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1. [Traditional herbal medicine combined with first-line platinum-based chemotherapy for advanced non-small-cell lung cancer: A PRISMA-compliant systematic review and meta-analysis](#)

Medicine (Baltimore). 2021 Sep 17;100(37):e27163. doi: 10.1097/MD.00000000000027163.

Authors

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Abstract

Background: Non-small-cell lung cancer (NSCLC) is a major health burden in many countries. This review aimed to evaluate the efficacy of traditional herbal medicine (THM) combined with first-line platinum-based chemotherapy (PBCT) for the treatment of advanced NSCLC.

Methods: From inception to April 2021, relevant studies were retrieved from 9 electronic databases. Randomized controlled trials (RCTs) comparing survival outcomes of THM + PBCT treatment with PBCT treatment in patients with advanced NSCLC were reviewed. The risk of bias was evaluated using the Cochrane Risk of Bias Tool. Overall survival, 1-year survival, progression-free survival or time to progression, tumor response rate, and adverse effects were analyzed.

Results: Sixteen RCTs comprising 1445 patients were included. The meta-analysis indicated that THM + PBCT treatment, compared to PBCT alone, could improve overall survival (median survival ratio = 1.24, 95% confidence intervals [CI] [1.11, 1.39], $P < .001$), progression-free survival/time to progression (median survival ratio = 1.22, 95% CI [1.09, 1.37], $P < .001$), and the 1-year survival rate (risk ratio [RR] = 1.56, 95% CI [1.31, 1.86], $P < .001$). THM + PBCT also led to a higher tumor response rate (RR = 1.39, 95% CI [1.22, 1.59], $P < .001$) and lower incidence of thrombocytopenia (RR = 0.72, 95% CI [0.56, 0.92], $P = .009$) and nausea/vomiting (RR = 0.35, 95% CI [0.21, 0.57], $P < .001$), while there was no significant effect observed on leukopenia (RR = 0.68, 95% CI [0.34, 1.36], $P = .27$).

Conclusion: THM, when used in combination with PBCT, might increase survival and the tumor response rate while decreasing the side effects caused by chemotherapy in patients with advanced NSCLC. However, considering the limited methodological qualities of the included trials, more rigorous RCTs are needed.

2. [Efficacy and safety of acupuncture combined with Chinese herbal medicine in the treatment of primary liver cancer: A protocol for systematic review and meta-analysis](#)

Medicine (Baltimore). 2021 Oct 8;100(40):e27497. doi: 10.1097/MD.00000000000027497.

Authors

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No abstract is available.

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3. [Acupuncture against chronic postsurgical pain in non-small cell lung cancer patients: A protocol of randomized controlled trial](#)

Medicine (Baltimore). 2021 Oct 8;100(40):e27461. doi: 10.1097/MD.00000000000027461.

Authors

[Gang Li](#)¹, [Changxi Zhang](#), [Congyi Wang](#), [Ling Xiao](#)

Abstract

Introduction: Video-assisted thoracoscopic lobectomy is the prior recommended treatment for non-small cell lung cancer (NSCLC), with the advantages of small trauma, less postoperative pain, and quick recovery. However, a large number of patients may suffer chronic postsurgical pain (CPSP), which makes the patients unwilling to practice pulmonary exercises, and it would directly affect patient's cough, sputum expectoration, and mobility. Opioids could greatly improve the quality of postoperative analgesia and the quality of life after surgery, but it is accompanied with obvious side effects. A number of clinical studies have proved that acupuncture could improve postoperative pain and reduce opioid use. In this study, we try to conduct a randomized controlled study to evaluate the efficacy and safety of plum-blossom needle acupuncture combined with Tramadol in improving CPSP after lobectomy in NSCLC patients.

Methods: Patients will be randomly divided into treatment group (acupuncture plus Tramadol) and control group (sham acupuncture plus Tramadol) with a random number table in 1:1 ratio. The patients, outcome assessor, and statistician will be blinded. The outcomes are changes of numerical rating scale, Karnofsky performance score, brief pain inventory, blood routine, liver and kidney function. The data will be analyzed by SPSS 22.0.

Conclusions: The results will help to evaluate the efficacy and safety of plum-blossom needle acupuncture in improving CPSP after lobectomy in NSCLC patients.

