SIO Monthly Digest July 2022

1. **The Effects of Aromatherapy on Anxiety and Depression in People With Cancer: A Systematic Review and Meta-Analysis**
Front Public Health. 2022 May 30;10:853056. doi: 10.3389/fpubh.2022.853056. eCollection 2022.

Authors

Dan Li [1], Yuxin Li [1], Xue Bai [2], Meijuan Wang [1], Jingzheng Yan [1], Yingjuan Cao [1 3 4]

Abstract

Background: Anxiety and depression are highly prevalent in people with cancer. Medical therapies are usually prescribed to alleviate anxiety and depression, but they are associated with a variety of adverse effects. Recently, aromatherapy showed potential as a complementary medicine to improve psychological health and wellbeing. However, its effectiveness on relieving anxiety and depression has not been established.

Objective: This study explored the beneficial effects of aromatherapy on psychological symptoms such as anxiety and depression in people with cancer.

Methods: We searched international databases including PubMed, Web of Science, Cochrane Library, Embase, Medline, Ebscohost, ProQuest and Scopus from inception to 31 May 2021. The risk of bias was assessed using the Cochrane Collaboration's tool for assessing risk of bias. The systematic review and meta-analysis were performed according to the PRISMA guidelines. Quantitative analysis was performed on the studies that met our inclusion criteria, and Meta-analysis was performed on the studies with available data by RevMan software.

Results: The quality of the literatures were assessed carefully by two researchers, a total of 17 studies were included in the systematic review and 10 articles were conducted in meta-analysis. The aromatherapy was effective in relieving anxiety (SMD = -0.49, $p < 0.05$) in people with cancer. Subgroup analysis suggested that most effective methods were aromatic massage (*SMD* = -0.70, $p < 0.005$), aromatherapy with lavender essential oils (*SMD* = -1.12, $p < 0.01$), short-time interventions (duration < 4weeks) (*SMD* = -0.87, $p < 0.05$) and studies in Asia (*SMD* = -0.83, $p < 0.05$). Regarding depression and psychological wellbeing, there were no difference between aromatherapy and control groups.

Conclusion: In cancer patients, the aromatherapy was effective for relieving anxiety. However, there was no beneficial effect on depression and psychological wellbeing.

2. **Effects of dance therapy in women with breast cancer: A systematic review protocol**
PLoS One. 2022 Jun 24;17(6):e0257948. doi: 10.1371/journal.pone.0257948. eCollection 2022.

Authors

Natália Silva da Costa [1], Amanda Suzane Alves da Silva [1], João Simão de Melo-Neto [1]

Abstract

Background: Cancer is an important public health problem with an increasing global incidence in the recent decades. Breast cancer has become the leading cause of death in women worldwide. Women suffering from breast cancer, as well as survivors, may experience some adverse effects of treatment-including cancer-related fatigue, sleep disorders, and pain-which may manifest alone or

in combination with other symptoms. Non-pharmacological interventions, such as physical activity, have been associated with improvements in these adverse effects. This study aims to evaluate the effects of dance therapy in women with breast cancer.
Methods: We will perform a systematic review according to the Cochrane methodology. An overall search strategy will be developed and adapted for PubMed, Virtual Health Library, PEDro, SciELO, SciVerse Scopus, Cochrane Library, and Web of Science using the descriptors "Dance therapy" or "Dancing" and "Breast neoplasms" or "Breast cancer." The size of the intervention effect (Z) will be calculated for each outcome included in this review. Outcomes will be pain, cancer-related fatigue, sleep disturbance, body image and depression in women with breast cancer. Quality assessment will be performed using the Cochrane instrument. Metanalysis, if plausible, will be performed using Review Manager 5.3.
Discussion: Studies have reported positive results of dance therapy as a non-pharmacological intervention in women with breast cancer. Thus, it is expected that robust and conclusive evidence of the effects of dance therapy during or after treatment (radiotherapy, chemotherapy, hormone therapy, and/or surgery) can be obtained.

3. **The Role and Mechanisms of Action of Natural Compounds in the Prevention and Treatment of Cancer and Cancer Metastasis**
Front Biosci (Landmark Ed). 2022 Jun 15;27(6):192. doi: 10.31083/j.fbl2706192.

Authors

Yunqiao Wang [1], Mingtai Chen [1 2], Hao Yu [1], Gang Yuan [1 3], Li Luo [4], Xiongfei Xu [1 5], Yanneng Xu [1 3], Xinbing Sui [6 7], Elaine Lai-Han Leung [8], Qibiao Wu [1 9 10]

Abstract
Cancer has emerged as one of the world's most concerning health problems. The progression and metastasis mechanisms of cancer are complex, including metabolic disorders, oxidative stress, inflammation, apoptosis, and intestinal microflora disorders. These pose significant challenges to our efforts to prevent and treat cancer and its metastasis. Natural drugs have a long history of use in the prevention and treatment of cancer. Many effective anti-tumor drugs, such as Paclitaxel, Vincristine, and Camptothecin, have been widely prescribed for the prevention and treatment of cancer. In recent years, a trend in the field of antitumor drug development has been to screen the active antitumor ingredients from natural drugs and conduct in-depth studies on the mechanisms of their antitumor activity. In this review, high-frequency keywords included in the literature of several common Chinese and English databases were analyzed. The results showed that five Chinese herbal medicines (Radix Salviae, Panax Ginseng C. A. Mey, Hedysarum Multijugum Maxim, Ganoderma, and Curcumaelongae Rhizoma) and three natural compounds (quercetin, luteolin, and kaempferol) were most commonly used for the prevention and treatment of cancer and cancer metastasis. The main mechanisms of action of these active compounds in tumor-related research were summarized. Finally, we found that four natural compounds (dihydrotanshinone, sclareol, isoimperatorin, and girinimbin) have recently attracted the most attention in the field of anti-cancer research. Our findings provide some inspiration for future research on natural compounds against tumors and new insights into the role and mechanisms of natural compounds in the prevention and treatment of cancer and cancer metastasis.

4. **Exploration of the Effect and Potential Mechanism of Echinacoside Against Endometrial Cancer Based on Network Pharmacology and in vitro Experimental Verification**
Drug Des Devel Ther. 2022 Jun 16;16:1847-1863. doi: 10.2147/DDDT.S361955. eCollection 2022.

Authors

Wan Shu [1], Ziwei Wang [1], Rong Zhao [1], Rui Shi [1], Jun Zhang [1], Wei Zhang [1], Hongbo Wang [1]

Abstract

Background: Endometrial cancer (EC) is one of the most common gynecological malignancies, especially in postmenopausal women. Echinacoside (ECH) is a major natural bioactive ingredient derived from Cistanches Herba and Echinacea that has a variety of pharmacological effects. However, the efficacy and the mechanism of ECH against EC have not been elucidated yet.

Purpose: A compound-target-disease network was constructed to explore the potential targets and mechanism of ECH against EC. Molecular docking and in vitro experiments further verified the effect of ECH against EC.

Methods: The potential targets of ECH against EC were retrieved from multiple public databases. Then, the protein-protein interaction (PPI) network was constructed to screen hub targets. Gene ontology (GO) and Kyoto Encyclopedia of Genes and Genomes (KEGG) enrichment analysis were performed to discover the potential mechanism. Molecular docking was utilized to verify the binding affinity between hub targets and ECH. Finally, in vitro experiments were conducted to demonstrate the anti-EC effect of ECH.

Results: A total of 110 genes were identified as potential targets of ECH against EC. The GO enrichment analysis found that targets were primarily related to oxygen species, apoptosis, and other physiological processes. KEGG pathway analysis showed that PI3K/Akt signaling pathways might play an important role in ECH against EC. Molecular docking indicated that ECH had a significant binding ability with the EGFR, AKT1, ESR1, CASP3, HSP90AA1and MMP9 targets. Results from in vitro experiments revealed that ECH induced apoptosis of Ishikawa and HEC-1-B cells by promoting the arrest of the G2M phase, increasing ROS levels, and decreasing mitochondrial membrane potential (MMP) levels. Furthermore, treatment of ECH significantly reduced the expression levels of PI3K and p-AKT, and the combination of the PI3K inhibitor (LY294002) further enhanced the effects of ECH against EC. The findings suggested that ECH exerted an inhibitory effect on EC cells by inhibiting the PI3K/AKT pathway.

Conclusion: Based on network pharmacology, molecular docking technology and in vitro experiments, we comprehensively clarified the anti-EC efficacy of ECH through multiple targets and signal pathways. Furthermore, we provided a novel idea of Traditional Chinese medicine (TCM) against EC.

5. **Data Analysis for Modeling the Effect of Acupuncture on Postchemotherapy Cancer Fatigue in Gynecologic Oncology Patients**
Comput Intell Neurosci. 2022 Jun 13;2022:7201485. doi: 10.1155/2022/7201485. eCollection 2022.

