SIO Monthly Digest October 2022

1. **Effects of a nurse-led Tai Chi programme on improving quality of life, mental wellbeing, and physical function of women with breast cancer: Protocol for a randomized controlled trial**

Womens Health (Lond). 2022 Jan-Dec;18:17455057221127813. doi: 10.1177/17455057221127813.

Authors

Carol Chunfeng Wang [1] [2], Sadie Geraghty [1], Caitlin Fox-Harding [3] [4], Calvin Wang [5]

Abstract

Objectives: Quality of life, mental wellbeing, and physical function deteriorate among women with breast cancer. Tai Chi is a moderate form of exercise that may be effective in improving the mental and physical wellbeing, therefore, the quality of life of women with breast cancer. This protocol paper outlines a trial to determine the therapeutic effects of a Tai Chi programme on breast cancer management.

Methods: The study will be an interventional, single-blind, double-armed, randomized, and controlled trial involving a 12-week Tai Chi programme for women with breast cancer. Forty participants aged 18 years and above who are diagnosed with breast cancer from the general community will be recruited. All participants will be randomized to either a Tai Chi programme or a waiting list control group. The Tai Chi programme will involve 12 weeks of group Tai Chi sessions, with 45 min per session, twice a week. The primary outcome will be potential improvements to the quality of life, and secondary outcomes will be potential improvements in mental wellbeing (anxiety and depression), and physical function (pain, flexibility, obesity, and vital signs). These outcomes will be assessed via self-administered online assessments and physical examinations pre-and post-intervention. Linear mixed modelling will be used to assess changes in outcomes.

Discussion and dissemination: Tai Chi is a safe, easy to learn, inexpensive, and low-intensity exercise with increasing popularity worldwide. If the intervention improves the quality of life in women with breast cancer, this study will build research capacity and increase awareness of the potential for Tai Chi to empower patients and engage them in self-management of breast cancer symptoms. Research findings will be disseminated to the public, health professionals, researchers, and healthcare providers through conference presentations, lay summaries, and peer-reviewed publications.

2. **Network Pharmacology-Integrated Molecular Docking Reveals the Expected Anticancer Mechanism of *Picrorhizae Rhizoma* Extract**

Biomed Res Int. 2022 Sep 16;2022:3268773. doi: 10.1155/2022/3268773. eCollection 2022.

Authors

Xiaomeng Hu [1], Shengchao Zhao [1 2], Yi Cai [3], Shasank S Swain [4], Liangliang Yao [5], Wei Liu [1], Tingdong Yan [2]

Abstract

This study sought to explore the anticancer mechanism of *Picrorhizae Rhizoma* (PR) extract based on network pharmacology and molecular docking. The potential chemicals of PR were screened through the Traditional Chinese Medicine Systems Pharmacology (TCMSP) database and relevant literatures. Corresponding targets of active ingredients were found with the help of the UniProtKB database, and therapeutic targets for cancer action were screened with the help of the GeneCards database. We used Cytoscape software to construct the compound-target-pathway network of PR extract. We utilized the STRING database to obtain the protein-protein interaction (PPI) network. We used DAVID database combining Gene Ontology (GO) analysis and Kyoto Encyclopedia of Genes and Genomes (KEGG) pathway enrichment analysis. Finally, molecular docking was employed for initial efficacy checking. We have identified 16 potential active components of PR through screening, involving 112 disease action targets. Utilizing the GeneCards database, 112 intersecting targets between PR extract and cancer were found, which mainly exerts anticancer effects by regulating tumor necrosis factor (TNF), recombinant caspase 3 (CASP3), c-Jun NH2-terminal kinase (JNK)/JUN, epidermal growth factor receptor (EGFR), and estrogen receptor-1 (ESR1) with some other target genes and pathways associated with cancer. The major anticancer species are prostate cancer, colorectal cancer, small cell lung cancer, etc. In the molecular docking study, herbactin had a strong affinity for TNF. Based on network pharmacology and molecular docking studies, PR and their compounds have demonstrated potential anticancer activities against several key targets. Our preliminary findings provide a strong foundation for further experiments with PR constituents.

3. **Probiotics and postbiotics in colorectal cancer: Prevention and complementary therapy**

World J Gastroenterol. 2022 Jul 21;28(27):3370-3382. doi: 10.3748/wjg.v28.i27.3370.

Authors

Monika Kvakova [1], Anna Kamlarova [2], Jana Stofilova [2], Veronika Benetinova [2], Izabela Bertkova [2]

Abstract

Colorectal cancer (CRC) is a leading cause of human mortality worldwide. As conventional anticancer therapy not always being effective, there is growing interest in innovative "drug-free" cancer treatments or interventions that improve the efficacy of established therapy. CRC is associated with microbiome alterations, a process known as dysbiosis that involves depletion

and/or enrichment of particular gut bacterial species and their metabolic functions. Supplementing patient treatment with traditional probiotics (with or without prebiotics), next-generation probiotics (NGP), or postbiotics represents a potentially effective and accessible complementary anticancer strategy by restoring gut microbiota composition and/or by signaling to the host. In this capacity, restoration of the gut microbiota in cancer patients can stabilize and enhance intestinal barrier function, as well as promote anticarcinogenic, anti-inflammatory, antimutagenic or other biologically important biochemical pathways that show high specificity towards tumor cells. Potential benefits of traditional probiotics, NGP, and postbiotics include modulating gut microbiota composition and function, as well as the host inflammatory response. Their application in CRC prevention is highlighted in this review, where we consider supportive *in vitro*, animal, and clinical studies. Based on emerging research, NGP and postbiotics hold promise in establishing innovative treatments for CRC by conferring physiological functions *via* the production of dominant natural products and metabolites that provide new host-microbiota signals to combat CRC. Although favorable results have been reported, further investigations focusing on strain and dose specificity are required to ensure the efficacy and safety of traditional probiotics, NGP, and postbiotics in CRC prevention and treatment.

4. **"Is the Pain a Sign of Healing?": Cancer Patients' Experiences of Energy Healing in a Pragmatic Trial**

Integr Cancer Ther. 2022 Jan-Dec;21:15347354221118328. doi: 10.1177/15347354221118328.

Author

Rita Agdal [1]

Abstract

The use of complementary and alternative medicine has increased, most markedly among cancer patients. Previous research on energy healing is inconclusive, but qualitative studies have mainly reported positive healing experiences, whereas positive results from trials are scarce. Considering the apparent discrepancy between qualitative and quantitative studies, we aimed to describe the interpretation processes of the patients receiving energy healing. We followed the interpretation processes of a subsection of cancer patients who participated in a pragmatic trial on energy healing, including patients in the control groups. No significant differences between the groups were found in the quantitative part of the trial, but the majority of patients in both the intervention and control groups reported subjective improvements. A subset of 32 patients from the trial was selected for this qualitative sub-study to gain insight into their interpretation processes. These 32 patients recruited from the trial were followed with qualitative interviews before, during, and after the treatment period, using a cultural-phenomenological approach. Most patients who received energy healing changed their perception of bodily experiences, and they perceived a wider variety of signs as indicative of healing than the patients in the control groups. After receiving energy healing, the patients also perceived signs that from a medical perspective are regarded as symptoms, as signs of healing. The changes in perception of illness

and healing affected decision-making dynamics and should be considered when producing information and communication strategies for health promotion.

5. **Effects of Acupuncture on Breast Cancer Patients Taking Aromatase Inhibitors**

Biomed Res Int. 2022 Sep 12;2022:1164355. doi: 10.1155/2022/1164355. eCollection 2022.

Authors

Qing-Ling Qi [1], Xue Han [1], Cheng Tang [2]

Abstract

Although acupuncture has been used in clinical practice for thousands of years, it remains a controversial treatment option to help alleviate pain in cancer patients. In this study, we analyzed published material on randomized trials of acupuncture from MEDLINE published up until July 31, 2018, to assess its effects on pain experienced by cancer patients. Revman 5.0 software was used to conduct meta-analysis with pain score as the index. The results of nine randomized controlled trials involving 592 patients were analyzed and showed that acupuncture can relieve the pain caused by aromatase inhibitors. Weighted mean difference of worst pain and pain severity was -3.03, 95% CI (-3.90,-2.16) and -2.69, 95% CI (-4.08,-1.30), respectively ($P < 0.01$). This led us to conclude that acupuncture has pain relieving effects against pain caused by aromatase inhibitors.

6. **Randomised clinical trial of a manual therapy programme to reduce the evolution time of axillary web syndrome in women affected by breast cancer: study protocol**

BMJ Open. 2022 Sep 21;12(9):e063305. doi: 10.1136/bmjopen-2022-063305.

Authors

Jesús Baltasar González Rubino [1], Maria Jesus Vinolo-Gil [2], Cristina García Muñoz [2], Rocío Martín-Valero [3]

Abstract

Introduction: Breast cancer is the most common malignant tumour in women, with more than 2 million new cases annually worldwide. One of the most frequent and well-known surgical and post-actinic sequelae is post-mastectomy lymphoedema. The axillary web syndrome is another sequela that limits the functionality of the patient and delays the protocol time of administering cancer treatments; and in many cases, this sequela is misdiagnosed. This surgical sequela usually disappears spontaneously after the third month of appearance, but this implies a long period of discomfort and limitations for the patient, at the same time, it may delay the application of radiotherapy within the indicated protocol deadline (due to a need for body posture).

Methods and analysis: With the present quasi-experimental study, we intend to show the application of physiotherapy and stretching from the beginning of the appearance of the axillary cord, in a controlled and scheduled way by the physiotherapist. It is possible to reduce the time in which the lymphatic thrombus is present and, therefore, recover functionality and mobility, reduce pain and be able to apply treatments within the established deadline. We intend to apply this therapy into the intervention group and compare thrombus evolution time with the control group.

Ethics and dissemination: This trial has the approval of the Andalucía Ethics Committee (PEIBA code 1909-N1-21, reg. number 171.21).

7. **Association of Non-Melanoma Skin Cancer with Temperament from the Perspective of Traditional Persian Medicine: A Case-Control Study**

Iran J Med Sci. 2022 Sep;47(5):477-483. doi: 10.30476/IJMS.2021.91265.2239.