4. [Use of complementary and alternative medicine in patients with cancer and their relationship with health behaviours - Cross-sectional study](#)

Ann Agric Environ Med. 2021 Sep 16;28(3):475-482. doi: 10.26444/aaem/140165. Epub 2021 Aug 19.

Authors

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Abstract

Introduction and objective: Although the use of complementary and alternative medicine (CAM) is common with Polish cancer patients, little is known about cancer patients' methods of using CAM and how it correlates with their health behaviour. The aim of the study was to determine the scope of application of complementary and alternative medicine methods among patients treated by oncology and to compare the health behaviours of patients who use alternative medicine with those who do not use these methods.

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Material and methods: The studies were conducted from August 2019 - January 2020 in an Oncology Centre in south-eastern Poland. A cross-sectional study was conducted in a group of 208 oncological patients. The authors' own questionnaire and the standardized Health Behaviour Inventory were used.

Results: Most of the patients (85.09%) declared that they used complementary and alternative medicine methods. 45.19% of the respondents had a high rate of health behaviours. It was observed that there was no communication related to the use of CAM among the patients and healthcare staff. Patients using CAM demonstrated more positive health behaviours than those who were not using these methods ($p < 0.001$).

Conclusions: The majority of the surveyed patients suffering from cancer used complementary and alternative medicine and declared that it was very or slightly effective in strengthening the immune system and helpful in fighting cancer. The patients who used CAM exhibited a higher level of health behaviours than those who did not use these methods.

5. [Feasibility of Aerobic Exercise and Tai-Chi Interventions in Advanced Lung Cancer Patients: A Randomized Controlled Trial](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211033352. doi: 10.1177/15347354211033352.

Authors

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Abstract

Background: A majority of lung cancer patients are diagnosed at advanced stages. Although there is considerable evidence of the benefits of aerobic exercise and tai-chi for lung cancer patients, little is known about the comparative effectiveness of the 2 exercise modes in advanced lung cancer patients.

Objectives: To explore the feasibility and preliminary effects of aerobic exercise and tai-chi interventions on survival and well-being among advanced lung cancer patients.

Methods: In an assessor-blinded, exploratory randomized controlled trial, 30 advanced lung cancer patients were randomized to an aerobic exercise group, a tai-chi group (both attending 12-week, twice-weekly supervised sessions), or a self-management control group (receiving written exercise guidelines). The primary outcomes focused on feasibility including intervention completion, exercise adherence, and adverse events, while the secondary outcomes addressed preliminary effects and included 1-year survival, cancer symptoms (Pittsburgh Sleep Quality Index, Hospital Anxiety and Depression Score, Brief Fatigue Inventory), quality of life (EORTC QLQ-C30, QLQ-LC13), physical performance (6-minute walk test, up-and-go, sit-to-stand, 1-leg standing), activity levels (actigraph), and circadian rhythms (salivary cortisol).

Results: Intervention feasibility was established with a satisfactory completion rate at post-intervention for the aerobic exercise group (80%) and the tai-chi group (78%). The tai-chi group attained higher adherence than the exercise group in terms of attendance in supervised sessions (89% vs 75% of scheduled classes) and self-practice (225% vs 87% of the prescribed amount). Higher adherence to self-

practice in the tai-chi group remained at the 6-month follow-up (81% vs 38% of the prescribed amount). No adverse event as a result of the intervention was reported. Effect-related outcomes did not show statistically significant changes in any group, except an improvement post-intervention in the up-and-go (-2.26, 95% CI: -4.04, -0.48) and sit-to-stand tests (4.52, 95% CI: 2.19, 6.85) in the aerobic exercise group.

Conclusions: The findings support the feasibility of aerobic exercise and tai-chi interventions in advanced lung cancer patients. A future study with a larger sample from multiple sites is recommended to confirm the comparative effects of the 2 exercise interventions relative to the self-management group and to enhance the generalizability of the findings.

Trial registration: ClinicalTrials.gov [NCT03482323](https://clinicaltrials.gov/ct2/show/study/NCT03482323).

6. [Effects of Acupuncture and Moxibustion on Breast Cancer-Related Lymphedema: A Systematic Review and Meta-Analysis of Randomized Controlled Trials](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211044107. doi: 10.1177/15347354211044107.