Authors

Jili Deng [1], Yao Qian [1], Xingyu Chen [2], Juan Jiang [2]

Abstract

Now cancer-related fatigue is gradually being emphasized, which is a common symptom in cancer patients. During long-term radiotherapy, the emotion of patients will be affected directly, and inevitably produce cancer-caused fatigue needle symptoms. Moreover, the weakness and fatigue are always produced simultaneously, which are harmful to patients' prognosis level of their overall survival quality. The acupuncture has a helpful effect on improving the Chinese medical evidence of side effects caused by radiotherapy and chemotherapy in tumor patients. In this paper, we model the effect of acupuncture on cancer fatigue after chemotherapy in gynecologic oncology patients through data analysis, so as to effectively analyze the degree of cancer fatigue after chemotherapy in patients.

6. **Safety of Complementary and Alternative Medicine (CAM) treatment among children and young adults who suffer from adverse effects of conventional cancer treatment: A systematic review**
Integr Cancer Ther. 2022 Jan-Dec;21:15347354221105563. doi: 10.1177/15347354221105563.

Authors

Dana C Mora [1], Agnete E Kristoffersen [1], Grete Overvåg [1], Miek C Jong [1], Marit Mentink [2], Jianping Liu [3], Trine Stub [1]

Abstract

Background: Complementary and Alternative Medicine (CAM) is widely used around the world to treat adverse effects derived from cancer treatment among children and young adults. Parents often seek CAM to restore and maintain the child's physical and emotional condition during and after cancer treatment.

Objectives: The objectives of this review were (i) to identify literature that investigates CAM use for treating adverse effects of conventional cancer treatment, (ii) to investigate the safety of the included CAM modalities, and (iii) to evaluate the quality of included studies.

Methods: Five scientific research databases were used to identify observational, quasi-experimental, and qualitative studies from January 1990 to May 2021. Included studies investigated the use of CAM to treat adverse effects of cancer treatment in childhood cancer.

Results: Fifteen studies were included in this review. Ten quasi-experimental, 3 observational studies (longitudinal/prospective), 2 qualitative studies, and 1 study with a quasi-experimental and qualitative arm were identified. Less than half (n = 6; 40%) of the studies included reported adverse effects for the CAM modality being studied. Among the studies that reported adverse effects, they were mostly considered as direct risk, as 13% reported mainly bleeding and bruising upon acupuncture treatment, and dizziness with yoga treatment. All adverse effects were assessed as minor and transient. CAM modalities identified for treating adverse effects of cancer treatment were alternative medical systems, manipulative and body-based therapies, biologically-based therapies, and mind-body therapies. CAM modalities were used to alleviate anxiety, pain, toxicity, prevent trauma, and improve health-related quality of life, functional

mobility, and physical activity levels. All studies assessed scored 70% or above according to the Joanna Briggs Institute critical appraisal for study quality checklists.
Conclusion: Most of the studies (58.3%) included in this review did not report adverse effects from CAM modalities used to treat adverse effects of cancer treatment in children and young adults. This lack of safety information is of concern because parents need to know whether the modality represents an extra burden or harm to the child. To improve awareness about safety in the field, a universal and uniform reporting system for adverse effects in CAM research is needed.

7. **The ACTION Centre as a Model for Patient Engagement and Knowledge Translation in Integrative Oncology Practice, Training, and Research**
Integr Cancer Ther. 2022 Jan-Dec;21:15347354221103277. doi: 10.1177/15347354221103277.

Authors

Linda E Carlson [1 2], Safiya Karim [1 2], Laura E Labelle [1 2]

Abstract

Integrative Oncology (IO) programs are increasingly emerging at cancer centers and universities worldwide; often these include some combination of clinical service, research, and/or training. However, one gap that often occurs is in moving research results into practice, due to complexities and differences between research and service delivery models and priorities. We recently created the ACTION (Alberta Complementary Therapy and Integrative Oncology) Centre with the goal of partnering with the provincial public health service to promote and facilitate evidence-based integrative oncology care throughout Alberta. The Centre bridges the silos of academia and clinical care by embodying 3 core principles, to be (1) Patient-oriented, (2) Collaborative, and (3) Evidence-based. The ACTION Centre oversees the implementation of clinical research and academic training, and supports the development of clinical services, as well as patient and provider education. The ACTION Centre has five components which include: (1) Patient and healthcare provider education; (2) Individualized IO consultation and treatment planning; (3) Supporting access to complementary therapies; (4) Clinical trials of IO interventions, and; (5) Student training through the TRACTION (Training in Clinical Trials and Integrative Oncology) program. We offer this model of shareholder collaboration in the hopes that other IO programs may be able to use it as a template to further their own progress, working collaboratively toward the ultimate goal of advancing evidence-based, comprehensive, integrative healthcare to improve the lives of people affected by cancer.

8. **Factors Associated with Interest in Complementary and Alternative Medicine Among Young Adult Survivors of Childhood Cancer**
J Pediatr Hematol Oncol Nurs. 2022 Jan-Feb;39(1):30-39. doi: 10.1177/27527530211059421.

Authors

Mary Baron Nelson [1], Yoonji Kim [2], Lauren Hamilton [2], Anneke Dekker [3], Kimberly Miller [4], Ann S Hamilton [5], Joel Milam [2]

Abstract

Background: Use of complementary and alternative medicine (CAM) by those undergoing cancer treatment is common. While some childhood cancer survivors (CCS) may use CAM to treat late effects, others may lack information about available alternative therapies. We sought to determine characteristics associated with seeking more information about CAM among an ethnically diverse sample of young adult CCS. **Methods:** Young adult CCS were selected from the population-based Los Angeles SEER cancer registry and surveyed at ages 18 to 39 as part of the Project Forward Cohort. Associations between demographic, clinical, and other factors with seeking information on CAM were examined with t-tests, Chi Square analyses, and logistic regression. **Results:** Among 1106 participants surveyed, 182 (18%) reported interest in obtaining more information on CAM. Interest in CAM was highest among males, older (vs. younger) participants, those born outside the U.S., those with a history of relapsed/recurrent or second cancers, those with greater depressive symptoms, and those with poorer self-rated health. Among Hispanic/Latino/Latinx respondents, depressive symptoms, birth outside the U.S., and higher Latino culture orientation was positively associated with CAM interest. **Discussion:** Depressive symptoms and unresolved health problems are associated with a need for information about alternative forms of therapy, particularly in those with born outside the U.S. Healthcare providers caring for CCS can incorporate appropriate CAM information to help address unmet physical and mental health needs.

9. **Blood Stasis Syndrome Accelerates the Growth and Metastasis of Breast Cancer by Promoting Hypoxia and Immunosuppressive Microenvironment in Mice**
J Immunol Res. 2022 Jun 7;2022:7222638. doi: 10.1155/2022/7222638. eCollection 2022.

Authors

Lu Jin [1 2], Biqiang Tang [1 3], Xia Liu [1], Weiye Mao [1 4], Linying Xia [1 5], Yueguang Du [5], Bing Ji [2], Qiyang Shou [1 2 4], Huiying Fu [1 2 4]

Abstract

Blood stasis syndromes (BSSs) are closely related to the occurrence and development of tumors, although the mechanism is still unclear. This study was aimed at exploring the effect and mechanism underlying different BSSs on tumor growth and metastasis. We established four BSS mouse models bred with breast cancer: qi deficiency and blood stasis (QDBS), cold coagulation blood stasis (CCBS), heat toxin and blood stasis (HTBS), and qi stagnation and blood stasis (QSBS). The results showed that microcirculation in the lower limb, abdominal wall, and tumor in situ decreased by varying degrees in the BSS groups. In addition, BSS promoted tumor growth and lung metastasis. The ratio of regulatory T cells in the tumor microenvironment was downregulated. Moreover, hypoxia-inducible factor 1-α, Wnt1, β-catenin, vascular endothelial growth factor, and Cyclin D1 levels increased in the tumors of BSS mice. In conclusion, BSS not only promoted the formation of a hypoxic and immunosuppressive microenvironment but also promoted the neovascularization.

10. **Effects of therapeutic exercises in patients with lung cancer. A scoping review**
J Bodyw Mov Ther. 2022 Jul;31:22-29. doi: 10.1016/j.jbmt.2022.03.003. Epub 2022 Mar 17.

Authors

Lucía Romero-Ruiz [1], Iria Da Cuña-Carrera [1], Alejandra Alonso-Calvete [2], Yoana González-González [1]

Abstract

Introduction: Lung cancer is one of the most common malignancies worldwide and the leading cause of cancer-related death. Smoking is one of the main risk factors associated with this cancer. Treatment will depend on the form of cancer and its stage, existing many therapeutic possibilities. In this regard, therapeutic exercise plays an important role in lung cancer care, as well as the pulmonary rehabilitation and respiratory physical therapy.

Purpose: To review the current scientific literature about the effects of therapeutic exercise in lung cancer.

Method: A search was carried out in CINAHL, MEDLINE, PubMed, Scopus y Web of Science using de terms "Exercise Therapy" and "Lung Neoplasms". 141 studies were obtained, but only 19 were selected by adjusting to the inclusion and exclusion criteria. 10 of them were randomized controlled trials with a Jadad score between 2 and 3.

Results: These works performed a large variety of interventions based on therapeutic exercise, classified in preoperative, postoperative, during treatment, post treatment and combination. Most focused on aerobic exercise, muscle strength and respiratory exercises.