Authors

Mohammad Mahdi Parvizi [1 2 3], Mehdi Ghahartars [4], Zeynab Jowkar [5], Nasrin Saki [4], Mahtab Kamgar [5], Parisa Hosseinpour [6], Hamid Zare [2], Fatemeh Sari Aslani [1 7]

Abstract

Background: Non-melanoma skin cancer (NMSC) is the most common type of cancer in the world. In traditional Persian medicine (TPM), various types of temperament (*Mizaj*) are considered to diagnose, treat, and prevent a variety of illnesses. The present study aimed to evaluate the temperament of patients with NMSC in comparison with a control group.

Methods: A case-control study was conducted in 2018 at the Dermatology Clinic of Shahid Faghihi Hospital affiliated with Shiraz University of Medical Sciences (Shiraz, Iran). A total of 110 patients, aged ≥20 years with confirmed NMSC (case group), and 181 individuals without NMSC (control group) were enrolled in the study. The temperament of the participants in both groups was evaluated using Mojahedi's Mizaj questionnaire. The data were analyzed using SPSS software, and $P<0.05$ was considered statistically significant.

Results: The results showed that the odds ratio of developing NMSC was 2.62 (95%CI: 1.42-4.83, $P=0.002$) times higher in individuals with dry temperament than other types of temperament. Moreover, the odds ratio of patients with a history of chronic skin ulcers and other types of cancer was 35.7 (95%CI: 11.9-107.15, $P<0.001$) and 5.22 (95%CI: 1.43-19.06, $P=0.012$) times higher, respectively, than the control group.

8. **To Explore the Molecular Mechanism of Acupuncture Alleviating Inflammation and Treating Obesity Based on Text Mining**

Biomed Res Int. 2022 Sep 5;2022:3133096. doi: 10.1155/2022/3133096. eCollection 2022.

Authors

YiKuan Du [1], LuLu He [2], XinNi Ye [2], ShuZhen Chen [2], GuanHao Li [2], YuanWei Yu [2], ErBai Ye [2], YiXing Huang [2], YuQi Zhou [2], WeiChui Zhang [2], Chun Yang [2]

Abstract

Objective: To explore the related mechanism of acupuncture affecting obesity by regulating inflammation using bioinformatics methods.

Methods: The genes related to obesity, inflammation, and acupuncture and inflammation were mined using GenCLiP 3, and the intersecting genes were extracted using Venn diagram. The DAVID database was employed for pathway enrichment analysis and functional annotation of coexpressed genes. Then, the protein-protein interaction (PPI) network was constructed with the STRING database and visualized by the Cytoscape software and screened out important hub genes. Finally, the Boxplot and Survival Analysis of the hub genes in various cancers were performed by GEPIA.

Results: 755 genes related to obesity and inflammation and 38 genes related to acupuncture and inflammation were identified, and 24 coexpressed genes related to obesity, inflammation, and acupuncture were extracted from the Venn diagram. Eight hub genes including interleukin-6 (IL-6), interleukin-10 (IL-10), Toll-like receptor 4 (TLR4), signal transduction and transcriptional activation factor 3 (STAT3), C-X-C motif chemokine 10 (CXCL10), interleukin-17A (IL-17A), prostaglandin peroxide synthesis-2 (PTGS2), signal transistors, and transcriptional activation factor 6 (STAT6) were identified by gene ontology (GO), Kyoto Encyclopedia of Genes (KEGG), and PPI network analysis. Among them, IL-6 is suggested to play an essential role in the treatment of obesity and inflammation by acupuncture, and IL-6 was significant in both Boxplot and Survival Analysis of pancreatic cancer (PAAD). Therefore, in this study, the core gene, IL-6 was used as the breakthrough point to explore the possible mechanism of acupuncture in treating obesity and pancreatic cancer by regulating IL-6.

Conclusion: (1) Acupuncture can regulate the expression of IL-6 through the TLR4/nuclear factor-*κ*B (NF-*κ*B) pathway, thereby alleviating inflammation, which can be used as a potential strategy for the treatment of obesity. (2) IL-6/STAT3 is closely related to the occurrence, development, and metastasis of pancreatic cancer. Acupuncture affecting pancreatic cancer through TLR4/NF-*κ*B/IL-6/STAT3 pathway may be a potential method for the treatment of pancreatic cancer.

9. **Acupuncture combined with metformin versus metformin alone to improve pregnancy rate in polycystic ovary syndrome: A systematic review and meta-analysis**

Front Endocrinol (Lausanne). 2022 Aug 29;13:978280. doi: 10.3389/fendo.2022.978280. eCollection 2022.

Authors

Xin Chen [1], Ying Lan [2], Lijie Yang [2], Yang Liu [1], Hongyu Li [1], Xinyun Zhu [3], Yuemeng Zhao [1], Caiyi Long [4], Mengjing Wang [1], Qingling Xie [1], Zhao Li [2], Jie Wu [2]

Abstract

Objective: The aim of this study was to evaluate the comparison between acupuncture combined with metformin versus metformin alone in improving the pregnancy rate of people with polycystic ovary syndrome (PCOS).

Methods: A literature search of eight databases resulted in nine randomized controlled trials (RCTs) that assessed the effect of acupuncture combined with metformin on pregnancy rate in PCOS patients compared with metformin alone. Subsequently, data extraction and analysis were conducted to evaluate the quality and risk of bias of the methodological design of the study, and meta-analysis was conducted on the RCT data.

Results: Nine RCTs and 1,159 women were included. Acupuncture can improve pregnancy rate. It was analyzed according to the diagnostic criteria of PCOS [Z = 2.72, p = 0.007, relative risk (RR) 1.31, 95% CI 1.08 to 1.60, p = 0.15, I^2 = 41%]. Analysis was performed according to different diagnostic criteria of pregnancy (Z = 3.22, p = 0.001, RR 1.35, 95% CI 1.13 to 1.63, p = 0.12, I^2 = 42%). Acupuncture can improve ovulation rate. Subgroup analysis was performed according to the number of ovulation patients (Z = 2.67, p = 0.008, RR 1.31, 95% CI 1.07 to 1.59, p = 0.04, I^2 = 63%) and ovulation cycle (Z = 3.57; p = 0.0004, RR 1.18, 95% CI 1.08 to 1.29, p = 0.57, I^2 = 0%). Statistical analysis also showed that acupuncture combined with metformin could improve homeostatic model assessment of insulin resistance (HOMA-IR) [mean difference (MD) -0.68, 95% CI -1.01 to -0.35, p = 0.003, I^2 = 83%].

Conclusions: Based on the results of this study, compared with metformin alone, acupuncture combined with metformin has a positive effect on pregnancy rate, ovulation rate, and insulin resistance in PCOS. However, due to the limitations regarding the number and quality of the included studies, the above conclusions need to be verified by further high-quality studies.

10. **Acupuncture for cancer-related conditions: An overview of systematic reviews**

Phytomedicine. 2022 Nov;106:154430. doi: 10.1016/j.phymed.2022.154430. Epub 2022 Sep 5.

Authors

Xiao-Wen Zhang [1], Wen-Bin Hou [1], Feng-Lan Pu [1], Xue-Feng Wang [2], Yi-Ran Wang [2], Ming Yang [3], Ke Cheng [4], Yuyi Wang [5], Nicola Robinson [6], Jian-Ping Liu [7]

Abstract

Background: Acupuncture is commonly used for cancer-related conditions worldwide, and evidence is increasing year on year. There is a need to summarize the evidence of acupuncture for cancer-related conditions comprehensively and critically.

Objective: To evaluate and summarize the systematic reviews (SRs) that assess the effects and safety of acupuncture for cancer-related conditions, and to inform clinical practice and future studies.

Methods: A comprehensive search was conducted on Pubmed, Embase, the Cochrane Library, Web of Science, CNKI, VIP, Sinomed, and Wanfang from their inception to October 16, 2021. SRs of randomized controlled trials (RCTs) on acupuncture for cancer-related conditions were to be included. Two reviewers screened the eligible articles, and four reviewers in pair extracted data and assessed the methodological quality/risk of bias of all included reviews by AMSTAR 2 and ROBIS tools. The overlap of primary studies was measured by calculating corrected covered areas. Data from the included reviews were synthesized with a summary of meta-analysis or narrative description.

Results: Fifty-one SRs of RCTs on acupuncture for cancer-related conditions were included and synthesized. The methodological quality of SRs included 1 "high", 5 "low" and 45 "very low" by AMSTAR 2. Sixteen SRs assessed as low risk of bias (31.37%), and 35 SRs had high risk of bias (68.63%) by ROBIS. Acupuncture showed effective on systemic conditions in relation to different cancers, including cancer-related pain (17 SRs, 80 RCTs), fatigue (7 SRs, 18 RCTs), insomnia (4 SRs, 10 RCTs), quality of life (2 SRs, 15 RCTs); conditions in relation to chemo-radiotherapy, including nausea and vomiting (3 SRs, 36 RCTs) and bone marrow suppression (2 SRs, 21 RCTs); and conditions in relation to specific cancers, including breast cancer-related menopause (3 SRs, 6 RCTs), hot flashes (12 SRs, 13 RCTs), arthralgia (5 SRs, 10 RCTs), and nasopharyngeal cancer-related dysphagia (1 SRs, 7 RCTs). Acupuncture appeared to have benefit for patients with lymphoedema (3 SRs, 3 RCTs), gastrointestinal function (5 SRs, 27 RCTs), and xerostomia (4 SRs, 7 RCTs). Limited evidence showed inconsistent results on acupuncture for chemotherapy-induced peripheral neuropathy (3 SRs, 6 RCTs), depression and anxiety (3 SRs, 9 RCTs). Acupuncture was regarded as a safe therapy for cancer patients as no severe adverse events related were reported.

Conclusion: Evidence from SRs showed that acupuncture is beneficial to cancer survivors with cancer-related pain, fatigue, insomnia, improved quality of life, nausea and vomiting, bone marrow suppression, menopausal symptoms, arthralgia, and dysphagia, and may also be potential for lymphoedema, gastrointestinal function, and xerostomia. For neuropathy, depression and anxiety, acupuncture should be used as an option based on individual conditions. Acupuncture is relatively safe without serious adverse events. More well-designed clinical trials of

acupuncture are recommended on cancer-related depression and anxiety, arthralgia, xerostomia, gastrointestinal dysfunction and dysphagia.