Authors

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Abstract

Objective: The aim of this systematic review and meta-analysis of randomized controlled trials (RCTs) was to evaluate the effects of acupuncture and moxibustion (AM) in women with breast cancer-related lymphedema (BCRL).

Methods: We retrieved RCTs published before January 24, 2021, from the MEDLINE, EMBASE, Cochrane Library, Web of Science, China National Knowledge Infrastructure (CNKI), Chongqing VIP (VIP), and Wanfang databases. RCTs that compared acupuncture and/or moxibustion intervention with other treatments were included. A random effects or fixed effects model was used based on the heterogeneity findings. Study quality was evaluated using the Cochrane risk of bias tool.

Results: We included 14 RCTs in the analyses, of which 4 RCTs adopted acupuncture, 4 RCTs used moxibustion, and the rest used both. AM significantly reduced arm circumference at the elbow crease compared to routine care (Mean deviation (MD) = -7.26, 95% confidence interval (CI) = -8.30 to -6.21, $P < .00001$). There was a significant difference between AM and diosmin tablets in the effective index for upper limb lymphedema (MD = 24.68, 95% CI = 24.82-30.53, $P < .00001$), the range of motion of the shoulder during protraction (MD = 6.77, 95% CI = 2.81-10.73, $P = .0008$), and adduction (MD = 4.17, 95% CI = 1.02-7.32, $P = .01$). There was a significant difference between moxibustion and pneumatic circulation (MD = -0.51, 95% CI = -0.85 to -0.17, $P = .003$) in the visual analog score (VAS) for swelling. Finally, compared to the blank control, acupuncture reduced the VAS for pain (MD = -1.33, 95% CI = -1.52 to -1.15, $P < .00001$; heterogeneity (I^2) = 0%, $P = .57$).

Conclusion: Our results suggest that AM is effective in the treatment of BCRL. AM may reduce arm circumference at the elbow crease (compared to routine care), increase effective index for upper limb lymphedema (compared to oral diosmin tablets), improve the range of motion of the shoulder during

protraction and adduction (compared to oral diosmin tablets), and decrease the VAS for both swelling (compared to pneumatic circulation) and pain (compared to blank control).

7. [Chinese Herbal Medicine to Reduce Radiation-Induced Oral Mucositis in Head and Neck Cancer Patients: Evidence From Population-Based Health Claims](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211044833. doi: 10.1177/15347354211044833.

Authors

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Abstract

Background: Subjects with head and neck cancer (HNC) often experience post-treatment side effects, particularly radiation-induced oral mucositis (RIOM). This study aimed to explore the association of Chinese herbal medicine use with the sequent risk of RIOM among them.

Methods: This cohort study used a nationwide health insurance database to identify subjects newly diagnosed with HNC, aged 20 to 60 years, who received treatment between 2000 and 2007. Among them, a total of 561 cases received CHM after HNC onset (CHM users); the remaining 2395 cases were non-CHM users. All patients were followed to the end of 2012 to identify any treatment for RIOM as the end point. Cox proportional hazards regression was used to compute the adjusted hazard ratio (aHR) of RIOM by CHM use.

Results: During the follow-up period, 183 CHM users and 989 non-CHM users developed RIOM at incidence rates of 40.98 and 57.91 per 1000 person-years, respectively. CHM users had a lower RIOM risk than the non-CHM users (aHR: 0.68; 95% Confidence Interval: 0.58-0.80). The most potent effect was observed in those taking CHM for more than 1 year. Use of Baizhi, Danshen, Shao-Yao-Gan-Cao-Tang, Gan-Lu-Yin, Huangqin, Shu-Jing-Huo-Xue-Tang, and Xin-Yi-Qing-Fei-Tang, was significantly related to a lower risk of RIOM.

Conclusion: Findings of this study indicated that adding CHM to conventional clinical care could be helpful in protecting those with HNC against the onset of RIOM. Further clinical and mechanistic studies are warranted.

8. [Assessment of the Cytotoxic Activity of Triphala: A Semisolid Traditional Formulation on HepG₂ Cancer Cell Line](#)

Biomed Res Int. 2021 Aug 11;2021:6689568. doi: 10.1155/2021/6689568. eCollection 2021.