Conclusion: therapeutic exercise seems to be positive and obtain significant improvements in patients with lung cancer, regardless the moment of intervention and the type of exercise performed.

11. **Auricular Acupressure for Improving Sleep Quality in Patients With Lung Cancer: A Systematic Review and Meta-analysis**

Holist Nurs Pract. 2022 Jul-Aug;36(4):E27-E37. doi: 10.1097/HNP.0000000000000532.

Authors

Han-Bing Lu [1], Rui-Chen Ma, Ying-Ying Yin, Chun-Yu Song, Ting-Ting Yang, Jiao Xie

Abstract

This meta-analysis was conducted to systematically evaluate the efficacy and safety of auricular acupressure on sleep quality in patients with lung cancer. Nine articles with a total of 802 patients were retrieved after searching on 11 electronic databases. Results of the meta-analysis showed that auricular acupressure improved sleep score (standard mean difference: -0.80, 95% confidence intervals: -1.30 to -0.30, P = .002) and reduced sleep disturbance rate (risk ratio: 0.65, 95% confidence intervals: 0.51-0.84, P = .001) and sleep medicine usage (risk ratio: 0.26, 95% confidence intervals: 0.11-0.65, P = .004) significantly. Our review suggests that auricular acupressure is effective and relatively safe in improving sleep quality among patients with lung cancer.

12. **Effects of electroacupuncture on the expression of hypothalamic neuropeptide Y and ghrelin in pubertal rats with polycystic ovary syndrome**

PLoS One. 2022 Jun 15;17(6):e0259609. doi: 10.1371/journal.pone.0259609. eCollection 2022.

Authors

Yang Li [1], Wang Zhi [2], Dong Haoxu [2], Wang Qing [3], Cheng Ling [4], Yi Ping [2], Huang Dongmei [1]

Abstract

Background: Polycystic ovary syndrome often starts in puberty, and its pathogenesis is not clear. This study aimed to explore the pathogenesis of pubertal polycystic ovary syndrome (PCOS) and assess the therapeutic effect of electroacupuncture on pubertal PCOS.

Methods: Dihydrotestosterone (DHT) was used to induce rat models of pubertal PCOS. pubertal rats with PCOS were randomly divided into a model group (M), an electroacupuncture group (EA), and a sham acupuncture group (SA). Age-matched normal rats were regarded as normal controls (N). Rats were treated with EA or SA five times a week for 25 minutes during their 6th-7th week. At the end of the experiment, we observed any changes in ovarian morphology; detected levels of metabolic indices in serum, the hypothalamus and pancreas.

Results: EA significantly improved estrous cycle disorders and the ovarian polycystic morphology in pubertal rats with PCOS, but SA only improved disorders of the estrous cycle. The serum levels of insulin, neuropeptide Y(NPY) and fasting blood glucose(FBG) increased significantly (both $p < 0.01$), while the serum levels of ghrelin(GHRL) decreased in the model group ($p < 0.01$). After treatment with EA, the levels of NPY ($p < 0.01$) and FBG ($p < 0.05$) went into decrease, whereas the levels of GHRL ($p < 0.05$) and insulin ($p < 0.01$) increased. There was few differences in the hypothalamic expression of galanin (GAL), galanin-like peptide (GALP) and ghrelin receptor(GHSR) between the four groups. The upregulation of NPY mRNA and neuropeptide Y2 receptor(NPY2R) mRNA and the downregulation of GHRL protein and mRNA in the hypothalamus, and the increased expression of NPY and NPY2R as well as the decreased expression of GHRL in the arcuate nucleus (ARC) can be rescued by EA. But, surprisingly, SA seem to make no difference to the levels of FBG and insulin, and the protein expression of ghrelin in the hypothalamus and ARC. Co-expression of kisspeptin and GHSR, and co-expression of gonadotrophin releasing hormone(GnRH) and NPY2R were observed in ARC. No differences were found between groups in protein of GAL, GALP and GHRL expression in the pancreas. Neither EA nor SA can attenuate the upregulated kisspeptin protein expression in the pancreas of PCOS model rats.

Conclusions: EA and SA improved the symptoms of pubertal PCOS rats, and the mechanism might be associated with regulating hypothalamic NPY and ghrelin levels.

13. **Anticancer effects of herbal medicines in pancreatic ductal adenocarcinoma through modulation of steroid hormone response proteins**

Sci Rep. 2022 Jun 14;12(1):9910. doi: 10.1038/s41598-022-14174-1.

Authors

Zhiyi Zhang[#1], Juan Wang[#1], Bingying Liu[#1], Yu Liu[#2], Xiaowei Shi [1], Wenli Li [1], Huawei Xin [1], Jie Xin [3], Chunxiang Hao [4]

Abstract

Many individual herbs and herbal formulae have been demonstrated to provide safe and effective treatment for pancreatic ductal adenocarcinoma (PDAC); however, the therapeutic mechanisms underlying their effects have not been fully elucidated. A total of 114 herbal formulae comprising 216 single herbal medicines used to treat PDAC were identified. Cluster analysis revealed a core prescription including four herbs [Glycyrrhizae Radix et Rhizome (Gan Cao), Codonopsis Radix (Dang Shen), Citri Reticulatae Pericarpium (Chen Pi), and Pinelliae Rhizoma (Ban Xia)] in combination to treat PDAC, and 295, 256, 141, and 365 potential targets were screened for each of these four herbs, respectively. PDAC-related proteins (n = 2940) were identified from the DisGeNET database. Finally, 44 overlapping targets of herbs and PDAC were obtained, representing potential targets of the herbal medicines for PDAC treatment. GO enrichment analysis indicated that targets common to herbs and PDAC primarily functioned in response to steroid hormones. KEGG pathway enrichment analysis indicated that the herbs may prevent PDAC by influencing apoptotic, p53, and PI3K/Akt signaling pathways. Further, molecular docking analysis indicated that of identified bioactive compounds, stigmasterol, phaseol, perlolyrine, shinpterocarpin, and licopyranocoumarin have good binding ability with proteins involved in responses to steroid hormones, while stigmasterol, phaseol, perlolyrine, and DIOP have good binding ability with PTGS2(also known as COX-2), ESR1, ESR2, AR, and PGR. The anti-PDAC activity of herbal medicines may be mediated via regulation of proteins with roles in responses to steroid hormones. This study provides further evidence supporting the potential for use of herbal medicines to treat PDAC.

14. **Effectiveness of Baduanjin Exercise on Quality of Life and Psychological Health in Postoperative Patients With Breast Cancer: A Systematic Review and Meta-analysis**
Integr Cancer Ther. 2022 Jan-Dec;21:15347354221104092. doi: 10.1177/15347354221104092.

Authors

Xin-Xin Ye [1], Zi-Yang Ren [1], Somayeh Vafaei [2], Jun-Meng Zhang [3], Yuan Song [4], Yang-Xin Wang [5], Pei-Ge Song [1]

Abstract

Background: Baduanjin exercise is a traditional Chinese Qigong exercise. This study aimed to investigate the effects of Baduanjin exercise on the quality of life and psychological status of postoperative patients with breast cancer.

Methods: A systematic review and meta-analysis were conducted. Eight databases were searched from inception to December 15, 2021, restricting the language to English and Chinese. RevMan5.3 software was employed for data analysis. This study was registered in PROSPERO, number CRD 42020222132.

Results: A total of 7 randomized controlled trials (RCTs) with 450 postoperative breast cancer patients with or without Baduanjin exercise were collected. Compared with the group without Baduanjin, those who practiced Baduanjin showed significant improvement in quality of life (WMD = 5.70, 95% CI 3.11-8.29, $P < .0001$). Subgroup analysis showed significant improvement in physical (WMD = 1.83, 95% CI 1.13-2.53, $P < .00001$) and functional well-being (WMD = 1.58, 95% CI 0.77-2.39, $P = .0001$), which were measured by the functional assessment of cancer therapy-breast (FACT-B). Subgroup analysis also showed that role-physical (WMD = 11.49, 95% CI

8.86-14.13, *P* < .00001) and vitality (WMD = 8.58, 95% CI 5.60-11.56, *P* < .00001) were significantly increased, as measured by a 36-item Short Form survey (SF-36). In terms of psychological health, Baduanjin exercise reduced patients' anxiety (WMD = -8.02, 95% CI -9.27 to -6.78, *P* < .00001) and depression (WMD = -4.45, 95% CI -5.62 to -3.28, *P* < .00001).
Conclusions: Baduanjin is an effective exercise, which can significantly improve the quality of life and psychological health of breast cancer patients after operation.

15. **Research Progress of Liujunzi Decoction in the Treatment of Tumor-Associated Anorexia**
Drug Des Devel Ther. 2022 Jun 7;16:1731-1741. doi: 10.2147/DDDT.S365292. eCollection 2022.