11. **Medicinal Plants Used for Abdominal Discomfort - Information from Cancer Patients and Medical Students**

In Vivo. 2022 Sep-Oct;36(5):2422-2433. doi: 10.21873/invivo.12976.

Authors

Soeren Klaus Buentzel [1], Jutta Huebner [1], Judith Buentzel [2], Oliver Micke [3]

Abstract

Background/aim: Abdominal discomfort during tumour therapy often leads to the use of phytotherapeutics from the field of folk medicine. What knowledge base do patients and young physicians have when they come across this phenomenon together?

Patients and methods: We conducted an online survey of 157 medical students and, in consultation, 125 patients according to a standardised algorithm about their knowledge and use of a list of given medicinal plants for the above-mentioned symptomatology. We previously created the list of traditional German medicinal plants taking into account the symptoms of bloating, fullness, diarrhoea, constipation, and nausea. Both data pools are presented descriptively, compared using principal component analysis, and student knowledge was subjected to network analysis.

Results: As a median, patients know 9 medicinal plants and use 4 species. Students know 10 medicinal plants and use 5 species. The rate of non-users is 13.6% among patients and 11.4% among students. The plants used by both groups are ginger and mint, whereas patients also use camomile and fennel. The nearly coincident knowledge profile speaks of a common knowledge base - folk medicine. Network analysis illustrated that students stored their knowledge in symptom clusters.

Conclusion: Patients with cancer and students are familiar with a similar canon of medicinal plants for the treatment of abdominal discomfort. Their common source is folk medicine. Targeted instructions on evidence-based phytotherapy are needed to improve students' existing symptom-cluster-related knowledge.

12. **Cancer Patient Motives and Expectations on Non-medical Practitioners**

In Vivo. 2022 Sep-Oct;36(5):2505-2513. doi: 10.21873/invivo.12986.

Authors

Christian Keinki [1], Emadaldin Ahmadi [2], Karin Kastrati [3], Bijan Zomorodbakhsch [4], Jutta Hübner [2], Working Group Prevention and Integrative Oncology of the German Cancer Society (PRIO)

Abstract

Background/aim: Non-medical practitioners (NMPs) are an ill-defined group of professionals offering patient diagnostic and therapeutic methods mostly in the field of complementary and alternative medicine (CAM). Despite a lack of quality-assessed structured professional formation, many patients with cancer visit NMPs for advice. This study aimed to learn more on patients' motives and expectations for consulting an NMP.

Patients and methods: A standardized questionnaire was distributed to adult cancer patients addressing attitudes towards NMPs, motives and expectations for consulting an NMP.

Results: A total of 279 patients took part in the survey. Of the included patients 44.8% had already visited an NMP and 16.5% planned to do so. Reasons to visit an NMP were seeking for a supplementary treatment (72.0%) or control of side-effects (68.0%). While the oncologist ranked higher than the NMP in all aspects of physician-patient interaction and patients more often trusted in the oncologist, those patients rating their oncologist rather low in any of these questions significantly more often consulted an NMP. The methods applied or recommended by the NMPs were highly heterogenous ranging from biologically-based methods to mind-body-techniques. Most often used methods were homeopathy (72.0%) vitamin D (62.7%), selenium (42.7%), acupuncture (38.7%).

Conclusion: There is a high proportion of cancer patients visiting NMPs mostly for additional treatment. Biologically-based treatments may induce side-effects and interactions, especially as NMPs are not trained on medically accepted cancer treatment and medications. Offering information on CAM and improving the physician-patient relationship are important means to answer unmet needs from the side of the patient.

13. **Realgar (As_4S_4), a traditional Chinese medicine, induces acute promyelocytic leukemia cell death via the Bcl-2/Bax/Cyt-C/AIF signaling pathway *in vitro***

Aging (Albany NY). 2022 Sep 12;14(17):7109-7125. doi: 10.18632/aging.204281. Epub 2022 Sep 12.

Authors

Zonghong Li [1], Ruiming Zhang [2], Xuewei Yin [1], Nana Li [3], Siyuan Cui [4], Teng Wang [1], Xing Tan [1], Mingyue Shen [5], Yun Guo [6], Jinxin Wang [4], Dadong Guo [7], Ruirong Xu [4]

Abstract

Acute promyelocytic leukemia (APL) is a specific subtype of acute myelogenous leukemia (AML) characterized by the proliferation of abnormal promyelocytes. Realgar, a Chinese medicine containing arsenic, can be taken orally. Traditional Chinese medicine physicians have employed realgar to treat APL for over a thousand years. Therefore, realgar may be a promising candidate for the treatment of APL. Nevertheless, the underlying mechanism behind realgar therapy is largely unclear. The present study aimed to investigate the effect of realgar on cell death in the APL cell line (NB4) *in vitro* and to elucidate the underlying mechanism. In this study, after APL cells were treated with different concentrations of realgar, the cell survival rate, apoptotic assay, morphological changes, ATP levels and cell cycle arrest were assessed. The expression of Bcl-2, Bax, Cytochrome C (Cyt-C) and apoptosis-inducing factor (AIF) at the mRNA and protein levels were also measured by immunofluorescence, quantitative PCR (qPCR) and Western blotting. We found that realgar could significantly inhibit APL cell proliferation and cell death in a time- and dose-dependent manner. Realgar effectively decreased the ATP levels in APL cells. Realgar also induced APL cell cycle arrest at the S and G2/M phases. Following realgar treatment, the mRNA and protein levels of Bcl-2 were significantly downregulated, whereas the levels of Bax, Cyt-C, and AIF were significantly upregulated. In summary, realgar can induce APL cell death via the Bcl-2/Bax/Cyt-C/AIF signaling pathway, suggesting that realgar may be an effective therapeutic for APL.

14. **A Case-Control Study of the Effects of Implementing the Registered Nurses' Association of Ontario Guidelines for the Assessment and Management of Postoperative Pain and the Use of Relaxation Therapy in 312 Patients with Bone and Soft-Tissue Malignancy**

Med Sci Monit. 2022 Sep 13;28:e937496. doi: 10.12659/MSM.937496.

Authors

Qian Gao [1 2], Qi Xu [1 2], Xiaowei Zhou [1 2], Zhaonong Yao [1 2], Yuhong Yao [1 2]

Abstract

BACKGROUND The present study aimed to investigate the effects of implementing the Registered Nurses' Association of Ontario (RNAO) guidelines for the management of postoperative pain and the use of Jacobson's relaxation technique (JRT) in patients with bone and soft-tissue malignancy at a single center in China. MATERIAL AND METHODS A total of 312 patients were recruited and randomly divided into 2 groups. In the intervention group, the RNAO pain-management technique of JRT was adopted, while the control group received the standard institutional nursing management. Pain scores after the operation, according to the Numerical Rating Scale (NRS) combined with the Wong-Baker Faces Pain Rating Scale and Short-Form McGill Pain Questionnaire, were compared between the 2 groups. Nursing satisfaction was compared as well. RESULTS At 6, 24, and 72 h after the operation, the NRS scores combined with the Wong-Baker Faces Pain Rating Scale in the intervention group were significantly lower than those in the control group (P<0.001); 72 h after the operation, the Pain Rating Index, Visual Analogue Scale, present pain intensity, and total scores for the intervention group were significantly lower than

those for the control group (P<0.001 for all 4 scores). The scores reported from the patients for nursing response and consequent care (P<0.001), nursing competence (P=0.029), and surgical pain-control satisfaction (P<0.001) in the intervention group were also significantly higher than those in the control group. CONCLUSIONS JRT can improve postoperative pain-control and nursing satisfaction in patients with malignant bone and soft-tissue tumors. These data suggest a benefit for application of JRT in clinical care.

15. **Acupuncture ameliorates breast cancer-related fatigue by regulating the gut microbiota-gut-brain axis**

Front Endocrinol (Lausanne). 2022 Aug 24;13:921119. doi: 10.3389/fendo.2022.921119. eCollection 2022.

Authors

Zhuan Lv [1 2], Ruidong Liu [3], Kaiqi Su [1], Yiming Gu [2], Lu Fang [2], Yongfu Fan [2], Jing Gao [1], Xiaodi Ruan [2], Xiaodong Feng [1 2]

Abstract

Cancer-related fatigue (CRF) is the most common side effect of chemotherapy for breast cancer (BC). Acupuncture treatment has an anti-fatigue effect and can regulate gut microbiota disturbance in fatigue patients. Related studies have shown that the gut microbiota-gut-brain axis is closely related to the occurrence of CRF. In this study, we first investigated the alterations of acupuncture on fatigue-like behavior, gut microbiota, gut inflammation and neuroinflammation response, gut barriers, HPA axis, and serum metabolomics in CRF mice after BC chemotherapy. Then, the correlation analysis of gut microbiota and other indicators was discussed. Our results showed that acupuncture treatment could exert an anti-fatigue effect and ameliorate the gut barrier, gut inflammation, neuroinflammation, and dysfunction of the HPA axis in CRF mice after chemotherapy for BC. 16S rRNA sequencing showed that acupuncture treatment could enhance the abundance of *Candidatus Arthromitus*, *Lactobacillus*, and *Clostridia_UCG-014_unclassified* and decrease the abundances of *Escherichia-Shigella*, *Burkholderia-Caballeronia-Paraburkholderia*, and *Streptococcus*. Serum metabolomics analysis showed that acupuncture treatment could regulate the differential metabolites N-methylnicotinamide, beta-glycerophosphoric acid, geranyl acetoacetate, serotonin and phenylalanine, tyrosine and tryptophan biosynthesis, taurine and hypotaurine, and beta-alanine metabolic pathways. Correlation analysis indicated that there are certain correlations between gut microbiota and gut inflammation, neuroinflammation, gut barrier, HPA axis function and serum metabolites. In conclusion, our findings revealed that the anti-fatigue mechanism of acupuncture treatment may be closely related to the gut microbiota-gut-brain axis. This study also provided a new reference for basic and clinical research on CRF after breast cancer chemotherapy.