Authors

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Abstract

Cancer chemotherapies may result in resistance, and therefore, contemporary treatments including natural products may find an increasing consideration. As per Persian medicine (PM), many natural products have been used for malignant and chronic diseases. Triphala, with a combination of *Terminalia chebula* Retz., *Terminalia bellirica* Retz., *Phyllanthus emblica* L., and honey, is a multi-ingredient traditional formulation attributed to anticancer activities in PM. This study is aimed at evaluating the cytotoxic activity of this preparation on HepG₂, the human liver cancer cell line. Hydroalcoholic extracts were prepared from the formulation and its components. Compared with the control and Cisplatin, the extracts were tested using MTT assay at different concentrations. All concentrations of the preparation, as well as Cisplatin, were effective significantly against HepG₂ cells. All extract preparations at multiple concentrations were significantly effective as evidenced by MTT assay when compared to the control group. The IC₅₀ level for Triphala extract was 77.63 ± 4.3 µg/ml. Based on the results, Triphala and its components have cytotoxic activity on the HepG₂ cancer cell line and they can reduce the survival rate significantly.

9. [The Case of Billy Best: 25 Years Later](#)

Pediatrics. 2021 Sep;148(3):e2020038299. doi: 10.1542/peds.2020-038299. Epub 2021 Aug 19.

Authors

[Jonathan M Marron](#)^{1 2 3 4}, [Zamina Mithani](#)⁵, [Elaine C Meyer](#)^{6 4}

Abstract

Billy Best was diagnosed with Hodgkin lymphoma in 1994 at age 16 and became well-known when he ran away from home to avoid receiving further chemotherapy. His story became national news when, with the support of his adopted parents, he returned home and opted to use complementary and alternative medicine (CAM) instead of standard chemotherapy and radiation for his cancer treatment. Now 25 years since Billy Best entered the public eye, his story is one that is frequently referenced in pediatrics, bioethics, and other related fields. Here, the authors examine the evolution of various features of this case, including treatment of Hodgkin lymphoma, the interplay between medicine and the media, the role of CAM in pediatric care, navigating entrenched disagreements and how best to integrate adolescents into health care decision-making, and the role of narrative in medical practice. The authors explore the unique role of each of these facets of Billy Best's case, describing how each has or has not changed in the quarter century since that time amid the changing landscape of pediatric health care. Ultimately, although many advances have occurred since Billy Best's time, significant work remains. Additional effort will be required in the future to optimize communication, improve treatment toxicities from Hodgkin lymphoma without decreasing survival, integrate the voice and perspective of adolescents into their treatment decisions, and navigate the roles of CAM and the media in pediatric health care.

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10. [Findings From a Provider-Led, Mindfulness-Based, Internet-Streamed Yoga Video Addressing the Psychological Outcomes of Breast Cancer Survivors](#)

Holist Nurs Pract. 2021 Sep-Oct 01;35(5):281-289. doi: 10.1097/HNP.0000000000000465.

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Authors

[Jane M Flanagan](#)¹, [Kathryn Post](#), [Rebecca Hill](#), [Loren N Winters](#)

Abstract

The aim of this study was to explore the psychological outcomes of a mindfulness-based Internet-streamed yoga video in breast cancer survivors. A one-group, repeated-measures, purposive sample using a directed qualitative descriptive and convergent mixed-methods approach was used. Participants were recruited from breast oncology practices across 2 settings in the northeastern United States in April 2019. Education about the video was provided, and the link to the video was sent to participants. Demographic information, Knowing Participation in Change Short Form (KPCSF), Short Warwick-Edinburgh Mental Well-being Scale (WEMWBS), and the Generalized Anxiety Distress Scale (GAD-7) were obtained at baseline and at 2 and 4 weeks. A semistructured interview was conducted at 4 weeks. Thirty-five women (mean age = 56 years) participated. A one-group, repeated-measures analysis of variance indicated statistically significant changes occurred in all measures between week 0 and week 4: decreased GAD ($t = -2.97$, $P = .004$), improved WEMWBS ($t = 2.52$, $P = .008$), and increased KPC ($t = 2.99$, $P = .004$). Qualitative findings suggest the overall experience of the video was positive and the women would recommend its use to others. Improvements in all psychological measures were achieved with video use. Findings indicate an improvement in psychological measures and support the theory of Knowing Participation in Change. This work further contributes to accessible, flexible interventions available through the Internet and/or mobile applications aimed at improving breast cancer survivorship.