Authors

Xipei Wu [1], Yongzhao Dai [1], Ke Nie [1]

Abstract

Tumor-associated anorexia, mainly including cancerous anorexia and chemotherapy-induced anorexia, severely reduces the life quality of cancer patients but lacks of effective control until now. Liujunzi decoction (LJZD), a classical tonifying formula in traditional Chinese medicine, has promising effect in preventing and treating many kinds of anorexia. A growing number of evidence showed that LJZD is able to improve tumor-associated anorexia. Up to March 2022, a total of 58 articles studying LJZD or Rikkunshito (the name of LJZD in Japanese herbal medicine) in the treatment of tumor-associated anorexia are searched out in PubMed. This paper summarizes the effect of LJZD in ameliorating tumor-associated anorexia, in order to provide a theoretical basis for the clinical application of LJZD in treating tumor-associated anorexia, laying foundation for further research.

16. **Exploring patient experiences and acceptability of group vs. individual acupuncture for Cancer-related pain: a qualitative study**
BMC Complement Med Ther. 2022 Jun 13;22(1):155. doi: 10.1186/s12906-022-03600-6.

Authors

Devesh Oberoi [1], Erica N Reed [1], Katherine-Ann Piedalue [1], Jessa Landmann [2], Linda E Carlson [3 4]

Abstract

Background: Individual acupuncture (AP) is a safe and effective treatment for cancer-related pain and other symptoms in cancer survivors. However, access to individual AP is limited, and costs can be prohibitive. Group AP could be a more cost-effective alternative as it is less expensive and non-inferior to individual AP for pain relief. Despite growing evidence in favour of group AP, patient acceptability and experience of group AP in cancer patients is relatively unknown. This exploratory study sought to compare patient experiences and acceptability of group versus individual AP in cancer patients.
Methods: Semi-structured, open-ended, in-depth interviews were conducted in a subset of 11 cancer patients enrolled in a randomized non-inferiority trial of group vs. individual AP for cancer pain. Participants for this study were recruited via purposive sampling, aiming for diversity in age,

sex, education, employment, cancer types, and treatment arms. Data was analyzed using inductive thematic analysis.
Results: Two major themes were identified: a) overall experience of AP treatment b) value of AP. Participants across both treatment arms acknowledged improvement in pain, quality of sleep, mood and fatigue. Participants in the group AP arm reported a significant increase in perceived social support, while participants in the individual arm valued privacy and one-on-one interaction with the acupuncturist. Although some participants in the group arm had privacy-related concerns before the commencement of the program, these concerns waned after a few AP sessions. Participants across both the treatment arms reported cordial clinician-patient relationship with the acupuncturist. Willingness to pursue AP treatment in the future was comparable across both the treatment arms and was limited by out-of-pocket costs.
Conclusion: Patient acceptability and experience of treatment in group AP was on par with individual AP. Group AP may further augment perceived social support among patients and privacy concerns, if any, subside after a few sessions.

17. **Modified Shenlingbaizhu Decoction represses the pluripotency of colorectal cancer stem cells by inhibiting TGF-β mediated EMT program**
Phytomedicine. 2022 Aug;103:154234. doi: 10.1016/j.phymed.2022.154234. Epub 2022 Jun 1.

Authors

Yu Dai [1], Hao Wang [1], Ruibo Sun [1], Jianxin Diao [1], Ye Ma [1], Meng Shao [1], Yihua Xu [1], Qingyuan Zhang [1], Zhuowei Gao [2], Zhiyun Zeng [1], Lihua Zhang [3], Xuegang Sun [4]

Abstract

Background: The Modified Shenlingbaizhu Decoction (MSD) utilizes various phytomedicines has been applied to treat colorectal cancer (CRC). Colorectal cancer stem cells (CSCs) have proven to be tightly associated with CRC progression and metastasis. The mechanism of MSD's inhibitory effect on CSCs has not been determined.
Purpose: To figure out how MSD inhibits the pluripotency of CSCs and impedes the EMT program.
Methods: The ingredients of MSD extracts were characterized by high-performance liquid chromatography (HPLC). BALB/c-nu mice were transplanted into EGFP labeled SW480 CRC cells and the tumor weight and volume were recorded before and after various doses of MSD treatment. The concentration of TGF-β1 was quantified with an Enzyme-linked immunosorbent assay. To delineate the logical relationship between EMT and CSCs regulated by MSD, TGF-β/Smad inhibitor and activator were adopted in tumor-bearing mice and diverse CRC cell lines. Cancer stem cell markers were analyzed by flow cytometry. In vitro analysis of cell motility and viability were done using CCK-8, wound healing, and invasion assay. Immunohistochemistry (IHC) and western blotting (WB) were used for detecting protein expression. The collected results were statistically analyzed with GraphPad Prism 8.0.
Results: MSD treatment significantly reduced the size of colorectal cancer tumors and lowered the serum content of TGF-β1 in mice. Importantly, MSD markedly reduced the expression of pluripotent factors and depressed $CD133^{+}$ stem cells in the tumor tissues. The TGF-β/Smad inhibitor neutralized the EMT signaling and lowered the pluripotency by dephosphorylation of

SMAD2/3. Similarly, MSD attenuated the pluripotency by limiting TGF-β/Smad signaling-induced EMT in vivo. MSD inhibited colorectal cancer cell proliferation, migration, and invasion. **Conclusions:** MSD inhibits the growth of colorectal cancer. It dampens the pluripotency of CSCs by repressing the TGF-β-induced EMT program.

18. **Mechanisms of Natural Extracts of *Andrographis paniculata* That Target Lipid-Dependent Cancer Pathways: A View from the Signaling Pathway**
Int J Mol Sci. 2022 May 26;23(11):5972. doi: 10.3390/ijms23115972.

Authors

Ruth Naomi [1], Hasnah Bahari [1], Zhi Yi Ong [2], Yong Yoke Keong [1], Hashim Embong [3], Retnagowri Rajandram [4], Soo Huat Teoh [5], Fezah Othman [6], Rosnani Hasham [7], Khoo Boon Yin [8], Priyatharisni Kaniappan [9], Muhammad Dain Yazid [10], Zainul Amiruddin Zakaria [11]

Abstract
Andrographis paniculata is a local medicinal plant that is widely cultivated in Malaysia. It is comprised of numerous bioactive compounds that can be isolated using water, ethanol or methanol. Among these compounds, andrographolide has been found to be the major compound and it exhibits varieties of pharmacological activities, including anti-cancer properties, particularly in the lipid-dependent cancer pathway. Lipids act as crucial membrane-building elements, fuel for energy-demanding activities, signaling molecules, and regulators of several cellular functions. Studies have shown that alterations in lipid composition assist cancer cells in changing microenvironments. Thus, compounds that target the lipid pathway might serve as potential anti-cancer therapeutic agents. The purpose of this review is to provide an overview of the medicinal chemistry and pharmacology of *A. paniculata* and its active compounds in terms of anti-cancer activity, primary mechanism of action, and cellular targets, particularly in the lipid-dependent cancer pathway.

19. **Therapeutic effect of some natural active compounds for breast cancer**
Med Oncol. 2022 Jun 8;39(8):115. doi: 10.1007/s12032-022-01704-0.

Author

Faik Gökalp [1]

Abstract
The extracts obtained from plants have been used in the treatment of many diseases since the earliest times. Today, it is of great importance to investigate the effects of the active molecules in these plant extracts at the molecular level together with the analysis. The effect of certain active compounds found in some plants, widely used as medicinal plants, on breast cancer has been investigated using docking. As a result of the docking scores obtained, it can be understood that the active molecules used in this study can be quite effective in controlling breast cancer. Promyelocytic leukemia is an important checkpoint from the literature for breast cancer and the docking energy values of Thymoquinone, Piperine and Carvacrol, as the active molecules in the control of this pathway. This study is very important when evaluated in terms of directing

experimental studies by determining the most suitable active substances by comparing the activities of molecules in a short time.

20. **Network pharmacology and experimental verification based research into the effect and mechanism of Aucklandiae Radix-Amomi Fructus against gastric cancer**
Sci Rep. 2022 Jun 7;12(1):9401. doi: 10.1038/s41598-022-13223-z.

Authors

Siyuan Song [1 2 3], Jiayu Zhou [1 2 3], Ye Li [1 2 3], Jiatong Liu [1 2], Jingzhan Li [1 2 3], Peng Shu [4 5 6]

Abstract

To investigate the mechanism of the Aucklandiae Radix-Amomi Fructus (AR-AF) herb pair in treating gastric cancer (GC) by using network pharmacology and experimental verification. Using the traditional Chinese medicine system pharmacology database and analysis platform (TCMSP), the major active components and their corresponding targets were estimated and screened out. Using Cytoscape 3.7.2 software, a visual network was established using the active components of AR-AF and the targets of GC. Based on STRING online database, the protein interaction network of vital targets was built and analyzed. With the Database for Annotation, Visualization, and Integrated Discovery (DAVID) server, the gene ontology (GO) biological processes and the Kyoto Encyclopedia of Genes and Genomes (KEGG) signaling pathways of the target enrichment were performed. AutoDock Vina was used to perform molecular docking and calculate the binding affinity. The mRNA and protein expression levels of the hub targets were analyzed by the Oncomine, GEPIA, HPA databases and TIMER online tool, and the predicted targets were verified by qRT-PCR in vitro. Eremanthin, cynaropicrin, and aceteugenol were identified as vital active compounds, and AKT1, MAPK3, IL6, MAPK1, as well as EGFR were considered as the major targets. These targets exerted therapeutic effects on GC by regulating the cAMP signaling pathway, and PI3K-Akt signaling pathway. Molecular docking revealed that these active compounds and targets showed good binding interactions. The validation in different databases showed that most of the results were consistent with this paper. The experimental results confirmed that eremanthin could inhibit the proliferation of AGS by reducing the mRNA expression of hub targets. As predicted by network pharmacology and validated by the experimental results, AR-AF exerts antitumor effects through multiple components, targets, and pathways, thereby providing novel ideas and clues for the development of preparations and the treatment of GC.

