12993.

Authors

[Jutta Hubner](#)¹, [Jennifer Dorfler](#)², [Maren Freuding](#)¹, [Christopher Zaiser](#)¹, [Jens Buntzel](#)³, [Christian Keinki](#)^{#1}, [Lukas Käsmann](#)^{#4}

Abstract

Background/aim: With a rapidly growing number of studies, systematic reviews (SRs) and meta-analyses (MAs) on acupuncture, the level of evidence seems to be high. Yet, traditional Chinese acupuncture is built on concepts which are not in accordance with science-based medicine. Accordingly, our aim was to critically assess the evidence presented in SRs and MAs on xerostomia induced by treatment of head and neck cancer with radiotherapy.

Materials and methods: In February 2022, a systematic search of five electronic databases (Embase, Cochrane, PsychInfo, CINAHL and Medline) was conducted to find SRs/MAs on acupuncture use against cancer-treatment induced xerostomia. We evaluated all SRs/MAs using the AMSTAR instrument, comparing the assessment of the individual studies included and the conclusions drawn by the authors. In case of heterogeneity between the SRs, we evaluated the controversial items of the assessments directly from the studies.

Results: Finally, eight SRs/MAs were included. Most of them show methodological drawbacks in several domains of the AMSTAR instrument, which influences the credibility of the results.

Conclusion: The evidence on the use of acupuncture as treatment for radiotherapy-induced xerostomia is low. Present SRs/MAs mainly summarize results of a few and mostly small studies. Even though the included studies greatly overlap, the quality of the presentation and interpretation of the authors differs greatly. Therefore, a high quality and conclusive summary of the present evidence on the use of acupuncture to treat radiotherapy induced xerostomia is still missing.

[A Chinese classical prescription Qianjinweijing Decoction in treatment of lung cancer: An overview](#)

22.

Biomed Pharmacother. 2022 Dec;156:113913. doi: 10.1016/j.biopha.2022.113913. Epub 2022 Oct 26.

Authors

[PeiYu Liu](#)¹, [QingYang Zhao](#)², [Yang Xu](#)¹, [JiaXue Ye](#)¹, [JingRui Tan](#)¹, [Jie Hou](#)¹, [YaZhuo Wang](#)¹, [JianWei Li](#)¹, [WeiZhen Cui](#)¹, [ShiYuan Wang](#)³, [XueZhen Wang](#)⁴

Abstract

Lung cancer is one of the most common malignant tumors in the world, and its incidence and mortality rate rank among the top malignant tumors worldwide, which has become an important killer threatening human survival rate and well-being. Modern medical treatment for lung cancer is mainly based on surgery and radiotherapy, with gene, targeted drugs and immunotherapy as auxiliary treatments, which are

effective, but there are problems such as postoperative recurrence, resistance to radiotherapy, toxic side effects and poor compliance. In recent years, with the continuous development of TCM, TCM is popular among physicians and patients for its high efficiency, low toxicity, low side effects and economic benefits, etc. As a classical TCM formula, Qianjin Weijin Decoction(QJWJ) has certain value in the treatment of lung cancer. This paper summarizes and analyzes the clinical research, molecular mechanism, pharmacological effects and chemical composition of QJWJ in the treatment of lung cancer, in order to provide more ideas and theoretical basis for the treatment of lung cancer with QJWJ.

23. [Systemic pharmacological verification of Salvia miltiorrhiza-Ginseng Chinese herb pair in inhibiting spontaneous breast cancer metastasis](#)

Biomed Pharmacother. 2022 Dec;156:113897. doi: 10.1016/j.biopha.2022.113897. Epub 2022 Oct 26.

Authors

[Hongkuan Han](#)¹, [Cheng Qian](#)¹, [Gangfan Zong](#)¹, [Huan Liu](#)¹, [Feihui Wang](#)¹, [Ruizhi Tao](#)¹, [Peng Cheng](#)¹, [Zhonghong Wei](#)², [Yang Zhao](#)³, [Yin Lu](#)⁴

Abstract

Breast cancer is the most commonly diagnosed cancer in the world, and metastasis is often the main cause of death in breast cancer patients. Salvia miltiorrhiza -Ginseng (SG) herb pair is clinically used for the treatment of cardiovascular diseases and cancers. However, the pharmacological action of this pair on breast cancer is yet unclear. In this study, a spontaneous metastasis model of breast cancer was constructed to assess the therapeutic value of SG. After administration of different doses of SG, the results showed that although it did not significantly inhibit tumor growth, high-dose SG administration could inhibit tumor metastasis. Then, based on systematic pharmacology combined with Gene Expression Omnibus (GEO) database, potential targets of drugs were identified such as vascular endothelial growth factor A (VEGFA), matrix metalloproteinase (MMP9), prostaglandin endoperoxide synthase2 (PTGS2), etc. Gene Ontology (GO) and Kyoto Encyclopedia of Genes and Genome (KEGG) analysis revealed that these targets were related to cytokine-mediated signaling pathway, cell migration and other biological processes and signaling pathways such as PI3K/Akt, etc. The systematic pharmacology analysis showed that SG effectively inhibited the VEGFA and MMP9-mediated biological events such as angiogenesis, epithelial-mesenchymal transition (EMT) and impaired tumor metastasis. Overall, our research aimed to provide new ideas for the treatment of breast cancer lung metastasis in traditional Chinese medicine.

24. [Effect of a Structured Naturopathy and Yoga Intervention on Pain, Depression, and Quality of Sleep in a Postmenopausal Breast Cancer Patient](#)

Adv Mind Body Med. 2022;36(3):21-25.

Authors

[Y Deepa](#), [Seithoon Nisha](#), [A Mooventhan](#), [N Manavalan](#), [S Edmin Christa](#)

Abstract

A 54-year-old postmenopausal woman was diagnosed with adenoid cystic carcinoma (ACCA) of the right breast. She had complaints of pain in the upper quadrant of the right breast, stress, disturbed sleep, and depression. Her self-reported pain intensity using the visual analog scale (VAS) was 8 and her perceived stress scale value was 19. Her depression score on the Patient Health Questionnaire-9 (PHQ-9) was 12. Her quality of sleep, evaluated using the Pittsburgh Sleep Quality Index (PSQI), was 18. She was given integrated naturopathy and yoga therapy for 43 days. She showed a reduction in pain, stress, and depression scores. Her quality of sleep also improved after the integrated naturopathy and yoga therapy. Our structured integrated naturopathy and yoga therapy improved pain, stress, depression, and sleep quality in a postmenopausal breast cancer patient and may be used as adjuvant therapy for patients with breast cancer.

25. [Qi Gong Wan ameliorates adipocyte hypertrophy and inflammation in adipose tissue in a PCOS mouse model through the Nrf2/HO-1/Cyp1b1 pathway: Integrating network pharmacology and experimental validation in vivo](#)

J Ethnopharmacol. 2023 Jan 30;301:115824. doi: 10.1016/j.jep.2022.115824. Epub 2022 Oct 20.