16. **Exploring Yoga Instructors' Experiences Delivering Yoga to Children and Adolescents Affected by Cancer or Blood Disease**

Int J Yoga Therap. 2022 Jan 1;32(2022):Article 11. doi: 10.17761/2022-D-21-00068.

Authors

Kelsey Ellis [1], Nicole Culos-Reed [2], Fiona Schulte [3], Lillian Sung [4], Amanda Wurz [5]

Abstract

Yoga may offer benefits for children and adolescents affected by cancer or blood disease, yet there are challenges in translating evidence to practice. Yoga instructors are critical for the delivery of yoga. Understanding yoga instructors' experiences offering yoga to children and adolescents affected by cancer or blood disease could provide information to guide required competencies and training, as well as elucidate factors to consider in future research and programs. Therefore, the present study sought to understand yoga instructors' lived experiences preparing for and facilitating yoga for children and adolescents affected by cancer or blood disease. Fourteen yoga instructors with experience facilitating yoga for this population participated in semi-structured interviews, which were transcribed verbatim and analyzed using principles of interpretive description and thematic analysis. Five unique themes were identified: (1) "I believe in and see the perceived benefits of yoga on and off the mat"; (2) "I feel equipped to deliver yoga but desire further training"; (3) "what I need to deliver a safe yoga program"; (4) "I must be adaptable to successfully facilitate a yoga program"; and (5) "what I need to ensure yoga is widely available." Findings highlight the varied and comprehensive training opportunities yoga instructors sought, while elucidating their training limitations. Yoga instructors shared their perspectives on concerted attention to safety, effectiveness, and access when developing research and programs. This study represents a first step toward defining required competencies for delivering yoga to this population and lays the foundation for future research and programs.

17. **In-Silico Drug Toxicity and Interaction Prediction for Plant Complexes Based on Virtual Screening and Text Mining**

Int J Mol Sci. 2022 Sep 2;23(17):10056. doi: 10.3390/ijms231710056.

Authors

Feng Zhang [1 2], Kumar Ganesan [1 2], Yan Li [1 2], Jianping Chen [1 2]

Abstract

Potential drug toxicities and drug interactions of redundant compounds of plant complexes may cause unexpected clinical responses or even severe adverse events. On the other hand, super-additivity of drug interactions between natural products and synthetic drugs may be utilized to

gain better performance in disease management. Although without enough datasets for prediction model training, based on the SwissSimilarity and PubChem platforms, for the first time, a feasible workflow of prediction of both toxicity and drug interaction of plant complexes was built in this study. The optimal similarity score threshold for toxicity prediction of this system is 0.6171, based on an analysis of 20 different herbal medicines. From the PubChem database, 31 different sections of toxicity information such as "Acute Effects", "NIOSH Toxicity Data", "Interactions", "Hepatotoxicity", "Carcinogenicity", "Symptoms", and "Human Toxicity Values" sections have been retrieved, with dozens of active compounds predicted to exert potential toxicities. In *Spatholobus suberectus* Dunn (SSD), there are 9 out of 24 active compounds predicted to play synergistic effects on cancer management with various drugs or factors. The synergism between SSD, luteolin and docetaxel in the management of triple-negative breast cancer was proved by the combination index assay, synergy score detection assay, and xenograft model.

18. **The role of metabolic reprogramming in cancer metastasis and potential mechanism of traditional Chinese medicine intervention**

Biomed Pharmacother. 2022 Sep;153:113376. doi: 10.1016/j.biopha.2022.113376. Epub 2022 Jul 12.

Authors

Dong Wang [1], Fangyuan Wang [2], Xianbin Kong [3], Qingbo Li [4], Haoyang Shi [5], Shuang Zhao [6], Wen Li [7], Yu Li [8], Jingyan Meng [9]

Abstract

Metabolic reprogramming is one of the most prominent features underlying cancer cells progression and metastasis.Traditional Chinese medicine (TCM) has been widely used in the clinical treatment of cancer, with the advantages of multi-pathway, multi-target, multi-component anti-tumor pharmacological effects and low risk of adverse effects. However, the mechanisms underlying the anti-tumor effects of TCM are not fully understood, especially on cellular metabolic reprogramming. In this review, we summarize the role of glucose, lipid and amino acid metabolism in cancer metastasis, which is key in cancer cells and tumor micro-environment (TME) cell metabolism. Furthermore, we reviewed the potential mechanisms by which, most bioactive TCM compounds suppress cancer metastasis by regulating metabolic reprogramming and the possibility of sensitizing other anti-tumor drugs. TCM and its bioactive compounds have huge prospects for clinical application in the treatment of cancer metastasis. Unfortunately, little is currently known about the regulatory effects of Chinese herbal medicines and their bioactive compounds on the metabolic reprogramming of cancer cells and the combination therapy for cancers. This review provides novel insights into the regulation of

metabolic reprogramming by TCM in combination with other anti-tumor drugs against cancer metastasis and the possibility of becoming sensitizers for other anti-tumor drugs.

19. **Correlation between TCM Constitutional Types and Lung Carcinoma in Various Geographical Areas: A Systematic Review and Meta-Analysis**

Contrast Media Mol Imaging. 2022 Aug 17;2022:5660231. doi: 10.1155/2022/5660231. eCollection 2022.

Authors

Xinyu Yu [1], Lei Yan [2], Qin Lan [1], Lilin Wan [3], Jun Xiong [4], Leichang Zhang [5], Huyun Nie [6], Zhaohui Ding [3]

Abstract

Background: Lung carcinoma is a serious disorder that negatively influences the quality of life of sufferers. Despite the growing number of investigations into the management and prognosis of lung carcinoma, few research studies have been conducted to demonstrate the association between TCM constitution and lung carcinoma.

Methods: We searched PubMed, EMBASE, Science Net, Cochrane Library, China National Knowledge Infrastructure, VIP database, Wanfang database, and China Biomedical Literature Database for Chinese and English versions until January 31, 2021. We also manually searched for Chinese lung cancer, Chinese physical medicine, Chinese medical trial registries, and unpublished surveys or references. The literature was screened against inclusive and exclusive criteria, and two investigators' results were independently summarized. The primary outcome was a ratio of body type. Single-group rates were meta-analyzed using Stata 14.0 statistical software, bias was estimated by funnel plotting, and sources of heterogeneity were evaluated by subgroup and sensitivity examinations.

Results: 18 randomized controlled trials were totally included to compare the single-group ratio and 95% confidence interval of nine constitution types of lung cancer, namely, mild constitution (ES = 0.12, 95% CI (0.08, 0.15), $P < 0.0001$), Qi deficiency constitution (ES = 0.20, 95% CI (0.15, 0.26), $P < 0.0001$), Qi depression constitution (ES = 0.09, 95% CI (0.07, 0.12), $P < 0.0001$), damp-heat constitution (ES = 0.05, 95% CI (0.03, -0.06), $P < 0.0001$), phlegm dampness constitution (ES = 0.05, 95% CI (0.03, -0.06), $P < 0.0001$), special constitution (ES = 0.01, 95% CI (0.01, 0.02), $P=0.993$), blood stasis constitution (ES = 0.05, 95% CI (0.04, 0.07), $P < 0.0001$), Yang deficiency constitution (ES = 0.16, 95% CI (0.12, 0.19), $P < 0.0001$), and Yin deficiency constitution (MD = 0.15, 95% CI (0.11, 0.18), $P < 0.0001$).

Conclusion: This study showed that Qi deficiency, Yang deficiency, and Yin vacuity were the predominant types of physical conditions of lung cancer cases.

20. **Patient activation, self-efficacy and usage of complementary and alternative medicine in cancer patients**

Med Oncol. 2022 Sep 7;39(12):192. doi: 10.1007/s12032-022-01796-8.

Authors

Jutta Hübner [1], Saskia Welter [1], Gianluca Ciarlo [1], Lukas Käsmann [2 3], Emadaldin Ahmadi [1], Christian Keinki [4]

Abstract

Complementary and alternative medicine (CAM) is used by many cancer patients by themselves. Therefore, we conducted a survey regarding the association between CAM, self-efficacy, and patient activation in adult cancer patients. A standardized questionnaire, consisted of the ASKU, the PAM 13-D, and a structured questionnaire on CAM usage from our own working group, was distributed to 880 potential participants. Six hundred and thirty-nine (639) patients (male 32.9%, female 63.2%; gynecological cancer 41%, gastrointestinal 19.2%, urogenital 15.6%) took part. 60% of all patients used CAM in the last 3 months (biological 73%, holistic 63%, mind-body methods 62%). Higher self-efficacy was associated with higher interest in CAM ($p = 0.03$), but not usage of CAM, compared to patients with lower self-efficacy ($p = 0.099$). Higher patient activation was associated with higher interest in CAM ($p = 0.004$) and usage of CAM ($p = 0.012$). Patients with higher activation significantly more often used homeopathy ($p = 0.007$), prayer ($p = 0.002$), yoga, etc. ($p = 0.032$), meditation ($p = 0.002$), low carb or ketogenic diets ($p < 0.001$) (but not vegan or other cancer diets). Higher patient activation is associated with higher usage of CAM. Focusing on patient activation as a goal in patient-physician relationship will help patients to adhere to a healthy lifestyle and to actively participate in the whole treatment process.

21. **The Yin-Yang Dynamics in Cancer Pharmacogenomics and Personalized Medicine**

Methods Mol Biol. 2022;2547:141-163. doi: 10.1007/978-1-0716-2573-6_6.

Author

Qing Yan [1]

Abstract

The enormous heterogeneity of cancer systems has made it very challenging to overcome drug resistance and adverse reactions to achieve personalized therapies. Recent developments in systems biology, especially the perception of cancer as the complex adaptive system (CAS), may help meet the challenges by deciphering the interactions at various levels from the molecular, cellular, tissue-organ, to the whole organism. The ubiquitous Yin-Yang interactions among the coevolving components, including the genes and proteins, decide their spatiotemporal features

at various stages from cancer initiation to metastasis. The Yin-Yang imbalances across different systems levels, from genetic mutations to tumor cells adaptation, have been related to the intra- and inter-tumoral heterogeneity in the micro- and macro-environments. At the molecular and cellular levels, dysfunctional Yin-Yang dynamics in the cytokine networks, mitochondrial activities, redox systems, apoptosis, and metabolism can contribute to tumor cell growth and escape of immune surveillance. Up to the organism and system levels, the Yin-Yang imbalances in the cancer microenvironments can lead to different phenotypes from breast cancer to leukemia. These factors may be considered the systems-based biomarkers and treatment targets. The features of adaptation and nonlinearity in Yin-Yang dynamical interactions should be addressed by individualized drug combinations, dosages, intensities, timing, and frequencies at different cancer stages. The comprehensive "Yin-Yang dynamics" framework would enable powerful approaches for personalized and systems medicine strategies.