21. **A Qualitative Study Exploring Feasibility and Acceptability of Acupuncture, Yoga, and Mindfulness Meditation for Managing Weight After Breast Cancer**
Integr Cancer Ther. 2022 Jan-Dec;21:15347354221099540. doi: 10.1177/15347354221099540.

Authors

Carolyn Ee [1], Anna C Singleton [2], Michael de Manincor [1], Elisabeth Elder [3], Nikki Davis [4], Christine Mitchell [5], Tinashe Dune [1], Freya MacMillan [1], Kate McBride [1], Suzanne Grant [1]

Abstract

Introduction: Weight gain is common after breast cancer. Yoga, mindfulness meditation, and acupuncture may assist with managing weight. However, evidence on effectiveness is limited. This study assessed the feasibility and acceptability of recruiting for and implementing a randomized controlled trial (RCT) evaluating these interventions as adjuncts to lifestyle interventions (diet and exercise) for weight management in women with breast cancer.
Methods: Qualitative study involving virtual focus groups or semi-structured interviews. Participants were recruited via email invitation from a breast cancer consumer organization and breast cancer center in Australia. Eligible participants had received treatment for breast cancer, and were fluent in English. A purposive sample of culturally and linguistically diverse (CALD) participants was also recruited. Focus groups and interviews were audio-recorded, transcribed verbatim and analyzed using thematic analysis with the constant comparison method.
Results: Emails were sent to 1415 women of which 37 provided data in 5 focus groups and 1 semi-structured interview, including 1 focus group (n = 6) with only women from CALD backgrounds. Yoga and mindfulness meditation were perceived as feasible and acceptable for weight management, but acupuncture was seen to be too invasive to be acceptable. A focus on wellness rather than weight reduction, flexible program delivery, trusted advice, consideration of participant burden and benefit, and peer-support were key factors perceived to increase feasibility and acceptability.
Conclusions: Yoga and mindfulness meditation are acceptable and useful adjuncts to lifestyle interventions for weight management after breast cancer. This research places end-users at the forefront of trial design and will inform future trials using these interventions for weight management and improving health and wellbeing after breast cancer.

22. **Psycho-socio-spiritual care in multiple myeloma: Are we lagging behind?**
Indian J Cancer. 2022 Jan-Mar;59(1):128-131. doi: 10.4103/ijc.IJC_1208_20.

Authors

Vasundhara Saha [1], Kanhu Charan Mallik [1]

No abstract available

23. **Acupuncture for cancer-related insomnia: A systematic review and meta-analysis**
Phytomedicine. 2022 Jul 20;102:154160. doi: 10.1016/j.phymed.2022.154160. Epub 2022 May 14.

Authors

Jialing Zhang [1], Zhinan Zhang [2], Shengtao Huang [3], Xiaoke Qiu [3], Lixing Lao [4], Yong Huang [5], Zhang-Jin Zhang [6]

Abstract
Background: Cancer-related insomnia is a highly prevalent complaint in cancer patients. However, there is no meta-analytic synthesis explored the efficacy of acupuncture for cancer-related insomnia among cancer patients undergoing active cancer treatments.

Objective: This systematic review and meta-analysis were performed to explore the efficacy and safety of acupuncture for insomnia in people diagnosed with cancer.
Study design: Systematic review and meta-analysis of existing randomized controlled trials on acupuncture in the treatment of cancer-related insomnia.
Methods: According to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Statement, we identified and extracted the trials through November 2021 from ten databases and two trials record platforms (Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, PUBMED, Web of Science, PsycINFO, Allied and Complementary Medicine, Cumulative Index to Nursing and Allied Health Literature, China National Knowledge Infrastructure, Wanfang Digital Journals, ClinicalTrials, World Health Organization International Clinical Trials Registry Platform). The quality of the trials was assessed using Jadad score and Risk of Bias (2.0). A meta-analysis was synthesized using the random-effects model if the included studies were in high methodological quality.
Results: A total of 690 studies were identified, with 22 were included in the review, and 6 of them were included in the quantitative synthesis. Studies were highly heterogeneous in terms of participant characteristics and study methodologies. Most studies recruited patients diagnosed with a specific cancer type, and breast cancer patients were the subgroup most represented. The qualitative review of available evidence suggested a beneficial efficacy of acupuncture on sleep without serious adverse events in several studies (55%). The meta-analysis revealed that acupuncture produced a significant improvement in the total Pittsburgh Sleep Quality Index (PSQI) score relative to the wait-list control among breast cancer patients undergoing active cancer treatments (MD -1.92, 95% CI -3.25 to -0.59, p = 0.005). Similar improvement of real and sham acupuncture on PSQI score change post-intervention was found (MD: -0.68, 95% CI: -2.44 to 1.07, p = 0.44). Manual acupuncture had similar effective rate as compared to estazolam immediately post-intervention (RR: 0.94, 95% CI: 0.87 to 1.01, p = 0.09), and had significantly better effective rate than estazolam at 1-week post-intervention follow-up (RR: 1.25, 95% CI: 1.10 to 1.43, p = 0.0009). All reported acupuncture related adverse events were mild or moderate in severity.
Conclusion: Acupuncture has great potential to be used to manage cancer-related insomnia for cancer patients or survivors. More studies with rigorous designs and larger sample size are warranted to verify the efficacy and safety of acupuncture for insomnia among people diagnosed with cancer, in particular among those with clinically significant insomnia.

24. **Aromatherapy with inhalation can effectively improve the anxiety and depression of cancer patients: A meta-analysis**
Gen Hosp Psychiatry. 2022 Jul-Aug;77:118-127. doi: 10.1016/j.genhosppsych.2022.05.004. Epub 2022 May 18.

Authors

Tingting Liu [1], Hui Cheng [2], Li Tian [3], Yueyue Zhang [2], Shaotong Wang [2], Lu Lin [4]

Abstract
Purpose: This meta-analysis was to critically evaluate the effects of aromatherapy on the symptoms of anxiety and depression in cancer patients.

Methods: Eight Chinese and English databases (CNKI, Wanfang, VIP, CBM, Cochrane Library, PubMed, Embase, and PsycINFO) were systematically searched from the inception of databases to October 2021 for randomized controlled trials (RCTs). According to Cochrane Collaboration criteria, two reviewers independently assessed the risk of bias and extract data from included studies. All analyses were performed with Review Manager 5.4.
Results: Eleven qualified studies were included in the meta-analysis, ten of which reported the effect of aromatherapy on anxiety in cancer patients, including 1724 patients; five of the studies reported the effect on depression, including 1039 patients. The quality of the included studies was low, and most studies compared aromatherapy to usual care. This meta-analysis indicated that aromatherapy appeared to be effective for anxiety [SMD = -0.51, 95%CI (-0.83, -0.19), P = 0.002] and depression [SMD = -0.44, 95%CI (-0.76, -0.12), P = 0.008] symptoms in cancer patients. Inhalation aromatherapy may be more effective than massage. Aromatherapy seemed to improve the anxiety symptoms in cancer patients in a short time, especially in perioperative patients, but had no effect for patients treated with radiation, chemotherapy or palliative therapy. Placebo also appeared to be effective in some studies.
Conclusions: Aromatherapy, especially inhalation aromatherapy, may help relieve symptoms of anxiety and depression in cancer patients, but more and higher-quality studies are needed. The literature does not yet support clinical implementation.

25. **Effect of Somatosensory Interaction Transcutaneous Electrical Acupoint Stimulation on Cancer-related Fatigue and Immunity: A Randomized Controlled Trial**
Am J Clin Oncol. 2022 Jul 1;45(7):316-324. doi: 10.1097/COC.0000000000000922. Epub 2022 May 26.