Authors

[Rugun Zheng](#)¹, [Haoran Shen](#)², [Jie Li](#)¹, [Jiansen Zhao](#)³, [Lingjing Lu](#)⁴, [Mianhao Hu](#)⁵, [Zixin Lin](#)⁶, [Hongxia Ma](#)¹, [Huiyan Tan](#)⁷, [Min Hu](#)¹, [Juan Li](#)⁸

Abstract

Ethnopharmacological relevance: Initially recorded in Yifang Jijie (an ancient Chinese text), Qi Gong Wan (QGW) is used to treat obese women with infertility. QGW can help promote follicular development and maturation, regulate the balance of serum hormones between testosterone and estradiol, enhance endometrial receptivity, improve waist circumference, and ameliorate insulin resistance. It contains eight herbs: Pinellia ternata (Thunb.) Makino (Banxia), Citrus maxima (Burm.) (Juhong), Poria cocos (Schw.) Wolf. (Fuling), Atractylodes macrocephala Koidz (Baizhu), Cyperus rotundus L. (Xiangfu), Conioselinum anthriscoides 'Chuanxiong' (Chuanxiong), Massa Medicata Fermentata (Shenqu), and Glycyrrhiza uralensis Fisch. ex DC. (Gancao). However, the underlying mechanism of how QGW affects women with PCOS remains unclear.

Aim of the study: QGW has been widely used to treat PCOS patients with obesity clinically. This study was designed to identify its chemical and pharmacological properties.

Materials and methods: Network pharmacology was used to predict the active compounds, potential targets, and pathways of QGW. Female C57BL/6J mice were injected with letrozole and fed a high-fat diet to establish a PCOS-insulin resistance (PCOS-IR) model. Body weight, estrous cycles, ovarian pathology, and serum insulin resistance were measured. qRT-PCR was used to examine the inflammation-related and steroid hormone biosynthesis-related mRNA expression in adipose tissue. Western blotting was used to

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determine the protein levels of Nrf2, HO-1, and Cyp1b1 in adipose tissue. Molecular docking was used to reveal the key chemical compounds of QGW.

Results: Network pharmacology revealed a total of 91 active ingredients in QGW that were associated with 167 targets. QGW could potentially treat PCOS-IR via nitrogen metabolism, steroid hormone biosynthesis, and ovarian steroidogenesis pathways. In the PCOS-IR mouse model, we found that QGW decreased the mean diameter of adipocytes and the total adipocyte area. Furthermore, QGW was found to significantly lower the expression of inflammation-related genes including Tnfa and C4a/b and the steroid hormone biosynthesis-related gene Cyp1b1. QGW showed a tendency to improve cystic follicles, fasting insulin, and HOMA-IR index in the PCOS-IR mouse model. Combining these findings with the results of KEGG analysis, we conclude that QGW promotes the Nrf2/HO-1/Cyp1b1 pathway to protect adipose tissue under conditions of PCOS. Molecular docking revealed that rutin, nicotiflorin, and baicalein may be the key chemical compounds of QGW through which it improves adipocyte hypertrophy and inflammation.

Conclusions: QGW improved adipocyte hypertrophy and inflammation in the PCOS-IR mouse model by activating the Nrf2/HO-1/Cyp1b1 pathway to protect adipose tissue. Our work thus provides a new research avenue for the study of traditional Chinese medicine in the treatment of PCOS.

26. [Mindfulness-based stress reduction with acupressure for sleep quality in breast cancer patients with insomnia undergoing chemotherapy: A randomized controlled trial](#)

Eur J Oncol Nurs. 2022 Dec;61:102219. doi: 10.1016/j.ejon.2022.102219. Epub 2022 Oct 5.

Authors

[Qixi Liu](#)¹, [Chunfeng Wang](#)², [Ying Wang](#)², [Wenkui Xu](#)², [Chenju Zhan](#)³, [Jingjing Wu](#)³, [Rong Hu](#)⁴

Abstract

Purpose: The objective of this randomized controlled trial was to evaluate and compare the effectiveness of mindfulness-based stress reduction (MBSR), acupressure, and MBSR combined with acupressure in improving sleep quality in breast cancer patients with sleep disorders, as well as the potential effects of these interventions on relieving fatigue, anxiety, and depression.

Methods: A four-arm parallel-group randomized controlled trial was conducted in a tertiary hospital in Fujian between July 2019 and January 2021. A total of 147 breast cancer patients were randomly assigned to a usual care group (n = 34), a MBSR group (n = 38), an acupressure group (n = 36), or a combined group (n = 39). We assessed patients' sleep quality (Pittsburgh Sleep Quality Index-PSQI and 6 actigraphy indices), fatigue, anxiety, and depression at baseline and at the mid-intervention (fourth week) and the end of intervention (eighth week).

Results: The ANOVA showed a significant difference ($p < 0.05$) in PSQI, and all sleep parameters measured by wrist actigraphy, and anxiety between groups. The three active treatments led to better PSQI outcomes ($p < 0.001$), reduced fatigue ($p < 0.001$), decreased anxiety ($p < 0.05$), and improved sleep measured by all actigraphy indices with two exceptions (MBSR did not differ from control on Sleep Latency ($p = 0.235$) and

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mean waking by time (MWBT) ($p = 0.058$). Both acupressure and the combined intervention outperformed MBSR on four actigraphy indices: Sleep Efficiency (SE), Sleep Latency (SL), Total Sleep Time (TST), and Wake after sleep onset (WASO) ($p < 0.05$), and the combined intervention further outperformed MBSR on PSQI ($p = 0.03$) and Number of awakenings (NOA) ($p = 0.003$). Moreover, there was no significant difference across all outcomes between acupressure and combined intervention ($p \geq 0.05$).

Conclusions: MBSR, acupressure, and combined therapy all show a remarkable advantages in alleviating sleep quality, fatigue, and anxiety. Acupressure and combined therapy outperformed MBSR in improving sleep quality.

27. [Anti-polycystic ovary syndrome effect of electroacupuncture: IMD inhibits ER stress-mediated apoptosis and autophagy in granulosa cells](#)

Biochem Biophys Res Commun. 2022 Dec 17;634:159-167. doi: 10.1016/j.bbrc.2022.10.030. Epub 2022 Oct 8.

Authors

[Jing Cong](#)¹, [Yuehui Zhang](#)¹, [Xinming Yang](#)¹, [Yu Wang](#)¹, [Hui He](#)², [Mengying Wang](#)³

Abstract

Polycystic ovary syndrome (PCOS) is a complicated endocrinopathy affecting women at reproductive age. Increasing evidence has shown the anti-PCOS effect of electroacupuncture (EA), a modified approach of traditional Chinese medical therapy "acupuncture". However, the underlying mechanism of EA-alleviated PCOS waits further explored. In this study, experimental PCOS were induced in rats by dehydroepiandrosterone (DHEA) injection. Testosterone (T)-induced human ovarian granulosa cell (GC) line KGN was used to mimic PCOS in vitro. EA significantly alleviated histological changes and hormone disruption in PCOS rats. Besides, EA inhibited cell apoptosis, autophagy and the activation of endoplasmic reticulum (ER) stress-related PERK/eIF2 α /ATF4/CHOP signaling in ovaries of PCOS rats. More interestingly, intermedin (IMD), a member of calcitonin gene-related peptide (CGRP), was evidently up-regulated in ovarian GCs after EA treatment, and its main bioactive form IMD₁₋₅₃ suppressed cell apoptosis, autophagy and PERK/eIF2 α /ATF4/CHOP signaling in T-induced KGN cells. Consistent with IMD₁₋₅₃, ER stress inhibitor 4-PBA exerted an inhibitory effect on T-induced cell apoptosis and autophagy in KGN cells. Collectively, this study validates the protective effect of EA on DHEA-induced PCOS, and proposes that IMD relieved apoptosis and autophagy in T-induced granulosa cells via inhibiting ER stress.

28. [Xiehuo Xiaoying decoction inhibits Tfh cell expansion and promotes Tfr cell amplification to ameliorate Graves' disease](#)

J Ethnopharmacol. 2023 Jan 30;301:115826. doi: 10.1016/j.jep.2022.115826. Epub 2022 Oct 11.