22. **A systematic study of traditional Chinese medicine treating hepatitis B virus-related hepatocellular carcinoma based on target-driven reverse network pharmacology**

Front Cell Infect Microbiol. 2022 Aug 15;12:964469. doi: 10.3389/fcimb.2022.964469. eCollection 2022.

Authors

Xiaofeng Yin [1], Jinchuan Li [1], Zheng Hao [1], Rui Ding [1], Yanan Qiao [2]

Abstract

Hepatocellular carcinoma (HCC) is a serious global health problem, and hepatitis B virus (HBV) infection remains the leading cause of HCC. It is standard care to administer antiviral treatment for HBV-related HCC patients with concurrent anti-cancer therapy. However, a drug with repressive effects on both HBV infection and HCC has not been discovered yet. In addition, drug resistance and side effects have made existing therapeutic regimens suboptimal. Traditional Chinese medicine (TCM) has multi-ingredient and multi-target advantages in dealing with multifactorial HBV infection and HCC. TCM has long been served as a valuable source and inspiration for discovering new drugs. In present study, a target-driven reverse network pharmacology was applied for the first time to systematically study the therapeutic potential of TCM in treating HBV-related HCC. Firstly, 47 shared targets between HBV and HCC were screened as HBV-related HCC targets. Next, starting from 47 targets, the relevant chemical components and herbs were matched. A network containing 47 targets, 913 chemical components and 469 herbs was established. Then, the validated results showed that almost 80% of the herbs listed in chronic hepatitis B guidelines and primary liver cancer guidelines were included in the 469 herbs. Furthermore, functional analysis was conducted to understand the biological processes and pathways regulated by these 47 targets. The docking results indicated that the top 50 chemical components bound well to targets. Finally, the frequency statistical analysis results showed the 469 herbs against HBV-related HCC were mainly warm in property, bitter in taste, and distributed to the liver meridians. Taken together, a small library of 913 chemical components and 469 herbs

against HBV-related HCC were obtained with a target-driven approach, thus paving the way for the development of therapeutic modalities to treat HBV-related HCC.

23. **Network Pharmacology and Molecular Docking Validation to Reveal the Pharmacological Mechanisms of Kangai Injection against Colorectal Cancer**

Biomed Res Int. 2022 Aug 21;2022:3008842. doi: 10.1155/2022/3008842. eCollection 2022.

Authors

Bo-Bo Zheng [1], Quan Wang [2], Yumin Yue [1], Jiang Li [3], Xiao-Jun Li [1], Xin Wang [4]

Abstract

Background: Kangai injection is a traditional Chinese medicine (TCM) mixed by extracts from astragalus, ginseng, and kurorinone with modern technology. It is a commonly used antitumor injection in China, but the mechanism of Kangai injection in the treatment of colorectal cancer (CRC) is still unclear. The purpose of this study is to explore the mechanism of Kangai injection against CRC using network pharmacology and molecular docking technology.

Methods: Targets of Kangai injection in CRC were predicted by SwissTargetPrediction and DisGeNET databases. Gene Ontology (GO) analysis and Kyoto Encyclopedia of Genes and Genomes (KEGG) were performed by using the DAVID database. A component-disease-target gene-pathway network was constructed by Cytoscape 3.8.0 software.

Results: 114 overlapping targets of Kangai injection and CRC were used to construct a PPI network, and the top 10 hub targets of Kangai injection were rated from high to low as *TP53*, *VEGFA*, *EGFR*, *TNF*, *ESR1*, *STAT3*, *HSP90AA1*, *HDAC1*, *AR*, and *MMP9*. The ingredient-target-disease interactive network was constructed, which included 22 compounds and 114 overlapping targets with 161 nodes and 707 edges. Entries of enrichment analysis were obtained based on *P* value (<0.05), which included 19 of GO-MF, 217 of GO-BP, 8 of GO-CC, and 13 KEGG. Molecular docking analysis showed that Kangai injection strongly interacted with top 10 hub target proteins.

Conclusion: Network pharmacology intuitively showed the multicomponent, multiple targets, and multiple pathways of Kangai injection in the treatment of CRC. The molecular docking experiment verified that compounds of Kangai injection had good binding ability with top 10 hub target proteins as well.

24. **Resveratrol-Mediated Gold-Nanoceria Synthesis as Green Nanomedicine for Phytotherapy of Hepatocellular Carcinoma**

Front Biosci (Landmark Ed). 2022 Jul 25;27(8):227. doi: 10.31083/j.fbl2708227.

Authors

Adel Ghorani-Azam [1], Javad Mottaghipisheh [2], Mohammad Sadegh Amiri [3], Mohammad Mashreghi [4], Alireza Hashemzadeh [4], Aliakbar Haddad-Mashadrizeh [5], Fahimeh Nourbakhsh [6], Mohabat Nadaf [3], Mohsen Qayoomian [7], Mohammad Ehsan Taghavizadeh Yazdi [7], Sara Vitalini [8], Marcello Iriti [9] [10]

Abstract

Background: In the present study, resveratrol was used to prepare complexes of cerium and nanoceria, also coated with gold (CeO2@Au core-shells) to improve the surface interactions in physiological conditions.

Methods: The CeO2@Au core-shells were characterized using powder X-ray diffraction (PXRD), Fourier transforms infrared spectroscopy (FTIR), transmission electron microscope (TEM) analysis, dynamic light scattering (DLS) and ζ potential.

Results: The experiment was led to the successful synthesis of nanosized CeO2@Au core-shells, although agglomeration of particles caused the distribution of the larger particles. The TEM analysis demonstrated the particles sizes ranged from 20 nm to 170 nm. Moreover, the PXRD analysis showed that both nanoceria and gold with the same crystal systems and space groups. To investigate the anticancer activity of the CeO2@Au core-shells, the cytotoxicity of the nanoparticles was investigated against liver cancerous cell lines (HepG2).

Conclusions: The results indicated biosynthesized NCs have significant cellular toxicity properties against HepG2 and could be utilized in hepatocarcinoma therapy. Further *in vivo* investigations is proposed to be designed to assess anti-cancer and safety effects of fabricated nanocomposites.

25. **The Society for Integrative Oncology: Two Decades of Global Leadership in Evidence-Based Integrative Health Care**

J Integr Complement Med. 2022 Sep;28(9):702-704. doi: 10.1089/jicm.2022.0660. Epub 2022 Aug 18.

Authors

Santosh Rao [1], Channing J Paller [2], Ana Maria Lopez [3], Jodi MacLeod [4], Ting Bao [5], Linda E Carlson [6]

No abstract available

26. **Impact of acupuncture and integrative therapies on chemotherapy-induced peripheral neuropathy: A multicentered, randomized controlled trial**

Cancer. 2022 Oct;128(20):3641-3652. doi: 10.1002/cncr.34422. Epub 2022 Aug 12.

Authors

Eran Ben-Arye [1 2], David Hausner [3 4], Noah Samuels [5], Dorit Gamus [3 6], Ofer Lavie [2 7], Tamar Tadmor [2 8], Orit Gressel [1 2], Abed Agbarya [1 9], Samuel Attias [10], Adi David [4], Elad Schiff [2 10]

Abstract

Background: To explore the impact of acupuncture with other complementary and integrative medicine (CIM) modalities on chemotherapy-induced peripheral neuropathy (CIPN) and quality of life (QoL) in oncology patients.

Methods: In this prospective, pragmatic, and patient-preference study, patients with CIPN were treated with acupuncture and CIM therapies (intervention group) or standard care alone (controls) for 6 weeks. Patients in the intervention arm were randomized to twice-weekly acupuncture-only (group A) or acupuncture with additional manual-movement or mind-body CIM therapies (group B). Severity of CIPN was assessed at baseline and at 6 weeks using the Functional Assessment of Cancer Therapy-Taxane (FACT-Tax) tool. Other QoL-related outcomes were assessed with the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC); and the Measure Yourself Concerns and Well-being questionnaire. Von Frey measurements examined perception thresholds.

Results: Of 168 participants, 136 underwent the study intervention (group A, 69; group B, 67), with 32 controls. Baseline-to-6-week assessment scores improved significantly in the intervention arm (vs controls) on FACT-Tax ($p = .038$) and emotional well-being ($p = .04$) scores; FACT-TAX scores for hand numbness/tingling ($p = .007$) and discomfort ($p < .0001$); and EORTC physical functioning ($p = .045$). Intervention groups A and B showed improved FACT-Tax physical well-being ($p < .001$), FACT-TAX total score ($p < .001$), FACT-TAX feet discomfort ($p = .003$), and EORTC pain ($p = .017$) scores.

Conclusions: Acupuncture, with or without CIM modalities, can relieve CIPN-related symptoms during oncology treatment. This is most pronounced for hand numbness, tingling, pain, discomfort, and for physical functioning.

27. **Cancer Survivors' Perspectives of Virtual Yoga for Chronic Chemotherapy-Induced Peripheral Neuropathy Pain During the COVID-19 Pandemic**

Comput Inform Nurs. 2022 Sep 1;40(9):641-647. doi: 10.1097/CIN.0000000000000937.