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11. [Effect of qigong for sleep disturbance-related symptom clusters in cancer: a systematic review and meta-analysis](#)

Sleep Med. 2021 Sep;85:108-122. doi: 10.1016/j.sleep.2021.06.036. Epub 2021 Jun 29.

Authors

[Denise Shuk Ting Cheung](#)¹, [Naomi Takemura](#)¹, [Robert Smith](#)¹, [Wing Fai Yeung](#)², [Xinyi Xu](#)¹, [Alina Yee Man Ng](#)¹, [Shing Fung Lee](#)³, [Chia-Chin Lin](#)⁴

Abstract

Objectives: To examine the effects of qigong interventions on sleep disturbance-related symptom clusters for cancer patients and to explore the possible mediating role of fatigue and depression in affecting sleep.

Methods: In this systematic review and meta-analysis, a systematic search was conducted through October 2020 by searching multiple English and Chinese databases. Inclusion was limited to randomized controlled trials that measured the effect of qigong on sleep and fatigue/depressive symptoms in cancer patients. Eleven studies involving 907 cancer patients were included in the systematic review, whereas the meta-analysis included ten studies with 851 cancer patients.

Results: The most commonly investigated form of qigong was Taichi, and the intervention length ranged from 10 days to 6 months. All studies employed self-reported measurements. Overall, qigong significantly improved sleep (SMD = -1.28, 95% CI: -2.01, -0.55) and fatigue (SMD = -0.89, 95% CI: -1.59, -0.19) in cancer

patients post-intervention, but not depressive symptoms (SMD = -0.69, 95% CI: -1.81, 0.42). Notably, the benefits on sleep and fatigue became non-significant after 3 months. Qigong's effect on sleep was significantly mediated by its effect on fatigue ($\beta = 1.27$, SE = 0.24, $p = 0.002$), but not depressive symptoms ($\beta = 0.53$, SE = 0.26, $p = 0.106$).

Conclusions: Qigong can be recommended for improving sleep disturbance-fatigue symptom clusters in the cancer population, while qigong's benefit on sleep is likely based on its effect on reducing fatigue. Future qigong studies should adopt more rigorous design and employ strategies to maintain longevity of intervention benefits.

12. [Traditional Chinese Medicine in Cancer Care: An Overview of 5834 Randomized Controlled Trials Published in Chinese](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211031650. doi: 10.1177/15347354211031650.

Authors

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Abstract

Background: Traditional Chinese medicine (TCM) is widely integrated into cancer care in China. An overview in 2011 identified 2384 randomized and non-randomized controlled trials (RCTs, non-RCTs) on TCM for cancer published in the Chinese literature. This article summarizes updated evidence of RCTs on TCM for cancer care.

Methods: We searched 4 main Chinese databases: China National Knowledge Infrastructure, Chinese Scientific Journal Database, SinoMed, and Wanfang. RCTs on TCM used in cancer care were analyzed in this bibliometric study.

Results: Of 5834 RCTs (477 157 cancer patients), only 62 RCTs were indexed in MEDLINE. The top 3 cancers treated were lung, stomach, and breast cancer. About 4752 RCTs (81.45%) tested TCM combined with conventional treatment, and 1082 RCTs (18.55%) used TCM alone for treating symptoms and side-effects. Herbal medicine was the most frequently used TCM modality (5087 RCTs; 87.20%). The most frequently reported outcome was symptom improvement (3712 RCTs; 63.63%) followed by quality of life (2725 RCTs; 46.71%), and biomarkers (2384 RCTs; 40.86%). The majority of RCTs (4051; 69.44%) concluded there were beneficial effects using either TCM alone or TCM plus conventional treatment compared with conventional treatment.

Conclusion: Substantial randomized trials demonstrated different types/stages of cancer were treated by various TCM modalities, alone or in combination with conventional medicine. Further evaluation on the effects and safety of TCM modalities focusing on outcomes such as quality of life is required.

13. [In Silico Drug Screening Analysis against the Overexpression of PGAM1 Gene in Different Cancer Treatments](#)

Biomed Res Int. 2021 May 31;2021:5515692. doi: 10.1155/2021/5515692. eCollection 2021.