Authors

Jianfeng Shu [1], Wei Ren [2], Shu Chen [3], Lin Li [4], Hui Zhu [5], Aixiang Jin [5]

Abstract

Background: This study was intended to evaluate the clinical effect of somatosensory interaction transcutaneous electrical acupoint stimulation (SI-TEAS) on cancer-related fatigue (CRF) and its safety.
Methods: The study protocol had been registered in China Clinical Trial Registration Center with registration number: ChiCTR2100045655. CRF patients were equally divided into SI-TEAS Group, Acupressure Group and Sham Acupressure Group to receive SI-TEAS, acupressure and sham acupressure treatments 5 times a week. The fatigue levels of patients in the 3 groups were measured by the Piper Fatigue Scale during the baseline period and after 4 and 8 weeks (of treatment). The cell immunity of these patients was determined by detecting the T-lymphocyte subsets and NK cells.
Result: Of the 300 participants, 279 have gone through the independent rehabilitation intervention study, including 94 in the SI-TEAS Group, 92 in the Acupressure Group, and 93 in the Sham Acupressure Group. Intergroup comparisons of fatigue degree and cell immunity, namely SI-TEAS Group versus Acupressure Group, Acupressure Group versus Sham Acupressure Group, and SI-TEAS Group versus Sham Acupressure Group, showed that group changes observed during the baseline period and different time points after Week 4 and 8 were statistically different

(P<0.05). The SI-TEAS Group had the sharpest decreases in the behavioral, sensory, emotional and cognitive dimensions of fatigue, and the total score, followed by the Acupressure Group, while the Sham Acupressure Group did not show significant changes; the SI-TEAS Group experienced the sharpest increases in the absolute counts of CD3+ T cells, CD4+ T cells, CD8+ T cells, CD4+/CD8+ T cells, and NK cells, followed by the Acupressure Group, while the Sham Acupressure Group did not show significant changes.
Conclusion: SI-TEAS could significantly relieve the fatigue of CRF patients and improve their cell immunity, which maybe a useful and effective option for reducing CRF in clinical practice.

26. **The anticancer effects of cyanidin 3-O-glucoside combined with 5-fluorouracil on lung large-cell carcinoma in nude mice**
Biomed Pharmacother. 2022 Jul;151:113128. doi: 10.1016/j.biopha.2022.113128. Epub 2022 May 24.

Authors

Ching-Feng Wu [1], Ching-Yang Wu [2], Chuen-Fu Lin [3], Yi-Wen Liu [4], Tzu-Chun Lin [5], Huei-Jyuan Liao [6], Geng-Ruei Chang [7]

Abstract
The haskap (Lonicera caerulea L., Caprifoliaceae) berry has been widely used in traditional medicine in Kuril Islands, Russia, Japan, and China. Cyanidin-3-O-glucoside (C3G) is the most abundant anthocyanin in haskap berries, and C3G induces antiproliferative pharmacological activity in various cancer cells. However, no study has investigated its anti-lung large-cell carcinoma (LCC) pharmacological role. Therefore, this study determined whether C3G alone or C3G combined with 5-fluorouracil (5-FU) inhibits human lung LCC. We determined the tumor growth, apoptosis, inflammation, and metastasis in the H661 lung LCC lines xenografted into BALB/c nude mice. The mice were administered saline (control), 5-FU, C3G, or both C3G and 5-FU. Relative to the control mice, those treated with C3G alone or both C3G and 5-FU exhibited impaired tumor growth; increased tumor apoptosis; decreased inflammatory cytokine levels (e.g., IL-1β, TNF-α, C-reactive protein, and IL-6); decreased inflammation-related factors, including cyclooxygenase-2 protein and nuclear factor-κB (NF-κB) mRNA; increased inhibition of NF-κB kinase α mRNA; and downregulated metastasis-related factors, such as transforming growth factor-β, CD44, epidermal growth factor receptor, and vascular endothelial growth factor. In addition, C3G alone or combined with 5-FU affected the expression of the tumor microenvironment-related factors Ki67, CD45, PDL1, and CD73. Compared with the mice treated with 5-FU or C3G alone, those treated with both C3G and 5-FU exhibited significantly impaired tumor growth, decreased tumor sizes, and increased tumor inhibition. This in vivo study demonstrated that C3G alone or combined with 5-FU may impair the growth of lung LCC and inhibit tumorigenesis. The findings indicate that C3G alone or C3G combined with 5-FU may be beneficial for treating human lung LCC.

27. **African culture, traditional medicine, and cancer care**
Lancet Oncol. 2022 Jun;23(6):705-706. doi: 10.1016/S1470-2045(22)00157-7. Epub 2022 May 9.

Authors

Peter Bai James [1], John Baptist Asiimwe [2], Jon Wardle [3], Amos Deogratius Mwaka [4], Ossy Muganga Julius Kasilo [5]

No abstract available

28. **Frequencies and predictors of health psychology referrals after integrative oncology consultation**
Support Care Cancer. 2022 Aug;30(8):6963-6972. doi: 10.1007/s00520-022-07105-3. Epub 2022 May 12.

Authors

Catherine Powers-James [1], Aimee J Christie [2], Santhosshi Narayanan [2], Wenli Liu [2], Telma Gomez [2], Lorenzo Cohen [2], Gabriel Lopez [2]

Abstract

Objective: Health psychology (HP) plays a critical role within a multidisciplinary, integrative oncology team. HP in integrative oncology is not well established and criteria for referral have not been examined. This study examined characteristics of referral to HP.

Methods: A chart review of 1827 patients in the Integrative Medicine Center (IMC) between 2019 and 2020 was conducted. Patient assessments included the Edmonton Symptom Assessment Scale, Measure Yourself Concerns and Well-being, and PROMIS10. Chi-square tests were used to compare categorical variables, Mann-Whitney test for non-normally distributed continuous variables, and t-tests for normally distributed continuous variables comparing those referred and not referred to HP.

Results: Patients referred (n = 316) were mostly female (85.4%), White (67.1%), married/partnered (67.7%), obese (42.1%), and with breast cancer (52.2%). When comparing the two groups, patients referred to HP and patients not referred to HP, patients referred had a higher proportion of female and Black patients than expected ($p \leq .01$); patients referred were also younger and had higher BMIs ($p \leq .01$). Referred patients reported worse fatigue, sleep, depression, anxiety, well-being, spiritual pain, financial distress, memory, overall mental health, physical health, and global health ($p \leq .01$). Most common concerns of referrals were diet/nutrition, overall health, and stress/anxiety. Compared to non-referred, HP referrals were more likely to prioritize depression, spirituality, and stress/anxiety ($p \leq .01$).

Conclusions: Patient characteristics are well-suited treatment targets for HP, including addressing emotional distress, healthy lifestyle, and quality of life. Our findings can help programs develop strategies to facilitate engagement with psychological counseling.

29. **Survey of the use of traditional and complementary medicine among children with cancer at three hospitals in Cameroon**
Pediatr Blood Cancer. 2022 Aug;69(8):e29675. doi: 10.1002/pbc.29675. Epub 2022 Apr 20.

Authors

Glenn M Afungchwi [1] [2], Mariana Kruger [2], Peter Hesseling [2], Sabine van Elsland [3], Elena J Ladas [4], Stacey Marjerrison [5] [6]

Abstract

Introduction: There is lack of diagnostic and treatment resources with variable access to childhood cancer treatment in low- and middle-income countries (LMIC), which may lead to subsequent poor survival. The primary aim of this study was to determine the prevalence and types of traditional and complementary medicine (T&CM) used in Cameroon. Secondarily, we explored determinants of T&CM use, associated costs, perceived benefits and harm, and disclosure of T&CM use to medical team.

Methods: A prospective, cross-sectional survey among parents and carers of children younger than 15 years of age who had a cancer diagnosis and received cancer treatment at three Baptist Mission hospitals between November 2017 and February 2019.

Results: Eighty participants completed the survey. Median patient age was 8.1 years (IQR4.1-11.1). There was significant availability (90%) and use (67.5%) of T&CM, whereas 24% thought T&CM would be good for cancer treatment. Common T&CM remedies included herbs and other plant remedies or teas taken by mouth, prayer for healing purposes and skin cutting. Living more than five hours away from the treatment center (P = 0.030), anticipated costs (0.028), and a habit of consulting a traditional healer when sick (P = 0.006) were associated with the use of T&CM. T&CM was mostly paid for in cash (53.7%) or provided free of charge (29.6%). Of importance was the fact that nearly half (44%) did not want to disclose the use of TM to their doctor.

Conclusion: Pediatric oncology patients used T&CM before and during treatment but were unlikely to disclose its use to the child's health care team.

30. **Manual Lymphatic Drainage for Breast Cancer-related Lymphedema: A Systematic Review and Meta-analysis of Randomized Controlled Trials**

Clin Breast Cancer. 2022 Jul;22(5):e664-e673. doi: 10.1016/j.clbc.2022.01.013. Epub 2022 Feb 24.

Authors

Yan Lin [1], Yan Yang [1], Xiaoyu Zhang [1], Wandi Li [1], Haoran Li [1], Dali Mu [2]

Abstract

Background: The purpose of this systematic review was to meta-analyze the effectiveness of manual lymphatic drainage (MLD) in breast cancer-related lymphedema (BCRL) patients.

Methods: The following databases: the Cochrane Library, the Cochrane Central Register of Controlled Trials, PubMed, EMBASE, Web of Science, ClinicalTrials.gov were systematically searched. All English publications before April 2021 have been retrieved without any restrictions of countries, time, or article type. We included randomized controlled trials (RCTs) examining the effectiveness of MLD versus control group without MLD of women with BCRL. The outcomes were (1) the incidence of lymphedema, (2) volumetric changes of lymphedema, (3) pain, (4) quality of life. Review Manager 5.3 was used to perform statistical analysis.