Authors

[Pingping Xiang](#)¹, [Yunnan Zhang](#)¹, [Xiaoyang Qu](#)¹, [Yu Chen](#)¹, [Yijiao Xu](#)¹, [Xingjia Li](#)¹, [Xiao Wei](#)¹, [Xin Hu](#)¹, [Ronglin Zhong](#)¹, [Chao Liu](#)², [Fenxia Zhu](#)³

Abstract

Ethnopharmacological relevance: Xiehuo Xiaoying decoction (XHXY) has shown great potential in the treatment of GD, but its mechanism remains obscure. Increase of follicular helper T (Tfh) cells and reduction of follicular regulatory T (Tfr) cells contribute to a high thyrotropin receptor antibodies (TRAb) level and possible Graves' disease (GD). Oxidative stress (OS) disrupts T helper cell differentiation and aggravates autoimmunity.

Aim of the study: This study aimed to investigate whether XHXY decoction can ameliorate autoimmunity in GD via inhibiting OS and regulating Tfh and Tfr cells.

Materials and methods: The main XHXY bioactive compounds were identified using high-performance liquid chromatography quadrupole time-of-flight mass spectrometry. GD was induced in the mice through three intramuscular injections of adenovirus expressing the TSH receptor. Then, the mice received oral gavage of XHXY (17 g/kg·d) and 34 g/kg·d for 4 weeks. OS indicators were assessed. Flow cytometry was used to confirm the proportion of Tfh and Tfr cells in the lymph nodes and spleens of the mice. Cytokine expression levels were determined using enzyme-linked immunosorbent assay. Factors including interleukin-21, B-cell lymphoma-6, and forkhead box P3 (Foxp3) were detected using quantitative polymerase chain reaction. The mRNA and protein expression levels of Kelch-like ECH-associated protein 1 (Keap1), nuclear factor erythroid-2-related factor 2 (Nrf2), and haem oxygenase 1 (HO-1) were detected using quantitative polymerase chain reaction and Western blotting, respectively.

Results: Twelve main ingredients of XHXY were identified. XHXY relieved GD by lowering thyroxine ($p < 0.01$) and TRAb levels ($p < 0.01$). XHXY ameliorated OS by decreasing the levels of NADPH oxidase 2 ($p < 0.05$), 4-hydroxynonenal ($p < 0.01$), and 8-oxo-2'-deoxyguanosine ($p < 0.001$). It inhibited Tfh cell expansion ($p < 0.05$), as well as the production of cytokine interleukin -21 ($p < 0.01$), interleukin -4 ($p < 0.01$) and transcription factor B-cell lymphoma 6 ($p < 0.05$). XHXY also induced Tfr cell amplification ($p < 0.05$), increased the production of interleukin -10 ($p < 0.05$) and transforming growth factor β ($p < 0.05$) and the mRNA levels of Foxp3 ($p < 0.05$). Finally, the Tfh/Tfr ratio returned to normal. In addition, XHXY activated Nrf2 and HO-1 expression, but inhibited Keap1 activation.

Conclusions: XHXY relieves autoimmunity in GD via inhibiting Tfh cell amplification and Tfr cell reduction, a mechanism which probably involves the Keap1/Nrf2 signaling pathway.

29. [The effect of an evidence-based Tai chi intervention on the fatigue-sleep disturbance-depression symptom cluster in breast cancer patients: A preliminary randomised controlled trial](#)

Eur J Oncol Nurs. 2022 Dec;61:102202. doi: 10.1016/j.ejon.2022.102202. Epub 2022 Sep 28.

Authors

[Li-Qun Yao](#)¹, [Stephen Wai Hang Kwok](#)², [Jing-Yu Benjamin Tan](#)³, [Tao Wang](#)⁴, [Xian-Liang Liu](#)⁵, [Daniel Bressington](#)⁶, [Shun-Li Chen](#)⁷, [Hou-Qiang Huang](#)⁸

Abstract

Purpose: To explore the potential effects of Tai chi on the fatigue-sleep disturbance-depression symptom cluster (FSDSC) among breast cancer (BC) patients.

Methods: This study was conducted as a preliminary randomized controlled trial among 72 BC patients (36 Tai chi and 36 control participants). All the participants were provided with routine care, while participants in the Tai chi group received an additional 8-week Tai chi intervention. Participants' fatigue, sleep disturbance and depression were assessed by the Brief Fatigue Inventory, the Pittsburgh Sleep Quality Index, and the Hospital Anxiety and Depression Scale-Depression. Participants' quality of life (QoL) was assessed by the Functional Assessment of Cancer Therapy-Breast. Both covariates-unadjusted and adjusted GEE models were run to assess the effects of Tai chi intervention on the FSDSC and QoL and the relevant impacts of the covariates.

Results: Sixty-nine participants completed this study. In the unadjusted GEE model, compared with the control group and baseline, participants in the Tai chi group showed significant reductions in fatigue ($p < 0.001$), sleep disturbance ($p < 0.001$) and depression ($p = 0.006$), as well as a significant improvement in QoL ($p = 0.032$) at immediately post-intervention and four-week follow-up. The positive regression coefficients of the adjusted GEE model showed fatigue, sleep disturbance and depression can have impacts on each other (all at $p < 0.05$).

Conclusion: Tai chi as an adjuvant intervention to routine care could relieve the symptom cluster of fatigue, sleep disturbance and depression and improve QoL among BC patients.

[Ginsenosides in cancer: A focus on the regulation of cell metabolism](#)

30.

Biomed Pharmacother. 2022 Dec;156:113756. doi: 10.1016/j.biopha.2022.113756. Epub 2022 Oct 10.

Authors

[Wang Yao](#)¹, [Yunfeng Guan](#)²

Abstract

Metabolic alterations play a key role in promoting tumor initiation and progression, leading to extensive tumor heterogeneity and adaptability. Thus, targeting abnormal metabolic processes is a promising novel approach for cancer treatment. Numerous pharmacological studies have indicated that many traditional Chinese medicines possess remarkable antitumor activities. Ginsenosides, the main bioactive ingredients of Panax and other types of ginseng, exert beneficial antitumor effects, in addition to the anti-

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inflammation, anti-oxidant, and anti-fatigue effects. Recently, considerable attention has been paid to the regulation of cancer cell metabolism by ginsenosides. Here, we summarize the structural characteristics and classification of ginsenosides, their antitumor mechanisms, recent progress and the achievements of ginsenoside research in modulating cancer cell metabolism, including the diverse metabolic processes and their regulatory processes, as well as the opportunities and challenges of strategies targeting metabolic vulnerabilities. This review provides novel perspectives on the potential applications of ginsenosides that exert antitumor effects by reshaping cancer metabolism.

31. [Duration of humoral response to the third dose of BNT162b2 vaccine in patients with solid cancer: Is fourth dose urgently needed?](#)

Eur J Cancer. 2022 Nov;176:164-167. doi: 10.1016/j.ejca.2022.09.006. Epub 2022 Oct 9.

Authors

[Vincenzo Di Noia](#)¹, [Fulvia Pimpinelli](#)², [Davide Renna](#)³, [Flaminia Campo](#)⁴, [Antonella Cosimati](#)⁵, [Andrea Torchia](#)⁵, [Benedetta Marcozzi](#)⁶, [Alice Massacci](#)⁶, [Matteo Pallocca](#)⁶, [Raul Pellini](#)⁴, [Aldo Morrone](#)⁷, [Francesco Cognetti](#)⁸

No abstract available

32. [Anti-cervical cancer effects of Compound Yangshe granule through the PI3K/AKT pathway based on network pharmacology](#)

J Ethnopharmacol. 2023 Jan 30;301:115820. doi: 10.1016/j.jep.2022.115820. Epub 2022 Oct 8.