Authors

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Abstract

Phosphoglycerate mutase 1 (PGAM1) is considered as a novel target for multiple types of cancer drugs for the upregulation in tumor, cell proliferation, and cell migration. During aerobic glycolysis, PGAM1 plays a critical role in cancer cell metabolism by catalyzing the conversion of 3-phosphoglycerate (3PG) to 2-phosphoglycerate (2PG). In this computational-based study, the molecular docking approach was used with the best binding active sites of PGAM1 to screen 5,000 Chinese medicinal phytochemical library. The docking results were three ligands with docking score, RMSD-refine, and residues. Docking scores were -16.57, -15.22, and -15.74. RMSD values were 0.87, 2.40, and 0.98, and binding site residues were Arg 191, Arg 116, Arg 90, Arg 10, and Tyr 92. The best compounds were subjected to ADMETSar, ProTox-2 server, and Molinspiration analysis to evaluate the toxicological and drug likeliness potential of such selected compounds. The UCSF-Chimera tool was used to visualize the results, which shows that the three medicinal compounds named N-Nitrosohexamethyleneimine, Subtrifloralactone-K, and Kanzonol-N in chain-A were successfully binding with the active pockets of PGAM1. The study might facilitate identifying the hit molecules that could be beneficial in the development of antidrugs against various types of cancer treatment. These hit phytochemicals could be beneficial for further investigation of a novel target for cancer.

14. [The INTREST registry: protocol of a multicenter prospective cohort study of predictors of women's response to integrative breast cancer treatment](#)

BMC Cancer. 2021 Jun 23;21(1):724. doi: 10.1186/s12885-021-08468-2.

Authors

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Free PMC article

Abstract

Background: Cancer registries usually assess data of conventional treatments and/or patient survival. Beyond that, little is known about the influence of other predictors of treatment response related to the use of complementary therapies (CM) and lifestyle factors affecting patients' quality and quantity of life.

Methods: INTREST is a prospective cohort study collecting register data at multiple German certified cancer centers, which provide individualized, integrative, in- and outpatient breast cancer care. Patient-reported outcomes and clinical cancer data of anticipated N = 715 women with pTNM stage I-III breast cancer are collected using standardized case report forms at the time of diagnosis, after completing neo-/adjuvant chemotherapy, after completing adjuvant therapy (with the exception of endocrine therapy) as well as 1, 2, 5, and 10 years after baseline. Endpoints for multivariable prediction models are quality of life,

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fatigue, treatment adherence, and progression-based outcomes/survival. Predictors include the study center, sociodemographic characteristics, histologic cancer and comorbidity data, performance status, stress perception, depression, anxiety, sleep quality, spirituality, social support, physical activity, diet behavior, type of conventional treatments, use of and belief in CM treatments, and participation in a clinical trial. Safety is recorded following the Common Terminology Criteria for Adverse Events.

Discussion: This trial is currently recruiting participants. Future analyses will allow to identify predictors of short- and long-term response to integrative breast cancer treatment in women, which, in turn, may improve cancer care as well as quality and quantity of life with cancer.

15. [Yoga therapy to reduce fatigue in cancer: effects of reminder e-mails and long-term efficacy](#)

Support Care Cancer. 2021 Dec;29(12):7725-7735. doi: 10.1007/s00520-021-06345-z. Epub 2021 Jun 22.

Authors

[Teresa Zetzl](#)¹, [Andre Pittig](#)^{2 3}, [Agnes Renner](#)⁴, [Birgitt van Oorschot](#)⁴, [Elisabeth Jentschke](#)^{4 5}

Abstract

Objective: To examine the efficacy of reminder e-mails to continue yoga therapy on practice frequency and fatigue in cancer patients and long-term effects of yoga on fatigue, depression, and quality of life.

Methodology: One hundred two cancer patients who completed an 8-week yoga therapy were randomly allocated to two groups: reminder (N = 51) vs. no-reminder group (N = 51). After completing yoga therapy, the reminder group received weekly e-mails for 24 weeks, which reminded them of practicing yoga, whereas the no-reminder group did not. Primary outcomes were fatigue and practice frequency, and long-term outcomes were fatigue, depression, and quality of life. Data were assessed using questionnaires after yoga therapy (T1) and 6 months after completing yoga therapy (T2).