Results: In total, 11 RCTs involving 1564 patients were included, in which 10 trials were deemed viable for inclusion in the meta-analysis. Due to the effects of MLD for BCRL, statistically significant improvements were found on the incidence of lymphedema (RR = 0.58, 95% CI [0.37, 0.93], P =.02) and pain intensity (SMD = -0.72, 95% CI [-1.34, -0.09], P = .02). Besides, the meta-analysis carried out implied that the effects that MLD had on volumetric changes of lymphedema and quality of life, were not statistically significant.
Conclusion: The current evidence based on the RCTs shows that pain of BCRL patients undergoing MLD is significantly improved, while our findings do not support the use of MLD in improving volumetric of lymphedema and quality of life. Note that the effect of MLD for preventing BCRL is worthy of discussion.

31. **Cancer Chemotherapy *via* Natural Bioactive Compounds**
Curr Drug Discov Technol. 2022;19(4):e310322202888. doi: 10.2174/1570163819666220331095744.

Authors

Kalyani Pathak [1], Manash P Pathak [2], Riya Saikia [1], Urvashee Gogoi [1], Jon J Sahariah [1], James H Zothantluanga [1], Abhishek Samanta [1], Aparoop Das [1]

Abstract

Background: Cancer-induced mortality is increasingly prevalent globally, which skyrocketed the necessity to discover new/novel, safe and effective anticancer drugs. Cancer is characterized by the continuous multiplication of cells in the human, which is unable to control. Scientific research is drawing its attention toward naturally-derived bioactive compounds as they have fewer side effects compared to the current synthetic drugs used for chemotherapy.
Objective: Drugs isolated from natural sources and their role in the manipulation of epigenetic markers in cancer are discussed briefly in this review article.
Methods: With advancing medicinal plant biotechnology and microbiology in the past century, several anticancer phytomedicines were developed. Modern pharmacopeia contains at least 25% herbal-based remedies, including clinically used anticancer drugs. These drugs mainly include the podophyllotoxin derivatives vinca alkaloids, curcumin, mistletoe plant extracts, taxanes, camptothecin, combretastatin, and colchicine artesunate, homoharringtonine, ellipticine, roscovitine, maytansine, tapsigargin,and bruceantin.
Results: Compounds (psammaplin, didemnin, dolastin, ecteinascidin, and halichondrin) isolated from marine sources and animals such as microalgae, cyanobacteria, heterotrophic bacteria, invertebrates. They have been evaluated for their anticancer activity on cells and experimental animal models and used chemotherapy.Drug-induced manipulation of epigenetic markers plays an important role in the treatment of cancer.
Conclusion: The development of a new drug from isolated bioactive compounds of plant sources has been a feasible way to lower the toxicity and increase their effectiveness against cancer. Potential anticancer therapeutic leads obtained from various ethnomedicinal plants, foods, marine, and microorganisms are showing effective yet realistically safe pharmacological activity. This review will highlight important plant-based bioactive compounds like curcumin, stilbenes, terpenes, other polyphenolic phyto-compounds, and structurally related families that are used to

prevent/ ameliorate cancer. However, a contribution from all possible fields of science is still a prerequisite for discovering safe and effective anticancer drugs.

32. **A pilot randomized controlled trial using Baduanjin qigong to reverse frailty status among post-treatment older cancer survivors**
J Geriatr Oncol. 2022 Jun;13(5):682-690. doi: 10.1016/j.jgo.2022.02.014. Epub 2022 Mar 7.

Authors

Denise Shuk Ting Cheung [1], Pui Hing Chau [2], Tai-Chung Lam [3], Alina Yee Man Ng [2], Tiffany Wan Han Kwok [2], Naomi Takemura [2], Jean Woo [4], Doris Sau-Fung Yu [2], Chia Chin Lin [5]

Abstract

Objectives: To evaluate the feasibility and potential effects of qigong Baduanjin for reversing frailty status among older cancer survivors.

Materials and methods: Twenty-eight older cancer survivors screened as pre-frail or frail were recruited. They were randomly assigned (1:1) to receive a sixteen-week Baduanjin intervention or an active control condition (light flexibility exercise). Frailty status (primary outcome) and secondary outcomes (physical performance, activities of daily living performance, psychological well-being, and health-related quality of life) were measured by physical performance tests and questionnaires. Qualitative interviews were conducted to explore participants' perspectives on the intervention.

Results: Twenty-one participants (75%) completed the study, with reasons of withdrawal mainly relating to the COVID-19 pandemic. Attendance at Baduanjin sessions and adherence to self-practice were satisfactory, with all retained participants attending all sessions and 81.8% practicing Baduanjin for more than 90 min per week. Qualitative findings demonstrated that participants accepted Baduanjin. The proportion of improvement in frailty status at post-intervention appeared to be higher in the intervention group (26.7%; 95% confidence interval [CI], 10.1% to 54.0%) than the control group (15.4%; 95% CI, 3.7% to 46.0%); yet the difference was not statistically significant (p = 0.461).

Conclusions: Baduanjin qigong appears to be feasible and acceptable among older cancer survivors. To confirm the intervention effect, an adequately powered trial is warranted.

33. **Medicinal Plants for Glioblastoma Treatment**
Anticancer Agents Med Chem. 2022;22(13):2367-2384. doi: 10.2174/1871520622666211221144739.

Authors

Shreeja Datta [1], Ritika Luthra [1], Navneeta Bharadvaja [1]

Abstract

Glioblastoma, an aggressive brain cancer, demonstrates the least life expectancy among all brain cancers. Because of the regulation of diverse signaling pathways in cancers, the chemotherapeutic approaches used to suppress their multiplication and spread are restricted. Sensitivity towards chemotherapeutic agents has been developed because of the pathological and drug-evading

abilities of these diverse mechanisms. As a result, the identification and exploration of strategies or treatments, which can overcome such refractory obstacles to improve glioblastoma response to treatment as well as recovery, is essential. Medicinal herbs contain a wide variety of bioactive compounds, which could trigger aggressive brain cancers, regulate their anti-cancer mechanisms and immune responses to assist in cancer elimination, and cause cell death. Numerous tumor-causing proteins, which facilitate invasion as well as metastasis of cancer, tolerance of chemotherapies, and angiogenesis, are also inhibited by these phytochemicals. Such herbs remain valuable for glioblastoma prevention and its incidence by effectively being used as anti-glioma therapies. This review thus presents the latest findings on medicinal plants using which the extracts or bioactive components are being used against glioblastoma, their mechanism of functioning, pharmacological description, and recent clinical studies conducted on them.

34. **Electroacupuncture improves metabolic and ovarian function in a rat model of polycystic ovary syndrome by decreasing white adipose tissue, increasing brown adipose tissue, and modulating the gut microbiota**

Acupunct Med. 2022 Aug;40(4):347-359. doi: 10.1177/09645284211056663. Epub 2021 Dec 10.

Authors

Feifei Zhang [1 2], Tong Ma [3], Xiaoyu Tong [3], Yanjun Liu [3], Peng Cui [3], Xiaoqing Xu [3], Jiemei Shi [3], Wei Hu [3], Wenhan Lu [3], Zhenle Pei [3], Minzhen Xu [3], Xin Li [1 2], Congjian Xu [1 2], Yi Feng [3]

Abstract

Background: Polycystic ovary syndrome (PCOS) affects 8%-15% of reproductive-age women and is associated with reproductive disorders, abdominal obesity, hyperinsulinemia, insulin resistance, type 2 diabetes, and cardiovascular diseases. Acupuncture, as a traditional physical therapy method, could affect various metabolic disorders such as obesity, hyperplasia, gout, and cardiovascular and cerebrovascular diseases in clinical practice. Moreover, electroacupuncture (EA) has been shown to decrease body weight in rats with PCOS; however, the mechanism of weight loss and the relationship between adipose tissue and gut microbiota remain unclear.

Objective: To explore the effect and mechanism of EA on white and brown adipose tissues and gut microbiota, and its follow-up effect on reproductive function, in a rat model of PCOS.

Methods: Daily EA treatment was administered at ST29 and SP6 in a dihydrotestosterone (DHT)-induced PCOS-like rat model (PCOS + EA group). Effects of EA on in vivo and in vitro adipose volume and weight, organ weight coefficients, body weight, hormonal profiles, and estrous cyclicity were measured, and compared with untreated PCOS model rats (PCOS group) and healthy rats (control group). Microbial DNA was extracted from the fecal samples to analyze group abundance and diversity.

Results: EA improved estrous cyclicity, decreased body weight, decreased visceral and subcutaneous fat content, and increased brown adipose tissue weight. EA also normalized serum DHT and progesterone levels and improved glucose tolerance. There were few significant differences in the composition or diversity of the gut microbiota between control, PCOS, and PCOS + EA groups, except for the relative abundances of Tenericutes at the phylum level and Prevotella_9 at the genus level, which were significantly different in the PCOS group before and after EA treatment. Both are important microflora, strongly related to body weight.

Conclusion: EA regulated the metabolic disorders and improved reproductive function in this PCOS-like rat model by adjusting visceral fat and brown fat, as well as intestinal flora.