Authors

[Chao Ma](#)¹, [Yongwei Gu](#)¹, [Chang Liu](#)², [Xiaomeng Tang](#)¹, [Jianchao Yu](#)³, [Dan Li](#)¹, [Jiyong Liu](#)⁴

Abstract

Ethnopharmacological relevance: Compound Yangshe granule is a characteristic Chinese preparation against cervical cancer used at Fudan University Shanghai Cancer Center, and it consists of Hedyotis Diffusae Herba, Solani Lyrati Herba, Rubiae Radix et Rhizoma, Echinopsis Radix, Angelicae Sinensis Radix, Codonopsis Radix and Atractylodis Macrocephalae Rhizoma.

Aim of the study: The objective of the current study was to investigate the preclinical efficacy of compound Yangshe granule against cervical cancer and elucidate the underlying mechanisms.

Materials and methods: Antitumor effect of the preparation was investigated in U14 cells in vitro and subcutaneous xenograft mice in vivo. The underlying mechanisms were investigated by through network pharmacological analysis and identified by in vitro study. The components of compound Yangshe granule were collected from the Traditional Chinese Medicine Systems Pharmacology database, and the

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corresponding targets were predicted by the SwissTargetPrediction database. The targets involved in cervical cancer were collected from the GeneCards, Online Mendelian Inheritance in Man and DrugBank databases. A protein–protein interaction network was constructed by using the String platform. The drug-disease-target network was plotted by Cytoscape software. Kyoto Encyclopedia of Genes and Genomes and Gene Ontology enrichment analyses were performed to investigate hub targets.

Results: After treatment with 0.5-10 mg/mL compound Yangshe granule, the survival rates of U14 cells gradually declined to 53.32% for 24 h, 23.62% for 48 h, and 12.81% for 72 h. The apoptosis rates of U14 cells gradually increased to 15.52% for 24 h, 23.87% for 48 h, and 65.01% for 72 h after treatment with 2-10 mg/mL compound Yangshe granule. After oral administration of compound Yangshe granule by xenograft mice, the tumor inhibition rates reached 52.27%, 74.62%, and 82.70% in the low, middle, and high dose groups, respectively. According to the network pharmacological analysis, quercetin, luteolin and naringenin were the most bioactive ingredients of the preparation. Kyoto Encyclopedia of Genes and Genomes pathway analysis showed that compound Yangshe granule may combat cervical cancer through the PI3K/AKT pathway.

Conclusion: In summary, network pharmacology combined with biological experiments demonstrated that the main bioactive components including quercetin, luteolin and naringenin could inhibit the tumor growth by regulating the PI3K/AKT pathway and Bcl-2 family. Thus, compound Yangshe granule may be a promising adjuvant therapy for cervical cancer.

[Efficacies and side effects of medicinal plants used by patients with cancer in Morocco: A retrospective treatment-outcome study](#)

33.

J Ethnopharmacol. 2023 Jan 30;301:115783. doi: 10.1016/j.jep.2022.115783. Epub 2022 Oct 6.

Authors

[Mohamed Aboufaras](#)¹, [Karima Selmaoui](#)², [Nadia Ouzennou](#)³

Abstract

Ethnopharmacological relevance: Medicinal plants have long been used as traditional medicines in Morocco. Patients with cancer frequently use medicinal plants, with a frequency ranging from 11% to 39%. No studies have evaluated these patients in the Beni Mellal-Khenifra region.

Aim of study: We investigated the beneficial and adverse effects of medicinal plants used by patients with cancer in this region.

Methods: We conducted a retrospective study of the outcomes of traditional treatment with medicinal plants (retrospective treatment-outcome study: RTO) in 194 patients with cancer at the regional oncology centre of Béni Mellal.

Results: Beneficial effects were reported by 39% of patients. All users of the seeds of *Prunus armeniaca* L. reported beneficial effects (100%), followed by *Curcuma longa* L. (50%). We did not observe any significant

difference in efficacies between the most commonly used plants ($P > 0.05$). Patients with cancer who had a low socioeconomic level experienced greater benefits from herbal medicines ($p < 0.05$). The prevalence of adverse effects was 16%. *Juniperus oxycedrus* L. was perceived as the most toxic plant (13 patients), as it induced significantly greater toxicity than the other plants ($P < 0.05$). Patients with a cancer duration of more than 12 months reported more adverse effects ($p = 0.05$).

Conclusions: The frequency of beneficial effects was higher than that of adverse effects. Health professionals should be aware of these effects in the process of therapeutic education. Preclinical and clinical research are considered necessary for the in-depth evaluation of the efficacies and toxicities of certain plants that have shown toxic or therapeutic potential.

[Colon cancer and colorectal cancer: Prevention and treatment by potential natural products](#)

34.

Chem Biol Interact. 2022 Dec 1;368:110170. doi: 10.1016/j.cbi.2022.110170. Epub 2022 Oct 3.

Authors

[Md Rezaul Islam](#)¹, [Shopnil Akash](#)¹, [Md Mominur Rahman](#)¹, [Feana Tasmim Nowrin](#)¹, [Tamanna Akter](#)¹, [Sheikh Shohag](#)², [Abdur Rauf](#)³, [Abdullah S M Aljohani](#)⁴, [Jesus Simal-Gandara](#)⁵

Abstract

Colon cancer affects both men and women and is the world's second most significant cause of cancer-related mortality. Colon cancer death rates have risen worldwide due to the current food habit and lifestyle, which include a lot of meat, alcohol, and not enough physical exercise. As a result, novel, less harmful pharmacological treatments for colon cancer are needed now more than ever before. Colorectal cancer (CRC) affects a significant portion of the world's population. Chemotherapy's limits, as demonstrated by side effects and resistance in CRC patients, are now being sought after despite recent breakthroughs that have improved patient care and survival. Numerous chemical compounds present in medicinal herbs have shown anti-tumor and anti-apoptotic properties against various cancers, including CRC, in animal experiments. These chemicals, which come from several phytochemical families, activate several signaling pathways. This article discusses research on the anti-CRC benefits of many plants conducted in vitro, as well as the phytochemical components of plants that may play a role in the study. Researchers are also looking into the impact of these compounds on various pathways involved in cancer signaling. According to this review, anti-CRC compounds may be generated from medicinal plants. That's why we're looking at how natural items can help treat cancer while lowering the risk of developing it.

[Effectiveness of Virtual Reality Vs Guided Imagery on mood changes in cancer patients receiving chemotherapy treatment: A crossover trial](#)

35.

Eur J Oncol Nurs. 2022 Dec;61:102188. doi: 10.1016/j.ejon.2022.102188. Epub 2022 Aug 13.

Authors

[Androniki Ioannou](#)¹, [Lefkios Paikousis](#)², [Evridiki Papastavrou](#)³, [Marios N Avraamides](#)⁴, [George Astras](#)⁵, [Andreas Charalambous](#)⁶

Abstract

Purpose: To test whether Virtual Reality (VR) can benefit cancer patients from their interaction with an immersive environment, on their mood and their biophysical parameters, compared to those who will experience a Guided Imagery (GI) intervention.