Result: A significantly stronger reduction of general ($p = 0.038$, $d = 0.42$) and emotional fatigue ($p = 0.004$, $d = 0.59$) and a higher increase of practice frequency ($p = 0.015$, $d = 0.52$) between T1 and T2 were found for the reminder group compared to the no-reminder group. In the mediation model, practice frequency as a mediator partially explained the changes in emotional fatigue (indirect effect $B = -0.10$). Long-term effects of yoga therapy regarding fatigue, depression, and quality of life were found ($F > 7.46$, $p < 0.001$, $d > 0.54$).

Conclusion: Weekly reminder e-mails after yoga therapy can positively affect general and emotional fatigue and help cancer patients with fatigue establish a regular yoga practice at home. However, higher practice frequency did not lead to higher physical or cognitive fatigue improvement, suggesting other factors that mediate efficacy on physical or cognitive fatigue, such as mindfulness or side effects of therapy.

16. [The Benefit of Enhanced Daycare of Traditional Chinese Medicine for Cancer Treatment Related Adverse Events: A Retrospective Study of Medical Records](#)

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Abstract

Objective: Cancer patients undergo therapies that might lead to severe adverse events. The enhanced daycare of Traditional Chinese medicine (TCM) we describe was intended to help cancer patients suffering from severe adverse events to obtain relief. We used the Taiwan brief version of the Common Terminology Criteria for Adverse Events Version 4.0 (Taiwan brief version questionnaire of CTCAE) as a primary measurement to evaluate the efficacy of the enhanced day care of TCM. The secondary measurements were the Taiwanese version of the Brief Fatigue Inventory (BFI-T) questionnaire and the World Health Organization Quality of Life-BREF (WHOQOL-BREF) questionnaire, which were used to quantify fatigue and quality of life (QOL), respectively.

Methods/design: This is a retrospective study of medical records. There were 401 patients treated with enhanced daycare of TCM from June 2017 to November 2019.

Results: Among 22 common adverse symptoms in the Taiwan brief version questionnaire of CTCAE4.0, 14 symptoms achieved a significant improvement, and the change of the total scores was also statistically significant ($P < .001$). Cancer stages II to IV showed significant improvement on the CTCAE and BFI-T; stage I only showed improvement on the BFI-T. On the WHOQOL questionnaire, there was a statistically significant difference in self-evaluation of the quality of life ($P = .001$) and self-evaluation of the total health condition aspect ($P < .001$).

Conclusions: The enhanced TCM daycare program helped cancer patients decrease the severity of their adverse events and improve their fatigue and QOL. ClinicalTrials.gov identifier: [NCT04606121](#).

17. [Patient Reported Traditional Chinese Medicine Spleen Deficiency Syndrome \(TCM-SDS\) Scale for Colorectal Cancer: Development and Validation in China](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211020105. doi: 10.1177/15347354211020105.

Authors

[Lingyun Sun](#)¹, [Jun J Mao](#)², [Yunzi Yan](#)³, [Yun Xu](#)¹, [Yufei Yang](#)¹

Abstract

Introduction: Spleen Deficiency Syndrome (SDS) is recognized as one of the most common Traditional Chinese Medicine (TCM) syndromes in patients with colorectal cancer (CRC). However so far there is no existing patient-reported outcome (PRO) to evaluate SDS. Our study aimed to develop and validate a PRO TCM-SDS scale for CRC in China.

Methods: We developed an initial 8-item TCM-SDS scale for CRC based on literature review and consultation with experts. We then pilot tested the scale ($n = 40$) and performed item revision. We conducted a survey study among CRC patients from oncology clinics at a TCM Hospital to further determine the reliability and validity of the scale.

Results: Among 100 patients finally enrolled and analyzed in the survey study, 46% were female with median age of 60 years old, 77% had left side tumors and 23% had stage IV disease. Factor loading

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indicated that there were three domains within TCM-SDS scale. The final TCM-SDS scale involves 5 items including "I feel loss of appetite," "I feel abdomen fullness," "I feel my arms and legs lack strength," "I feel short of breath when talking," and "My stool is formless" (Cronbach's alpha coefficient 0.76). We calculated the total score of the scale by summing the 5 individual items and normalizing them to a value maximum of 10, with higher scores indicating greater burden of spleen deficiency syndrome. The average spleen deficiency score for all patients was 3.55 ± 1.54 . Among them, those who had stage IV disease had higher scores than stage I-III patients (4.30 vs 3.38 , $P = .015$). Test-retest reliability after 2 weeks showed Pearson coefficient of 0.67 and all items were highly related ($P < .001$). Compared with healthy controls, CRC patients had significantly higher spleen deficiency scores (3.55 vs 3.23 , $P = .045$).