35. **Patients' lived experiences and recommendations for enhanced awareness and use of integrative oncology services in cancer care**
Patient Educ Couns. 2022 Jul;105(7):2557-2561. doi: 10.1016/j.pec.2021.11.018. Epub 2021 Nov 25.

Authors

Dana M Womack [1], Rosemary Kennedy [2], Steven R Chamberlin [3], Angela L Rademacher [4], Carolyn D Sliney [5]

Abstract

Background: Consuming educational content, adhering to treatment plans and managing symptoms and side-effects can be overwhelming to new oncology patients.

Objective: The purpose of this study is to engage patients in conceptualization of enhanced clinic processes and digital health tools to support awareness and use of integrative oncology services.

Patient involvement: We engaged patients in participatory design to understand lived experiences surrounding use of integrative oncology services during and after conventional cancer treatment.

Methods: Ten participatory design sessions were held with individual participants. Sessions began with patient story telling regarding diagnosis and paths to awareness and use of integrative oncology services. We then reviewed prototype mobile app screens to solicit feedback regarding digital health functionality to support patient navigation of symptom-alleviating options.

Results: Oncology patients are active participants in the management of symptoms and side effects. Patients who utilize yoga, acupuncture, and massage report a need for earlier patient education about these services. Patients express interest in digital health tools to match symptoms to options for relief, provide access to searchable information, and facilitate streamlined access to in-person and remote services.

Discussion: Patients co-produce wellbeing by seeking solutions to daily challenges and consuming educational content. Clinics can collaborate with patients to identify high priority needs and challenges.

Practical value: Active collaboration with patients is needed to identify unmet needs and guide development of clinic processes and digital health tools to enhance awareness and use of IO services in conventional cancer care.

Funding: The principal investigator was supported by the U.S. Agency for Healthcare Research and Quality (AHRQ K12HS026370). The content of this article is solely the responsibility of the authors and does not necessarily represent the official views of AHRQ. The sponsor had no role in the study design, data collection, analysis, report writing, or decision to submit for publication.

36. **Effect of progressive muscle relaxation on postoperative pain, fatigue, and vital signs in patients with head and neck cancers: A randomized controlled trial**
Patient Educ Couns. 2022 Jul;105(7):2151-2157. doi: 10.1016/j.pec.2021.10.034. Epub 2021 Nov 3.

Authors

El-Wui Loh [1], Huei-Fen Shih [2], Chung-Kwei Lin [3], Tsai-Wei Huang [4]

Objective: Surgery for head and neck cancers are associated with significant preoperative stress. We investigated the effects of progressive muscle relaxation (PMR) on postoperative pain, fatigue, and vital signs in patients with head and neck cancers.
Methods: All patients were hospitalized and randomly assigned to intervention or usual care groups. A generalized estimating equation was used to evaluate the PMR effects on pain and symptoms across the preoperative day to postoperative day 10.
Results: The PMR group displayed significantly lower overall pain and muscle tightness than control group along with the timeline of multiple measurements ($p < 0.01$). PMR significantly reduces sleep disturbances and levels of fatigue, anxiety, and depression compared with the control group with time trend ($p < 0.01$). PMR also lowered the respiratory rates and diastolic blood pressure ($p < 0.01$).
Conclusions: PMR can reduce sleep disturbances and levels of pain, fatigue, muscle tightness, anxiety, and depression in patients with head and neck cancer undergoing major surgeries. Future study should focus on improving the effectiveness of the exercise and standardization of the application.
Practical implications: progressive muscle relaxation help relieve discomforts in patients with head and neck cancers with minimal costs and efforts.

37. **Lymphedema Index Ratio As Predictive Factor of Treatment in Patients with Breast Cancer-Related Lymphedema**
Lymphat Res Biol. 2022 Jun;20(3):302-307. doi: 10.1089/lrb.2021.0029. Epub 2021 Oct 25.

Authors

Han Eum Choi [1], Yeong Kyun Bae [1], Jae Hyun Lee [1], Ghi Chan Kim [1], Ho Joong Jeong [1], Young Joo Sim [1]

Abstract
Background: This retrospective observational study aimed to evaluate the lymphedema index ratio to predict the effect of complex decongestive therapy (CDT) in patients with breast cancer-related lymphedema (BCRL) and to establish a lymphedema index ratio cutoff value for the extent of CDT effect. ***Materials and Methods:*** All 108 enrolled patients with BCRL underwent volume measurements and bioelectrical impedance analysis before and after CDT. The difference in percent excess volume (PEV) before and after CDT was defined as the therapeutic effect, and each patient was assigned to Groups A, B, or C based on therapeutic effects of 0%-5%, 5%-10%, and 10%-20%, respectively. ***Results:*** The mean lymphedema index ratios of Groups A, B, and C were 1.27, 1.38, and 1.46, respectively, with significant differences between the groups ($p < 0.01$). The cutoff lymphedema index ratio values for diagnosis between Groups A and B and between Groups B and C were 1.277 (sensitivity: 71.7%, specificity: 61.8%) and 1.357 (sensitivity: 76.9%, specificity: 62.1%), respectively. The Spearman coefficients for the linear relationship between lymphedema index ratio and initial PEV and between lymphedema index ratio and therapeutic

effect were found to be significant at 0.615 and 0.360, respectively ($p < 0.01$). ***Conclusion:*** The results of this study found that the lymphedema index ratio may predict the volume reduction in patients with BCRL. A less reduction (therapeutic effect <5%) was predicted in patients with a lymphedema index ratio of <1.277, while a greater reduction (therapeutic effect >10%) was predicted in patients with a lymphedema index ratio of >1.357.

38. **Effect of Low-Frequency Electro-Acupuncture in Unmarried Women With Polycystic Ovary Syndrome: A Randomized Controlled Study**
Altern Ther Health Med. 2022 May;28(4):24-33.

Authors

Haoxu Dong, Qing Wang, Ling Cheng, Zhi Wang, Xiaoke Wu, Zhongming Zhou, Li Yang, Dongmei Huang

Abstract
Objectives: We aimed to evaluate the effect of low-frequency electro-acupuncture (EA) in unmarried women with polycystic ovary syndrome (PCOS).
Design: A total of 54 women with PCOS were randomly assigned to either the acupuncture group (n=27) or the sham acupuncture group (control, n=27) for a total of 32 treatments over 16 weeks. In the acupuncture group 26 patients and in the control group 20 patients completed the trial.
Outcome measures: Main measures were androgen levels including 17-α-hydroxyprogesterone (17-α-OHP), androstenedione (A2), testosterone (T) and dehydroepiandrosterone (DHEA) at 0, 24 and 48 hours after stimulation with a dose of human chorionic gonadotropin (HCG). Other measures included body mass index, waist-to-hip ratio, sex hormone levels, etc.
Results: After treatment, there was no significant difference in the main measures between the 2 groups (P > .05), except for the DHEA level at 0 h of HCG stimulation (P = .024) and acne score (P < .05). Comparison within the acupuncture group found that 17-α-OHP and A2 levels at 0 h and DHEA levels at 24 h of HCG stimulation after treatment were significantly decreased (P < .05), whereas T levels at 24 h were significantly increased (P < .05). Comparison within the control group showed 17-α-OHP level at 0 h and 17-α-OHP and A2 and DHEA levels at 24 h after treatment were significantly lower (P < .05). In addition, weight, BMI, HCG and Ferriman-Gallwey score in the acupuncture group and LH/FSH ratio was significantly reduced in the control group.
Conclusion: Traditional EA is slightly more effective than sham acupuncture in reducing DHEA secretion and the acne score. Meanwhile, sham acupuncture is not completely ineffective. The specific mechanism of the two may be different.

39. **Aloe vera for Prevention of Acute Radiation Proctitis in Colorectal Cancer a Preliminary Randomized, Placebo-Controlled Clinical Trial**
J Gastrointest Cancer. 2022 Jun;53(2):318-325. doi: 10.1007/s12029-021-00597-y. Epub 2021 Feb 22.

Authors

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Abstract

Objective: To examine the preventive effects of Aloe vera in colorectal cancer patients undergoing radiotherapy.

Material and method: Twenty colorectal cancer patients, who received radiation, were randomized to receive Aloe vera 3% or placebo ointment, 1 g twice daily for 6 weeks. At weekly visits, acute radiation proctitis (ARP) was evaluated by Radiation Therapy Oncology Group and clinical presentation criteria as the primary endpoint. We also evaluated secondary endpoints of quality of life, psychosocial status, by applying Hospital Anxiety-Depression (HAD) Scale and laboratory measures of quantitative measurement of C-reactive protein (CRP) as a marker for systemic inflammation.

Results: There was a significant improvement in the symptom index (before treatment vs. after treatment with Aloe vera) for diarrhea ($p = 0.029$, median score: 0.5 vs. 0.001). The overall primary and secondary outcomes favored Aloe group, while the measures of toxicity did not achieve a statistical significant difference. The lifestyle score improved significantly with A. vera ($p = 004$), and they also had a lower depression score in HAD scale ($p = 0.008$). Furthermore, quantitative CRP decreased significantly during the course of treatment with Aloe vera.

Conclusion: The use of topical formulation of Aloe vera 3% diminishes the severity of ARP in colorectal cancer patients.