Methods: This was a randomized crossover trial with 50 cancer patients on active chemotherapy treatment, who were randomized to one of two treatment sequences VR-GI or GI-VR. Patients were assessed for Mood Changes, using POMS questionnaire, for three symptoms (Nausea, Pain and Feeling Sick), using three questions from FACT-G questionnaire, and Bio-physical parameters (Blood Pressure, Heart Rate, Oxygen Saturation). Linear Mixed Effect Models were used for the statistical analysis.

Results: Patients experienced a better effect of mood state, for all the sub-scales of mood, after the VR intervention compared to GI, regardless of the sequence ($p < 0.05$). No effectiveness was found for Nausea, Pain and Feeling Sick symptoms. Statistically significant improvements were found on the Bio-physical parameters for the VR intervention ($p < 0.05$).

Conclusion: VR intervention based on mood induction strategies is a feasible and effective procedure for promoting positive mood in cancer patients during chemotherapy. Ways to integrate such innovative technologies in clinical practice need to be explored by health care professionals.

36. [Complementary and alternative therapies in skin cancer a literature review of biologically active compounds](#)

Dermatol Ther. 2022 Nov;35(11):e15842. doi: 10.1111/dth.15842. Epub 2022 Sep 27.

Authors

[Leonel Hidalgo](#)¹, [Cristóbal Saldías-Fuentes](#)², [Karina Carrasco](#)^{1 3}, [Allan C Halpern](#)⁴, [Jun J Mao](#)⁵, [Cristian Navarrete-Dechent](#)^{1 6}

Abstract

Complementary and alternative medicine or therapies (CAM) are frequently used by skin cancers patients. Patient's self-administration of CAM in melanoma can reach up to 40%-50%. CAMs such as botanical agents, phytochemicals, herbal formulas ("black salve") and cannabinoids, among others, have been described in skin cancer patients. The objective of this review article was to acknowledge the different CAM for skin cancers through the current evidence, focusing on biologically active CAM rather than mind-body approaches. We searched MEDLINE database for articles published through July 2022, regardless of

study design. Of all CAMs, phytochemicals have the best in vitro evidence-supporting efficacy against skin cancer including melanoma; however, to date, none have proved efficacy on human patients. Of the phytochemicals, Curcumin is the most widely studied. Several findings support Curcumin efficacy in vitro through various molecular pathways, although most studies are in the preliminary phase. In addition, the use of alternative therapies is not exempt of risks physicians should be aware of their adverse effects, interactions with standard treatments, and possible complications arising from CAM usage. There is emerging evidence for CAM use in skin cancer, but no human clinical trials support the effectiveness of any CAM in the treatment of skin cancer to date. Nevertheless, patients worldwide frequently use CAM, and physicians should educate themselves on currently available CAMs.

[Integrative Medicine for Pain Management in Oncology: Society for Integrative Oncology-ASCO](#)

37. [Guideline](#)

J Clin Oncol. 2022 Dec 1;40(34):3998-4024. doi: 10.1200/JCO.22.01357. Epub 2022 Sep 19.

Authors

[Jun J Mao](#)¹, [Nofisat Ismaila](#)², [Ting Bao](#)¹, [Debra Barton](#)³, [Eran Ben-Arye](#)⁴, [Eric L Garland](#)⁵, [Heather Greenlee](#)⁶, [Thomas Leblanc](#)⁷, [Richard T Lee](#)⁸, [Ana Maria Lopez](#)⁹, [Charles Loprinzi](#)¹⁰, [Gary H Lyman](#)⁶, [Jodi MacLeod](#)¹¹, [Viraj A Master](#)¹², [Kavitha Ramchandran](#)¹³, [Lynne I Wagner](#)¹⁴, [Eleanor M Walker](#)¹⁵, [Deborah Watkins Bruner](#)¹², [Claudia M Witt](#)¹⁶, [Eduardo Bruera](#)¹⁷

Abstract

Purpose: The aim of this joint guideline is to provide evidence-based recommendations to practicing physicians and other health care providers on integrative approaches to managing pain in patients with cancer.

Methods: The Society for Integrative Oncology and ASCO convened an expert panel of integrative oncology, medical oncology, radiation oncology, surgical oncology, palliative oncology, social sciences, mind-body medicine, nursing, and patient advocacy representatives. The literature search included systematic reviews, meta-analyses, and randomized controlled trials published from 1990 through 2021. Outcomes of interest included pain intensity, symptom relief, and adverse events. Expert panel members used this evidence and informal consensus to develop evidence-based guideline recommendations.

Results: The literature search identified 227 relevant studies to inform the evidence base for this guideline.

Recommendations: Among adult patients, acupuncture should be recommended for aromatase inhibitor-related joint pain. Acupuncture or reflexology or acupressure may be recommended for general cancer pain or musculoskeletal pain. Hypnosis may be recommended to patients who experience procedural pain. Massage may be recommended to patients experiencing pain during palliative or hospice care. These recommendations are based on an intermediate level of evidence, benefit outweighing risk, and with moderate strength of recommendation. The quality of evidence for other mind-body interventions or natural products for pain is either low or inconclusive. There is insufficient or inconclusive evidence to

make recommendations for pediatric patients. More research is needed to better characterize the role of integrative medicine interventions in the care of patients with cancer. Additional information is available at <https://integrativeonc.org/practice-guidelines/guidelines> and www.asco.org/survivorship-guidelines.

[MicroRNAs, Key Regulators in Glioma Progression as Potential Therapeutic Targets for Chinese Medicine](#)

38.

Am J Chin Med. 2022;50(7):1799-1825. doi: 10.1142/S0192415X22500768. Epub 2022 Sep 17.

Authors

[Huali Fan](#)¹, [Xiaofang Xie](#)², [Xi Kuang](#)¹, [Junrong Du](#)¹, [Fu Peng](#)¹

Abstract

Gliomas are tumors of the primary central nervous system associated with poor prognosis and high mortality. The 5-year survival rate of patients with gliomas received surgery combined with chemotherapy or radiotherapy does not exceed 5%. Although temozolomide is commonly used in the treatment of gliomas, the development of resistance limits its use. MicroRNAs are non-coding RNAs involved in numerous processes of glioma cells, such as proliferation, migration and apoptosis. MicroRNAs regulate cell cycle, PI3K/AKT signal pathway, and target apoptosis-related genes (e.g., BCL6), angiogenesis-related genes (e.g., VEGF) and other related genes to suppress gliomas. Evidence illustrates that microRNAs can regulate the sensitivity of gliomas to temozolomide, cisplatin, and carmustine, thereby enhancing the efficacy of these agents. Moreover, traditional Chinese medicine (e.g., tanshinone IIA, xanthohumol, and curcumin) exert antiglioma effects by regulating the expression of microRNAs, and then microRNAs inhibit gliomas through influencing the process of tumors by targeting certain genes. In this paper, the mechanisms through which microRNAs regulate the sensitivity of gliomas to therapeutic drugs are described, and traditional Chinese medicine that can suppress gliomas through microRNAs are discussed. This review aims to provide new insights into the traditional Chinese medicine treatment of gliomas.

[Methodological Verification-based Screening of the Representative Ingredients for Traditional Chinese Medicine: Taking *Astragalus* as an Example for Interfering with Cervical Cancer](#)

39.

Curr Comput Aided Drug Des. 2022;18(5):347-362. doi: 10.2174/1573409918666220823120304.

Authors

[Hao Sun](#)¹, [Dan Wang](#)², [Mengjin Xu](#)³, [Yi Gao](#)⁴, [Fan Li](#)⁴

Abstract

Background: The screening of effective ingredients is the bridge between the research of efficacy and the mechanism of traditional Chinese medicine. Although promising virtual screening has emerged as an

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attractive alternative, an ideal strategy is still urgently required due to the characteristics of multi-ingredients and multi-targets of traditional Chinese medicine.