Authors

Robert Knoerl [1], Julianna Bockhoff, Erica Fox, Anita Giobbie-Hurder, Donna L Berry, Juliana Berfield, Jeffrey Meyerhardt, Alexi Wright, Jennifer Ligibel

Abstract

With the rise in telehealth due to the COVID-19 pandemic, further research is needed to determine how to optimize virtual delivery of existing integrative oncology interventions for cancer treatment-related symptoms. The purpose of this qualitative analysis was to explore cancer survivors' perspectives of the acceptability and satisfaction of an 8-week, virtual yoga intervention for cancer survivors with chronic chemotherapy-induced peripheral neuropathy pain. Fourteen participants with chronic chemotherapy-induced peripheral neuropathy pain who completed the virtual yoga intervention were interviewed using a semistructured interview guide. Themes were derived from the data using inductive content analysis methods. Main findings from the interviews included the following: (1) participants were willing to try new nonpharmacological treatments for chemotherapy-induced peripheral neuropathy due to the high symptom burden and prior lack of success with medications; (2) participants highly rated the flexibility offered by the virtual format, but desired the social support potentially offered by practicing in-person yoga; and (3) the impact of virtual yoga on chemotherapy-induced peripheral neuropathy severity was unclear. There were several barriers to participants' use of virtual yoga for chronic chemotherapy-induced peripheral neuropathy pain (eg, technology, lack of space/equipment). The results may be used to improve the design and delivery of future trials testing virtual yoga for chronic chemotherapy-induced peripheral neuropathy pain.

28. **A randomized controlled trial of scapular exercises with electromyography biofeedback in oral cancer patients with accessory nerve dysfunction**

Support Care Cancer. 2022 Oct;30(10):8241-8250. doi: 10.1007/s00520-022-07263-4. Epub 2022 Jul 11.

Authors

Yueh-Hsia Chen [1 2], Wei-An Liang [2], Chi-Rung Lin [2], Cheng-Ya Huang [3]

Abstract

Purpose: This study aims to investigate the effects of electromyography (EMG) biofeedback on scapular positions and muscle activities during scapular-focused exercises in oral cancer patients with accessory nerve dysfunction.

Methods: Twenty-four participants were randomly allocated to the motor-control with biofeedback group (N = 12) or the motor-control group (N = 12) immediately after neck dissection. Each group performed scapular-focused exercises with conscious control of scapular orientation for 3 months. EMG biofeedback of upper trapezius (UT), middle trapezius (MT), and lower trapezius (LT) was provided in the motor-control with biofeedback group. Scapular symmetry measured by modified lateral scapular slide test; shoulder pain; active range of motion (AROM) of shoulder abduction; upper extremity function; maximal isometric muscle strength of

UT, MT, and LT; and muscle activities during arm elevation/lowering in the scapular plane were evaluated at baseline and the end of the intervention.

Results: After the 3-month intervention, only the motor-control with biofeedback group showed improving scapular symmetry. Although both groups did not show significant improvement in shoulder pain, increased AROM of shoulder abduction and muscle strength of the UT and MT were observed in both groups. In addition, only the motor-control with biofeedback group had improved LT muscle strength, upper extremity function, and reduced UT and MT muscle activations during arm elevation/lowering.

Conclusions: Early interventions for scapular control training significantly improved shoulder mobility and trapezius muscle strength. Furthermore, by adding EMG biofeedback to motor-control training, oral cancer patients demonstrated greater effectiveness in stabilizing scapular position, muscle efficiency, and upper extremity function than motor-control training alone.

29. **Plant-derived bioactive compounds in colon cancer treatment: An updated review**

Biomed Pharmacother. 2022 Sep;153:113384. doi: 10.1016/j.biopha.2022.113384. Epub 2022 Jul 9.

Authors

Akanksha Esmeeta [1], Subhamay Adhikary [1], V Dharshnaa [2], P Swarnamughi [2], Z Ummul Maqsummiya [2], Antara Banerjee [2], Surajit Pathak [3], Asim K Duttaroy [4]

Abstract

Colon cancer is the third most predominant cancer caused by genetic, environmental and nutritional factors. Plant-based compounds are very well known to regress colon cancer in many ways, like delaying tumor growth, managing chemotherapy and radiation therapy side-effects, and working at the molecular levels. Medicinal plants contain many bioactive phytochemicals such as flavonoids, polyphenol compounds, caffeic acid, catechins, saponins, polysaccharides, triterpenoids, alkaloids, glycosides, phenols, quercetin, luteolin, kaempferol and luteolin glycosides, carnosic acid, oleanolic acid, rosmarinic acid, emodin, and eugenol and anthricin. These bioactive compounds can reduce tumor cell proliferation via several mechanisms, such as blocking cell cycle checkpoints and promoting apoptosis through activating initiator and executioner caspase. Traditional medicines have been used globally to treat cancers because of their anti-cancer effects, antioxidant properties, anti-inflammatory properties, anti-mutagenic effects, and anti-angiogenic effects. In addition, these medicines effectively suppress early and intermediate stages of carcinogenesis when administered in their active and pure form. However, traditional medicine is not very popular due to some critical challenges. These include poor solubility and absorption of these compounds, intellectual property-related issues, involvement of drug synergism, absence of drug-likeness, and unsure protocols for their extraction from the plant source. Using bioactive compounds in colon cancer has equal advantages and limitations.

This review highlights the benefits and challenges of using bioactive compounds derived from plants for colon cancer. We have also discussed using these compounds to target cancer stem cell self-renewal, its effects on cancer cell metabolism, safety parameters, easy modulation, and their bioavailability.

30. **Medicinal plants with anti-colorectal cancer bioactive compounds: Potential game-changers in colorectal cancer management**

Biomed Pharmacother. 2022 Sep;153:113383. doi: 10.1016/j.biopha.2022.113383. Epub 2022 Jul 9.

Authors

John M Macharia [1], Ruth W Mwangi [2], Nora Rozmann [3], Kaposztas Zsolt [3], Tímea Varjas [3], Paschal O Uchechukwu [3], Isabel N Wagara [2], Bence L Raposa [3]

Abstract

Development and identification of molecular compounds capable of killing or inhibiting transformed cells promoting carcinogenesis without inducing toxic effects to the normal cells are of utmost significance. A systematic review was conducted in screening for important literature was extensively performed by searching the Web of Science, Ovid, BMC Springer, Elsevier, Embase, and MEDLINE databases for optimum selectivity. Google Scholar was also used to supplement information. Pharmacotherapeutic biomolecules active against colon cancer carcinogenesis in Musa acuminata and Musa balbisiana (bananas), Punica granatum L (pomegranate), Glycine max (Soybean), Brassica oleracea L var. italica Plenck (Broccoli), and Hibiscus rosa-sinesis and Hibiscus sabdariffa (hibiscus) were evaluated. Signaling pathways like phosphatidylinositol 3-kinase (PI3K), mitogen-activated protein kinase (MAPK), protein kinase B (AKT), and nuclear factor-kappa B (NFκB) correlate the mediation of COX-2 expression. Increased levels of COX-2 are correlated with the occurrence and progression of colon cancer. Natural antioxidants in herbal plants including polyphenols and carotenoids inhibit the oxidation of lipids, proteins, and nucleic acids and thereby preventing the initiation of oxidizing chain reactions. These bioactive compounds should be considered an important dietary supplement.

31. **Electroacupuncture promotes apoptosis and inhibits axonogenesis by activating p75 neurotrophin receptor for triple-negative breast xenograft in mice**

J Chem Neuroanat. 2022 Oct;124:102133. doi: 10.1016/j.jchemneu.2022.102133. Epub 2022 Jun 29.

Authors

Yehong Tian [1], Xiaowei Qiu [2], Xuewei Qi [3], Zhenzhen Dong [3], Jianxin Zhao [3], Jinchang Huang [4], Xin Jiang [5]

Abstract

Purpose: The aim of this study was to investigate the anti-tumor effect of electroacupuncture (EA) on mice bearing breast tumors by regulating p75 neurotrophin receptor (p75NTR) and remodelling intratumoral innervation.

Methods: Female BALB/c mice were implanted with 4T1 breast tumor cells to establish a murine mammary cancer model. Tumor volume and weight were measured to evaluate tumor growth. Cell apoptosis was assessed by TUNEL assay. The relative expression of p75NTR, TrkA, TrkB, NGF and proNGF were detected by immunohistochemistry. Neurotransmitter and neurotrophin were detected by enzyme-linked immunosorbent assay. Intratumoral innervation was confirmed by β3-tubulin and TH labeling immunohistochemistry. The antagonist TAT-Pep5 was employed to determine if the effects of EA on tumor growth and cell apoptosis were mediated by p75NTR.

Results: Peritumoral EA alleviated tumor growth especially after 14 days of intervention. Apoptosis index in the tumor tissue was obviously decreased after EA. Meanwhile, EA intervention significantly upregulated the expression of p75NTR and proNGF, along with a decline in the tumor growth and an increase in the cell apoptosis. Besides, EA reduced local sympathetic innervation and downregulated sympathetic neurotransmitter NE level in the local tumor. Furthermore, p75NTR antagonist alleviated EA-mediated cell apoptosis and intratumoral innervation.

Conclusions: One mechanism of EA intervention for alleviating tumor progression is mediated by p75NTR to promote apoptosis and decrease intratumoral axonogenesis in the tumor microenvironment.

32. **Effect of Electroacupuncture Based on ERAS for Preoperative Anxiety in Breast Cancer Surgery: A Single-Center, Randomized, Controlled Trial**

Clin Breast Cancer. 2022 Oct;22(7):724-736. doi: 10.1016/j.clbc.2022.04.010. Epub 2022 Apr 30.

Authors

Qiu-Yu Tong [1], Ran Liu [2], Yuan Gao [1], Kun Zhang [1], Wen Ma [3], Wei-Dong Shen [4]

Abstract

Background: To evaluate the effect of electroacupuncture (EA) based on enhanced recovery after surgery on preoperative anxiety in patients undergoing breast cancer surgery.

Patients and methods: This was a single-center, randomized, controlled, single-blind clinical trial. Between December 2018 and 2019, 144 female undergoing breast conserving surgery were assigned to conventional (A), preoperative EA (B), intraoperative EA (C), and combination of preoperative and intraoperative EA (D) groups. Primary outcome was the self-rating anxiety scale. Secondary outcomes included visual analogue scale, quality of recovery 40, postoperative complications, and acupuncture-related adverse reactions.

Results: 141 patients completed the trial. Groups B and D self-rating anxiety scale were significantly lower than A and C ($P < .01$); the sleep quality was significantly better ($P < .01$). The incidence of nausea at 6 hours postoperatively was significantly lower in group D than other groups ($P < .007$); the incidence of vomiting at 6 hours postoperatively was better than group A ($P < .007$). visual analogue scale at 24 hours postoperatively was significantly different between groups A, B, and D ($P < .01$). Quality of recovery 40 total score at 24 hours postoperatively in group D was significantly higher than A and B ($P < .05$). The 72-hour postoperative emotional state was most significantly improved in group D ($P < .05$), while groups B and C showed interactive effect ($P < .05$).