Objective: The aim of the study was to develop a methodological verification-based novel screening strategy capable of comprehensively assessing the ability of compounds to perturb disease networks, thereby identifying representative ingredients of traditional Chinese medicine interventions in complex diseases.

Methods: In this article, we take astragalus interfering with cervical cancer as an example. First, a multifunctional clustering disease network model was constructed; second, the several drugs and their decoys were used for molecular docking with disease network clusters for methodological verification and determining the best scoring criteria. Third, the representative ingredients of astragalus were screened according to the best scoring criteria. Finally, the effects of the representative ingredients on cervical cancer SiHa cells were evaluated by CCK-8 assay, flow cytometry, and western blot analysis.

Results: Three representative ingredients of astragalus were betulinic acid, hederagenin and methylnissolin, which perturbed the apoptosis, stabilization of p53, and G1/S transition cluster as a whole, respectively. CCK-8 assay showed that the IC50 value of betulinic acid, hederagenin and methylnissolin at 48 h was 28.84, 101.90, and 187.40 μ M, respectively. Flow cytometry showed that these three representative ingredients could significantly induce early apoptosis and cell cycle arrest. Western blot analysis showed that betulinic acid treatment significantly increased p53 expression, while hederagenin and methylnissolin did not.

Conclusion: This study has provided new ideas for the screening of effective ingredients in traditional Chinese medicine, and established a foundation for elucidating the overall mechanism of action of traditional Chinese medicine.

40. [Utilisation of complementary medicine in cancer patients and survivors: Expected benefits and its association to psychosocial factors](#)

Eur J Cancer Care (Engl). 2022 Nov;31(6):e13690. doi: 10.1111/ecc.13690. Epub 2022 Aug 17.

Authors

[Joachim Weis](#)¹, [Kathrin Gschwendtner](#)², [Corina G uthlin](#)^{3 4 5}, [Christine Holmberg](#)^{6 7}, [Markus Horneber](#)⁸

Abstract

Introduction: Previous research showed that various factors are associated with the use of complementary medicine (CM) in cancer patients. This study aimed to analyse the expected benefits of CM use in its association with medical, sociodemographic and psychosocial variables.

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Methods: In a cross-sectional survey, we assessed the use of CM, expected benefits of CM, depression and quality of life. An exploratory factor analysis (EFA) was performed. Multiple regression analysis was carried out with the factors derived from the EFA as dependent variables.

Results: Based on 292 cancer CM user, EFA revealed two factors: a supportive effect (SPE) and an antitumoral effect (ATE). In the multiple regression analysis, reduced emotional functioning and the diagnosis of breast cancer are associated with the higher expectation of a supportive effect of CM ($p < 0.001$), explaining 7.1% of the variance. Emotional functioning, educational level and metastases are associated with higher expectation of an antitumoral effect of CM ($p < 0.001$) and explained 14.8% of the variance.

Discussion: This study provides evidence that two overall domains (supportive effect and anti-tumoural effect) characterise the benefits of CM expected by cancer patients. Psychosocial and medical variables are associated with both domains, but explain only small proportion of the variance.

[A Review on the Current Status of Homeopathy in the Clinical Management of Cancer](#)

41.

Curr Drug Targets. 2022;23(13):1252-1260. doi: 10.2174/1389450123666220816151547.

Authors

[Ajay Tangeloju](#)¹, [Rudra Chakravarti](#)¹, [Rajveer Singh](#)¹, [Bireswar Bhattacharya](#)¹, [Arijit Ghosh](#)², [Sujit Kumar Bhutia](#)³, [Velayutham Ravichandiran](#)¹, [Dipanjan Ghosh](#)¹

Abstract

Homeopathy is a widely practiced alternate system of medicine around the world that employs small doses of various medicines to promote auto-regulation and self-healing. It is among the most commonly used alternative approaches in cancer and other diseases and alternative therapeutic systems. It is widely used as palliative and as supportive therapy in cancer patients. Few cases have been reported on patients using homeopathy after surgery, radiotherapy, and chemotherapy, generally for overcoming side effects. The dose of Homoeopathic medicines and their mechanism of action in cancer has also been documented, while clinical trials on the effects of Homoeopathy in cancer treatment are rare. It is found that the anticancer potential of homeopathic medicines is reported for different cancer types, which show their efficacy through apoptosis and immune system modulation. Homeopathic treatment is an add-on to conventional therapy, with almost no interaction with the conventional drugs due to the small dose, and is largely attributed to improving lives by providing symptomatic relief, increasing survival time and boosting patient immunity. This review explores the accountability of the homeopathic system of medicine by highlighting some of the most commonly used homeopathic drugs for different types of cancers.

[Quality of life in terminally ill cancer patients: what is the role of using complementary and alternative medicines?](#)

42.

Support Care Cancer. 2022 Nov;30(11):9421-9432. doi: 10.1007/s00520-022-07301-1. Epub 2022 Aug 1.

Authors

[Mahlagha Dehghan](#)¹, [Fateme Sadat Hoseini](#)², [Fateme Mohammadi Akbarabadi](#)², [Zahra Fooladi](#)², [Mohammad Ali Zakeri](#)^{3 4}

Abstract

Background and purpose: Cancer is the world's second greatest cause of mortality and a leading cause of death in both developed and developing countries. Patients employ a number of complementary and alternative medicine (CAM) methods to deal with the problems and difficulties of cancer, which can have an impact on their quality of life (QOL). The aim of the present study was to assess the correlation between QOL and the use of different CAM methods in terminally ill cancer patients.

Methods: This was a cross-sectional study. In southern Iran, 238 individuals with advanced cancer were studied in oncology centers and doctors' offices. During the months of January to August 2021, patients were selected using convenience sampling. A demographic information questionnaire, the EORTC core quality of life questionnaire, and the CAM questionnaire were used to collect data.

Results: The results showed that terminally ill cancer patients had a good quality of life. Last year, 85.7% of participants used at least one kind of CAM. Furthermore, 45.4% of participants used only one form of CAM, 30.3% used two types of CAM, 6.7% used three types of CAM, and 3.4% used four to five types of CAM. When all CAM users were compared to non-CAM users, CAM users had significantly higher social QOL and overall quality of life. Two subscales of QOL symptoms and function were correlated with cancer history, income, and use of CAMs, and the scores of QOL symptoms and function were greater in CAM users compared to non-CAM users. Among all the study variables, only the usage of CAM was correlated to overall QOL among terminally ill cancer patients.

Conclusion: The current study found that using CAM could affect different aspects of QOL in terminally ill cancer patients. As a result, it is feasible that using CAM could help these people enhance their health and QOL.

43. [Prospective feasibility study of a mindfulness-based program for breast cancer patients in the southeastern US](#)

Complement Ther Clin Pract. 2022 Nov;49:101639. doi: 10.1016/j.ctcp.2022.101639. Epub 2022 Jul 9.

Authors

[Carolina Salvador](#)¹, [Phyllis Mark](#)², [Teri Hoenemeyer](#)², [Victoria McDonald](#)²

Abstract

Background: Mindfulness interventions can improve psychological distress and quality of life (QoL) in cancer survivors. Few mindfulness programs for cancer recovery exist in Southeastern U.S. The primary

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objective of this study was to assess the feasibility of a modified mindfulness-based stress reduction (MBSR) program for breast cancer patients in Birmingham, Alabama. The secondary objective was to explore potential program effects on mindfulness skills and QoL.

Methods: This study was a prospective, quasi-experimental feasibility study conducted over 10 months at a university hospital. Feasibility was achieved if 80% of eligible patients screened enrolled in the study and 70% of enrolled patients attended all 8 program sessions. Effectiveness was estimated by changes in mindfulness and QoL indicators measured with validated scales administered at 3 time points and assessed with a non-parametric Friedman test. Sessions included meditation, yoga, and an attention practice called body scan. There were 3 groups of 2-5 patients.

Results: The sample totaled 12 patients. Forty-four percent (12/27) of eligible patients enrolled in the study, and two out of 12 enrolled patients completed 8 program sessions, resulting in 16.7% (2/12) retention. However, more than half (66.7%) of participants completed at least 7 sessions. Between baseline and 8-week follow-up, patients demonstrated statistically significant improvements in distress, general wellbeing, and fatigue-related QoL.

Conclusions: Feasibility objectives were not achieved. However, a majority of participants (66.7%) completed 7 of 8 program sessions. Program effects were promising for distress, fatigue, and wellbeing. Results warrant further research on MBSR-like programs for breast cancer patients in Alabama.

44. [Computational and In Vitro Approaches to Elucidate the Anti-cancer Effects of Arnica montana in Hormone-Dependent Breast Cancer](#)

Homeopathy. 2022 Nov;111(4):288-300. doi: 10.1055/s-0042-1743565. Epub 2022 Jul 5.

Authors

[Nilanjana Basu](#)¹, [Priyanka Narad](#)², [Manni Luthra Guptasarma](#)³, [Chanderdeep Tandon](#)⁴, [Bhudev Chandra Das](#)¹, [Simran Tandon](#)^{1 4}

Abstract

Background: Breast cancer is the most common cancer in women worldwide. Use of homeopathic medicines for the treatment of cancers has increased in the last several years. *Arnica montana* is an anti-inflammatory homeopathic medicine used in traumatic conditions and because of this property we performed investigations for its potential as a chemotherapeutic agent against breast cancer.

Methods: An ethanolic extract of *Arnica montana* (mother tincture, MT), prepared according to the Homoeopathic Pharmacopoeia of India, was characterized by gas chromatography-mass spectroscopy (GC-MS), followed by computational (*in silico*) analysis using molecular docking, to identify specific compounds that can bind and modulate the activity of key proteins involved in breast cancer survival and progression. To validate the *in silico* findings, in a controlled experiment breast cancer cells (MCF7)

were treated *in vitro* with *Arnica montana* and the cytotoxic effects assessed by flowcytometry, fluorescence microscopy, scratch assay, clonogenic potential and gene expression analysis.

Results: Phytochemical characterization of ethanolic extract of *Arn* MT by GC-MS allowed identification of several compounds. Caryophyllene oxide and 7-hydroxycadalene were selected for molecular docking studies, based on their potential drug-like properties. These compounds displayed selective binding affinity to some of the recognized target proteins of breast cancer, which included estrogen receptor alpha (ER α), progesterone receptor (PR), epidermal growth factor receptor (EGFR), mTOR (mechanistic target of rapamycin) and E-cadherin. *In vitro* studies revealed induction of apoptosis in MCF7 cells following treatment with *Arn* MT. Furthermore, treatment with *Arn* MT revealed its ability to inhibit migration and colony forming abilities of the cancer cells.

Conclusion: Considering the apoptotic and anti-migratory effects of *Arnica montana* in breast cancer cells *in vitro*, there is a need for this medicine to be further validated in an *in vivo* model.

45. ["I Beat Cancer to Feel Sick:" Qualitative Experiences of Sleep Disturbance in Black Breast Cancer Survivors and Recommendations for Culturally Targeted Sleep Interventions](#)

Ann Behav Med. 2022 Nov 5;56(11):1110-1115. doi: 10.1093/abm/kaac035.

Authors

[Carley Geiss](#)¹, [Melody N Chavez](#)¹, [Laura B Oswald](#)², [Dana Ketcher](#)², [Maija Reblin](#)², [Elisa V Bandera](#)^{3 4}, [Josée Savard](#)^{5 6}, [Eric S Zhou](#)⁷, [Rina S Fox](#)⁸, [Heather S L Jim](#)², [Brian D Gonzalez](#)²

Abstract

Background: Sleep disturbance is common and distressing among cancer survivors. Black breast cancer survivors (BBCS) suffer disproportionately from sleep disturbance, yet there is limited research on how to address this issue.

Purpose: This study aimed to understand the multifaceted experiences of sleep disturbance among BBCS and how to culturally target a mobile health (mHealth) intervention to improve sleep outcomes in BBCS.

Methods: Semi-structured interviews were conducted in a purposive sample of 10 BBCS. Interviews were audio-recorded, transcribed, and coded for key barriers to sleep and potential solutions to incorporate into behavioral interventions using NVivo 12. Inductive applied thematic analysis techniques were employed to identify emergent themes.

Results: Ten BBCS (mean age = 54, SD = 10) described their experiences of sleep disturbance with themes including: (1) barriers to quality sleep (e.g., cancer worry, personal responsibilities), (2) psychosocial impacts of sleep disturbance (e.g., fatigue, distress), and (3) commonly used strategies to improve sleep.

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The second section discusses suggestions for developing mHealth interventions to improve sleep for BBCS including: (1) feedback on an existing mHealth intervention and (2) intervention topics suggested by BBCS.

Conclusions: Our findings highlight the challenges associated with sleep disturbance in BBCS. Participants report culturally targeted mHealth interventions are needed for BBCS who experience chronic sleep disturbance that affects their overall quality of life. These interventions should address coping with sleep-related issues relevant to many breast cancer survivors and BBCS (e.g., sexual intimacy, fear of cancer recurrence) and should incorporate intervention strategies acceptable to BBCS (e.g., prayer, meditation).

46. [The effect of music therapy interventions on fatigue in patients with hematological cancers: a systematic review and meta-analysis of randomized controlled trials](#)

Support Care Cancer. 2022 Nov;30(11):8733-8744. doi: 10.1007/s00520-022-07198-w. Epub 2022 Jun 11.

Authors

[Merve Gozde Sezgin](#)¹, [Hicran Bektas](#)²

Abstract

Purpose: To systematically synthesize the effect of music therapy interventions applied to patients with hematological cancer on fatigue.

Methods: The searches were conducted on PubMed, Web of Science, EBSCOhost/CINAHL Complete, Science Direct, Scopus, Cochrane Library, Ovid, ProQuest, and Springer Link databases until August 2021 without any year limitation. The review covered the period between 2003 and 2020. Comprehensive Meta-Analysis 3 software was used in the analysis of meta-analysis data. The meta-analysis was carried out following the PRISMA checklist. Risks of bias were examined by two independent researchers using the Cochrane Collaboration tool.

Results: Six randomized controlled trials consisting of 279 participants were included in the systematic review and meta-analysis. The count of music therapy interventions in the included studies ranged between 1 and 8 sessions per participant, each of which was 20 to 45 min long. The music therapy interventions applied to patients with hematological cancers were found to be effective in reducing the severity of fatigue (95% CI = 0.10 ~ 0.57; Hedge's g = 0.03; p = 0.006).

Conclusions: The findings of the meta-analysis indicated that music therapy interventions made important and positive contributions to reducing fatigue in patients with hematological cancer. Music therapy interventions are a convenient method to reduce fatigue because they are comfortable and non-invasive. It will be beneficial to increase the awareness of nurses about the implementation of music therapy interventions. It is recommended that music therapy interventions applied to patients with a diagnosis of hematological cancer should be considered interventions that can be used together with other non-pharmacological or pharmacological methods to reduce fatigue.