Conclusion: Preoperative EA alleviated anxiety in the preoperative waiting area, and improved sleep quality. Combination of preoperative and intraoperative EA may be more effective in improving postoperative quality of life.

33. **Effect of Chaihu plus Longgu Muli decoction plus five-element music therapy in the treatment of cancer-related depression**

Support Care Cancer. 2022 Oct;30(10):7955-7962. doi: 10.1007/s00520-022-07172-6. Epub 2022 Jun 23.

Authors

Yinggi An [# 1], Zilin Liu [# 2], Shiya Wang [3], Qingxian Wang [4], Chaoyong Zhang [5], Limin Zhang [5], Ying Xu [5], Yuansen Ge [5], Meiyuan Zheng [5], Songming Zhang [5], Honggang Zheng [5], Qian Yu [5]

Abstract

Background: Ninety percent of tumour patients have negative emotions during or after anti-tumour treatment, resulting in depression. Western medicine antidepressants have many adverse reactions. Patients often discontinue antidepressants due to intolerance.

Aim: This study aims to observe the clinical effect of Chaihu plus Longgu Muli decoction with five-element music therapy in treating cancer-related mild and moderate depression.

Methods: A total of 120 patients with depression in the Oncology Department of Tangshan Hospital of Traditional Chinese Medicine, Hebei Province, from July 2017 to March 2019, were selected and randomly divided into the control and study groups (60 cases each) by the random

number table method. The study group was treated with Chaihu plus Longgu Muli decoction with five-element music therapy for depression. The control group was treated with escitalopram tablets. After three courses of treatment, the degree of depression, clinical efficacy, quality of life, serum norepinephrine (NE) and 5-hydroxytryptamine (5-HT) levels were observed.

Results: After treatment, the HAMD-24 (Hamilton Depression 24) scale scores of the study group (13.93 ± 6.32) were lower than the control group (19.04 ± 7.46), and the difference was statistically significant (x^2 = 4.048, p = 0.008). The total effective rate of the study group (93.33%) was higher than the control group (73.33%), and the difference was statistically significant (x^2 = 7.260, p = 0.000). After treatment, according to the QLQ-C30 (quality of life questionnaire) scale, the functional score of the study group was higher than the control group (p < 0.05), and the symptom score of the study group was lower than the control group (p < 0.05). After treatment, the serum NE and 5-HT levels in the study group were higher than the control group, and the difference was statistically significant (p < 0.05) (NE: 221.81 ± 31.14 vs 198.91 ± 29.97, t = 4.078, p = 0.000; 5-HT: 141.41 ± 20.35 vs 125.32 ± 14.58, t = 5.781, p = 0.000).

Conclusion: Chaihu plus Longgu Muli decoction with five-element music therapy can effectively alleviate patients' cancer-related depression and improve their quality of life, which is worthy of promotion.

34. **Potential mechanisms of *Pyrrosiae Folium* in treating prostate cancer based on network pharmacology and molecular docking**

Drug Dev Ind Pharm. 2022 May;48(5):189-197. doi: 10.1080/03639045.2022.2088785. Epub 2022 Aug 5.

Authors

Wen-Hua Guo [1] [2], Kun Zhang [2], Lu-Hong Yang [1]

Abstract

Objective: The network pharmacology approach and molecular docking were employed to explore the mechanism of *Pyrrosiae Folium* (PF) against prostate cancer (PCa).

Methods: The active compounds and their corresponding putative targets of PF were identified by the Traditional Chinese Medicine Systems Pharmacology (TCMSP), the gene names of the targets were obtained from the UniProt database. The collection of genes associated with PCa was obtained from GeneCards and DisGeNET database. We merged the drug targets and disease targets by online software, Draw Venn Diagram. The resulting gene list was imported into R software (v3.6.3) for GO and KEGG function enrichment analysis. The STRING database was utilized for protein-protein interaction (PPI) network construction. The cytoHubba plugin of

Cytoscape was used to identify core genes. Further, molecular docking analysis of the hub targets was carried out using AutoDock Vina software (v1.5.6).

Results: A total of six active components were screened by PF, with 167 corresponding putative targets, 1395 related targets for PCa, and 113 targets for drugs and diseases. The 'drug-component-disease-target' network was constructed by Cytoscape software and the target genes mainly involved in the complex treating effects associated with response to oxidative stress, cytokine activity, pathways in cancer, PCa pathway, and tumor necrosis factor (TNF) signaling pathway. Core genes in the PPI network were TNF, JUN, IL6, IL1B, CXCL8, RELA, CCL2, TP53, IL10, and FOS. The molecular docking results reveal the better binding affinity of six active components to the core targets.

Conclusion: The results of this study indicated that PF may be have a certain anti-PCa effect by regulating related target genes, affecting pathways in cancer, TNF signaling pathway, and hepatitis B signaling pathway.

35. **The Provision of Complementary, Alternative, and Integrative Medicine Information and Services: a Review of World Leading Oncology Hospital Websites**

Curr Oncol Rep. 2022 Oct;24(10):1363-1372. doi: 10.1007/s11912-022-01296-y. Epub 2022 May 31.

Authors

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Abstract

Background: Many cancer patients use complementary, alternative, and integrative medicine (CAIM) to improve their psychological and functional health. However, there is little known about the extent of CAIM information and services provided on oncology hospital websites.

Methods: This study reviewed public-facing websites to determine the degree of CAIM information provided and services offered by the world's leading cancer hospitals in 2021; this ranking was informed by a large survey of medical professionals led by Newsweek and Statista. Nine authors extracted data from hospital websites individually and in triplicate, prior to meeting to revise data extractions. Data analysis was then performed by two authors to determine how many hospitals provided CAIM descriptions and offered CAIM services, and the extent of CAIM information provided.

Results: A total of 131 hospitals were included in this study. Of the eligible hospitals, 50.38% (n = 66) provided a theoretical description of CAIM; 48.09% (n = 63) provided a description of one or

more CAIM therapies; 63.36% (n = 83) offered one or more CAIM therapies to cancer patients. The most common therapies described were the same as the most common therapies offered. These therapies are massage, special foods and diets, acupuncture, meditation, yoga, and creative outlets. While CAIM therapies were commonly offered, information surrounding the benefits and side effects associated with these therapies varied.

Conclusions: Due to the lack of CAIM standardization worldwide, there is a need for increased CAIM information provision on hospital websites to better inform and empower patients to make well-informed decisions about their health.

36. **Isolation and Phytochemical Screening of Endophytic Fungi Isolated from Medicinal Plant Mappia foetida and Evaluation of Its In Vitro Cytotoxicity in Cancer**

Appl Biochem Biotechnol. 2022 Oct;194(10):4570-4586. doi: 10.1007/s12010-022-03929-1. Epub 2022 May 10.

Authors

Pooja Ravi [1], Prathap Somu [2 3], Diptikanta Acharya [4], Levin Anbu Gomez [5], Jesse Joel Thathapudi [5], Yerappa Lakshmikanth Ramachandra [1], Sunitha Bommanahalli Rudraiah [1], Mona Isaq [1], Chetan Shekhar Karua [6], Mohammed Arifullah [7], Chandrappa Chinna Poojari [8], Yong Rok Lee [9]

Abstract

Isolated endophyte fungi from Mappia foetida have been explored as a potential source for the mass production of anticancer drug lead compounds in the current study. Since medical plants are not feasible economically for mass production of bioactive pharmaceutical important molecules using plant tissue culture due to factors like media design and fungal contamination, endophyte fungal mass culture have been an alternative for the relatively easy and inexpensive production. Two endophytic fungi isolated, Alternaria alternata and Fusarium species were mass cultured and their prepared alcoholic extract subjected to standard procedures to identify the phytochemical screening by gas chromatography-mass spectrometry (GCMS), high-performance liquid chromatography (HPLC), UV visible spectrophotometry (UV-VIS), and Fourier transform infrared spectroscopy (FTIR). GC-MS analysis revealed the presence of three major compounds in the extracts. The phytochemical screening confirmed the presence of an anticancer compound (camptothecin) in their extract. Moreover, the dose-dependent anticancer activity of ethanol extract was demonstrated against cervical carcinoma (HeLa), breast carcinoma (MCF-7), non-small cell lung carcinoma (H1975), and hepatocellular carcinoma cell line (Hep G2) by MTT assay where doxorubicin was used as the positive control. Furthermore, the microscopic examination also confirmed the cytotoxic effect of extract of endophytic fungi Alternaria alternata and Fusarium species against tested cancer cells. Hence, endophytic fungi Alternaria alternata and

Fusarium species might be exploited for mass production of phytochemicals having anticancer activity.

37. **Amplified Cardiopulmonary Recordings: Music Therapy Legacy Intervention with Adult Oncology Patients and Their Families-A Preliminary Program Evaluation**

J Palliat Med. 2022 Sep;25(9):1409-1412. doi: 10.1089/jpm.2022.0017. Epub 2022 Apr 26.

Authors

Brian Schreck [1 2], Joanne Loewy [3 4], Renato V LaRocca [5], Elizabeth Harman [6], Elizabeth Archer-Nanda [1]

Abstract

Background: Amplified cardiopulmonary recording (ACPR) is a unique music therapy intervention implementing recorded heartbeats with meaningful music. Although its clinical application has grown, there is limited research on the acceptability and usage by bereaved families. ***Objective:*** The research objective was to understand the frequency recipients engaged with ACPR after their loved one died. ***Design:*** A survey was undertaken with relatives of 191 adult patients who had participated in ACPR. ***Setting/Subjects:*** Bereaved loved ones of adult oncology patients who received care at the Norton Cancer Institute in Louisville, Kentucky, USA. ***Results:*** Out of the 191 participants, 73% of family members responded, 49% reported listening to their recording frequently, 31% listened to the recording at least once after receiving it, and 20% reported never listening. ***Conclusions:*** ACPR appears to have moderate acceptability and usage among bereaved family members, especially when created in the context of ongoing music therapy treatment. We recommend that this process-based music therapy intervention be studied further and offered proactively.