[Non-pharmacological integrative therapies for chronic cancer pain](#)

47.

J Oncol Pharm Pract. 2022 Dec;28(8):1859-1868. doi: 10.1177/10781552221098437. Epub 2022 May 9.

Authors

[Maanya Rajasree Katta](#)¹, [Sai Sudha Valisekka](#)², [Pahel Agarwal](#)³, [Maha Hameed](#)⁴, [Swadha Shivam](#)³, [Jasneet Kaur](#)⁵, [Sakshi Prasad](#)⁶, [Lakshmi Deepak Bethineedi](#)⁷, [Diti Vinuthna Lavu](#)⁸, [Yamini Katamreddy](#)⁹

Abstract

Objective: Chronic pain is one of the most detrimental symptoms exhibited by cancer patients, being an indication for opioid therapy in up to half of the patients' receiving chemotherapy and in 90% of advanced cases. Various successful non-pharmacological integrative therapy options have been explored and implemented to improve the quality of life in these patients. This review aims to highlight the mechanisms implicated; assessment tools used for cancer pain and summarize current evidence on non-pharmacological approaches in the treatment of chronic cancer pain.

Data sources: A review of the literature was conducted using a combination of MeSH keywords including "Chronic cancer pain," "Assessment," "Non-pharmacological management," and "Integrative therapy."

Data summary: Data on the approach and assessment of chronic cancer pain as well as non-pharmacological integrative options have been displayed with the help of figures and tables. Of note, non-pharmacological integrative management was divided into three subcategories; physical therapy (involving exercise, acupuncture, massage, and transcutaneous electric nerve stimulation), psychosocial therapy (e.g. mindful practices, supportive therapy), and herbal supplementation.

Conclusions: The use of non-pharmacological integrative therapy in the management of chronic cancer pain has been grossly underestimated and must be considered before or as an adjuvant of other treatment regimens to ensure appropriate care.

[Phenotypic Changes in Mammary Adenocarcinoma \(4T1\) cells In Vitro after Treatment with Carcinosinum](#)

48.

Homeopathy. 2022 Nov;111(4):278-287. doi: 10.1055/s-0041-1740967. Epub 2022 Apr 27.

Authors

[Thaís Cristina da Silva](#)¹, [William Alves Dos Santos](#)¹, [Sandra A G Pinto](#)¹, [Paulo Ricardo Dell'Armeline Rocha](#)¹, [Elizabeth Cristina Perez Hurtado](#)¹, [Leoni Villano Bonamin](#)¹

Abstract

Objective: The present study aimed to identify possible phenotypic changes in 4T1 (murine mammary adenocarcinoma) cells *in vitro*, including viability, HER-2 (human epidermal growth factor receptor-

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type 2) expression, and metastatic potential, after treatment with *Carcinosinum* in different homeopathic dilutions (12cH, 30cH, 200cH) shaken mechanically in pure, sterile, water from a commercial stock dilution.

Methods: Treated cells were cultured in R10 medium, using 24-well plates, 10⁵ cells per well, and treated with vehicle, *Carcinosinum* 12cH, 30cH or 200cH; untreated cells were used as the baseline control. After 24 hours of treatment, the percentage of apoptotic cells was analyzed by annexin V. Cell morphology was evaluated by microscopy after hematoxylin-eosin and Giemsa staining, whilst HER-2 expression was assessed using immunocytochemistry. The metastatic potential was determined by the expression and activity of the enzyme matrix metalloproteinase 9 (MMP-9) using zymography. The cytokine profile was established using the cytometric bead array method.

Result: Treatment of 4T1 cells *in vitro* with *Carcinosinum* 30cH produced an increase in the number of annexin V-positive cells (apoptosis) and decreased expression of proactivated MMP-9. Cells treated with *Carcinosinum* 200cH presented hyper-expression of HER-2 on the plasma membrane, identified by immunocytochemistry. There were no differences in cytokine production among treatments.

Conclusion: The data show promising results for *Carcinosinum* 30cH *in vitro*, but *in vivo* studies are also required to evaluate the role of tumor microenvironment in its effects.

49. [Effects of meditation compared to music listening on biomarkers in breast cancer survivors with cognitive complaints: secondary outcomes of a pilot randomized control trial](#)

Explore (NY). 2022 Nov-Dec;18(6):657-662. doi: 10.1016/j.explore.2021.10.011. Epub 2021 Nov 10.

Authors

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Abstract

Context: We previously reported positive behavioral effects of both daily mantra meditation and classical music listening interventions in breast cancer survivors with cancer related cognitive complaints.

Objective: The objective of this pilot study was to compare the effects of the meditation intervention to a music listening intervention on biomarkers of inflammation and cellular aging (secondary outcomes) in breast cancer survivors.

Design: Randomized control trial, baseline data collection (time 1), post intervention data collection (time 2) SETTING: Community-based, Central Texas PARTICIPANTS: 25 breast cancer survivors (BCS) who were 3 months to 6 years post chemotherapy completion and reported cognitive changes.

Intervention(s): Kirtan Kriya meditation (KK) or classical music listening (ML), 8 weeks, 12 min a day MAIN OUTCOME: Telomerase activity [TA], c-reactive protein [CRP], soluble IL-2 receptor alpha [sIL-2R α], soluble IL-4 receptor [sIL-4R], soluble IL-6 receptor [sIL-6R], soluble tumor necrosis factor receptor II [sTNF-RII],

VEGF receptor 2 [sVEGF-R2], and VEGF receptor 3 [sVEGF-R3] RESULTS: Repeated measures analysis of variance models were analyzed from time 1 to time 2 by group for each biomarker. A pattern of greater telomerase activity across time in both groups ($F(1,15) = 3.98, p = .06, \omega^2 = 0.04$); significant decreases in sIL-4R across time for both groups ($F(1,22) = 6.28, p = .02, \omega^2 = .003$); group*time effect was nominally different but not statistically different for sIL-4R ($F(1,22) = 3.82, p = .06, \omega^2 = .001$); and a pattern for a group*time effect with ML group showing higher levels of sVEGF-R3 at time 2 ($F(1,20) = 2.59, p = .12, \omega^2 = .009$). No significant effects were found for CRP, sIL-2R α , sIL-6R, sTNF-RII, or sVEGF-R2.

50. [Escitalopram and progressive muscle relaxation training are both effective for the treatment of hot flashes in patients with breast cancer: a randomized controlled trial](#)

J Psychosom Obstet Gynaecol. 2022 Dec;43(4):393-399. doi: 10.1080/0167482X.2021.1985452. Epub 2021 Oct 14.

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Abstract

Introduction: Available treatments for hot flashes in patients with breast cancer are not always tolerable or effective for all patients.

Methods: Patients diagnosed to have primary breast cancer were randomly allocated to receive 10mg of escitalopram, placebo, or progressive muscle relaxation therapy. Patients were asked to report the frequency and duration of hot flashes during day and night, at baseline and after ten weeks of treatment, and completed the menopause rating scale.

Results: Eighty-two patients were randomly assigned to receive escitalopram ($n=26$), PMRT ($n=28$), and placebo ($n=28$). PMRT and escitalopram could effectively decrease number and duration of diurnal and nocturnal HFs in patients with breast cancer, with a better effect observed from escitalopram. They could both decrease the total score of MRS.

Conclusion: Both escitalopram and PMRT can reduce nocturnal and diurnal HFs in terms of frequency and duration in patients with breast cancer.