38. **Medicinal Plants in Cancer Treatment: Contribution of Nuclear Factor- Kappa B (NF-kB) Inhibitors**

Mini Rev Med Chem. 2022;22(15):1938-1962. doi: 10.2174/1389557522666220307170126.

Authors

Rina Das [1], Dinesh Kumar Mehta [1], Meenakshi Dhanawat [1]

Abstract

Nuclear factor-kappa B (NF-κB) is one of the principal inducible proteins and a predominant transcription factor that is known to control gene expression in mammals. It plays a pivotal role in regulating cell signalling in the body under certain physiological and pathological conditions. In

cancer cells, such as colon, breast, pancreatic, ovarian, melanoma, and lymphoma, the NF-κB pathway is active. In cellular proliferation, promoting angiogenesis, invasion, metastasis of tumour cells, and blocking apoptosis, the constitutive activity of NF-κB signalling has been reported. Therefore, immense attention has been given to developing drugs targeting NF-κB signalling pathways to treat many types of tumours. They are a desirable therapeutic target for drugs, and many studies have concentrated on recognizing compounds. They may be able to reverse or standstill the growth and spread of tumours that selectively interfere with this pathway. Recently, numerous substances derived from plants have been evaluated as possible inhibitors of the NF-κB pathway. These include various compounds, such as flavonoids, lignans, diterpenes, sesquiterpenes, polyphenols, etc. A study supported by folk medicine demonstrated that plant-derived compounds could suppress NF-κB signalling. Considering this, the present review revealed the anticancer potential of naturally occurring compounds that inhibit the NF-κB signalling and suppress the growth and spread of cancer.

39. **Supportive therapy and complementary medicine in renal cell carcinoma**

World J Urol. 2022 Oct;40(10):2359-2371. doi: 10.1007/s00345-021-03885-1. Epub 2021 Nov 25.

Authors

M Johannsen [1], C Stoll [2], M Raida [3], B van Oorschot [4], A Flörcken [5]

Abstract

Purpose: As part of the German interdisciplinary S3-guideline "Diagnosis, Treatment and Followup of Renal Cell Carcinoma", this article aimes to provide guidance regarding the use of supportive therapy and complementary medicine in patients with advanced or metastatic renal cell carcinoma.

Methods: The German interdisciplinary S3-guidelines are national clinical practice guidelines that implement the highest methodological quality of evidence-based medicine. Recommendations and evidence-based statements are provided according to available evidence.

Results: Supportive and palliative care are important areas of tumor treatment and require knowledge on the management of a variety of issues. This article outlines the management of tumor-related symptoms such as pain, undesired treatment-related effects, palliative care and end-of-life care in patients with renal cell carcinoma.

Conclusion: Patients with advanced or metastatic renal cell carcinoma should have access to supportive and palliative care according to their individual needs. There is very limited evidence regarding the impact of complementary medicine for the treatment of patients with renal cell carcinoma.

40. **Self-efficacy in relation to the use of complementary and alternative medicine, lifestyle choices and cancer aetiology**

J Cancer Res Clin Oncol. 2022 Oct;148(10):2707-2715. doi: 10.1007/s00432-021-03857-3. Epub 2021 Nov 23.

Authors

Lena Josfeld [1], Lara Krüger [2], Jens Büntzel [3], Bijan Zomorodbakhsch [4], Jutta Hübner [2]

Abstract

Purpose: This survey assesses cancer patients' etiological concepts, lifestyle choices, use of complementary and alternative medicine (CAM), and self-efficacy, as well as associations between those. It aims to find patterns which may facilitate communication and understanding between patients and physicians.

Methods: 353 oncological patients attending lectures on CAM answered a questionnaire. Correlations were examined and an exploratory factor analysis conducted to identify comprehensive lay-etiological concepts among a list of potential carcinogenic factors.

Results: Patients considered scientifically proven agents as well as other non-carcinogenic influences to be responsible for their disease. An exploratory factor analysis yielded vague indications of possible underlying concepts but factors tend to include items that do not fit the pattern in terms of content. Higher self-efficacy correlated with healthy diet and sports, but not with use of CAM. No conclusive correlations emerged between lay-aetiological concepts and most other variables, but we found a tendency for higher self-efficacy among patients who assigned higher carcinogenic effects to tobacco and lower carcinogenic effects to fasting and physical trauma.

Conclusion: Interest in CAM can arise for many reasons that are not necessarily related to self-efficacy. Lay-aetiological concepts of cancer differ significantly from scientific ones. They are complex and presumably highly individualistic. Their connection to use of CAM methods, lifestyle choices and self-efficacy should be explored in more detail. Patient information and communication with clinicians need to address cancer patients' individual aetiological concepts to further patient's understanding not only of their diagnosis but also of the treatment as well.

41. **Polycystic Ovarian Syndrome Treated with Individualized Homeopathy: A Case Report**

Altern Ther Health Med. 2022 Sep;28(6):60-64.

Authors

Preeti Lamba, Dharmendra Sharma, Vineet V Sinnarkar

Abstract

Introduction: Polycystic ovarian syndrome (PCOS) is a polygenic, multifactorial, syndromic disorder with reproductive, endocrine, and metabolic dysfunction seen in reproductive aged women (12-45 years). The exact cause is not known may involve increased luteinizing hormone, increased insulin levels, and a defect in androgen synthesis. The symptoms include anovulation, irregular menses, and hyperandrogenism. It is clinically manifested by hirsutism, acne, and androgenic alopecia. Health care practitioners continue to seek a cure for PCOS as it is increasing in frequency and is one of the major causes of anovulatory infertility.

Methods: The case was recorded in the gynaecological department at the Homoeopathic Medical College and Research Centre. An 18- year-old female patient with PCOS was treated with individualised homeopathy (iHOM) medicine between 26th September 2019 and 26th November 2020. During the follow-up visits, treatment outcomes were assessed. To assess whether the changes were due to homoeopathic medicine, an assessment using the modified Naranjo criteria was performed.

Results: Over an observational period of 1 year, beneficial result from iHOM medicine was seen. This treatment method can be used by the physicians in the treatment of PCOS as a complementary health practice.

Conclusion: Considering the multi-factorial aetiology of PCOS, iHOM medicine with lifestyle modification is helpful in treating PCOS.

42. **Feasibility of a yoga, aerobic and stretching-toning exercise program for adult cancer survivors: the STAYFit trial**

J Cancer Surviv. 2022 Oct;16(5):1107-1116. doi: 10.1007/s11764-021-01101-y. Epub 2021 Aug 28.

Authors

Neha P Gothe [1 2], Emily Erlenbach [3]

Abstract

Background: The use of yoga as a mind-body practice has become increasingly popular among clinical populations and older adults who use this practice to manage age and chronic disease-related symptoms. Although yoga continues to gain popularity among practitioners and researchers, pilot studies that examine its feasibility and acceptability, especially among cancer survivors, are limited. Feasibility studies play a critical role in determining whether the target population is likely to engage with larger scale efficacy and effectiveness trials. In this paper we

present feasibility and acceptability data from a 12-week randomized controlled trial (RCT) conducted with adult cancer survivors.

Methods: Participants n = 78 (Mean age: 55 years) were randomized to one of three groups: a Hatha yoga, aerobic exercise, or stretching-toning control group with group exercise classes held for 150 min/week for 12 weeks. Herein we report feasibility and acceptability, including enrollment rates, attendance, attrition and adverse events, and participant feedback and satisfaction data.

Results: Of the 233 adults screened, 109 were eligible and 78 randomized to one of the three intervention arms. Session attendance was high for all groups (75.5-89.5%) and 17 participants dropped out during the 12-week intervention. Program satisfaction was high (4.8 or higher out of 5) and no adverse events were reported. One cohort (n = 15) of the intervention transitioned to remote intervention delivery due to the COVID-19 pandemic. Feasibility data from these participants suggested that synchronized group exercise classes via Zoom with a live instructor were acceptable and enjoyable. Participant feedback regarding most and least helpful aspects of the program as well as suggestions for future yoga interventions are summarized.

Conclusions: Overall, the yoga intervention was highly feasible and acceptable. The feasibility parameters from this trial can aid researchers in estimating recruitment rates for desired sample sizes to successfully randomize and retain cancer survivors in short- and long-term yoga-based efficacy and effectiveness trials. The findings also provide evidence to clinicians who can recommend up to 150 min of a combination of exercises-aerobic, yoga, or stretching-toning to their cancer patients in order to improve health and wellbeing during cancer survivorship.

43. **Patient-centred, self-administered acupressure for Chinese advanced cancer patients experiencing fatigue and co-occurring symptoms: A pilot randomised controlled trial**

Eur J Cancer Care (Engl). 2022 Sep;31(5):e13314. doi: 10.1111/ecc.13314. Epub 2020 Sep 7.

Authors

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Abstract

Objectives: To evaluate the feasibility and potential effects of patient-centred self-administered acupressure for alleviating fatigue and co-occurring symptoms among Chinese advanced cancer patients receiving treatment.

Methods: Thirty advanced cancer patients who screened positive for moderate/severe fatigue with symptoms of insomnia and/or pain were recruited from a hospital in Hong Kong. They were randomly assigned (1:1) to receive a 4-week patient-centred self-administered acupressure

intervention or health education. Fatigue (primary outcome) and secondary outcomes (sleep quality, pain, fatigue-sleep disturbance-pain symptom cluster severity, anxiety, depression and quality of life) were measured by questionnaires and actigraphy.

Results: Twenty-four participants (80%) completed the study. Adherence to self-administered acupressure practice was satisfactory, with all retained participants attending all sessions and 90.9% practising acupressure daily. All completers rated the class as very enjoyable or quite enjoyable. Fatigue, pain, symptom cluster severity, anxiety, depression and quality of life appeared to improve from baseline to post-intervention in the intervention group. Among these outcomes, only the between-group difference in anxiety post-intervention was significant. The group × time interaction effect was nonsignificant for all outcomes.

Conclusions: Patient-centred self-administered acupressure appears to be feasible and acceptable among advanced cancer patients. A fully powered trial is warranted to confirm the intervention effect.