Conclusion: The patient-reported TCM-SDS scale for CRC showed adequate initial reliability and validity. The development of the scale provided an outcome measurement tool, which could facilitate future studies to better evaluate the role of TCM in treating CRC.

18. [Effectiveness of Herbal Medicine for Leukopenia/Neutropenia Induced by Chemotherapy in Adults with Colorectal Cancer: A Systematic Review and Meta-analysis](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211021654. doi: 10.1177/15347354211021654.

Authors

[Shao-Hua Yan](#)¹, [Shuo Feng](#)^{2 3}, [Yun Xu](#)¹, [Yun-Zi Yan](#)⁴, [Bin He](#)¹, [Ling-Yun Sun](#)¹, [Bing Pang](#)⁵, [Wen-Jia Liu](#)⁶, [Yu-Ying Xu](#)⁴, [Na Zhao](#)⁴, [Mo Tang](#)¹, [Yue Chen](#)⁴, [Ming-Kun Yu](#)⁴, [Yu-Fei Yang](#)¹

Abstract

Objective: To evaluate the effectiveness of Chinese Herbal Medicine (CHM) on leukopenia/neutropenia induced by chemotherapy in adults with colorectal cancer (CRC).

Methods: Eight electronic databases were searched from their inception to June 2020. Randomized controlled trials with clarified sequence generation were qualified. Two reviewers independently conducted the screening and data extraction. Methodological quality was assessed using the Risk of Bias tool. RevMan 5.4 was applied to the meta-analysis.

Results: Twenty-seven studies involving 1867 participants were qualified, of which 26 were included in the quantitative synthesis. Meta-analysis showed that CHM significantly reduced the incidence of leukopenia induced by chemotherapy (RR = 0.69; 95% CI 0.59-0.82), as well as the grade 3/4 leukopenia (RR = 0.71; 95% CI 0.55-0.90). Meanwhile, CHM decreased the occurrence of neutropenia (RR = 0.52, 95% CI 0.35-0.77), especially for the grades 3/4 neutropenia (RR = 0.42, 95% CI 0.27-0.64). Twenty-six of the included studies focused on the adverse events related to CHM.

Conclusion: CHM may relieve neutropenia/leukopenia induced by chemotherapy in adults with colorectal cancer.

19. [Prioritizing Chinese medicine clinical research questions in cancer palliative care from patient and caregiver perspectives](#)

Health Expect. 2021 Aug;24(4):1487-1497. doi: 10.1111/hex.13289. Epub 2021 Jun 9.

Authors

[Charlene H L Wong](#)^{1 2}, [Wendy Wong](#)^{3 4}, [Wai Ling Lin](#)⁵, [David K Y Au](#)⁵, [Justin C Y Wu](#)¹, [Ting Hung Leung](#)^{2 6}, [Irene X Y Wu](#)⁷, [Vincent C H Chung](#)^{2 6}

Abstract

Background: Chinese medicine (CM) modalities, including acupuncture and Chinese herbal medicine (CHM), are popular palliative interventions among patients with cancer, but further clinical research is required to assess their effectiveness and safety.

Objective: To prioritize top ten important CM clinical research questions from patients with cancer, cancer survivors and caregivers' perspectives via a face-to-face prioritization workshop in Hong Kong.

Methods: A list of 25 CM clinical research questions for cancer palliative care, which were identified from existing systematic reviews (SRs) and overview of SRs, was presented to 17 participants (patients with cancer [n = 5], cancer survivors [n = 6] and caregivers [n = 6]). The participants were then invited to establish consensus on prioritizing top ten research questions.

Results: Among the top ten priorities, five (50%) focused on acupuncture and related therapies, while five (50%) were on CHM. The three most important research priorities were (i) manual acupuncture plus opioids for relieving pain; (ii) CHM for improving quality of life among patients receiving chemotherapy; and (iii) concurrent use of CHM plus loperamide for reducing stomatitis.

Conclusion: The top ten participant-endorsed CM clinical research priorities for cancer palliative care can guide local researchers on future direction. They can also inform local research funders on patient-centred allocation of limited funding. Under limited research funding, the most important co-prioritized research question from professional and patient perspectives may be addressed first.

20. [The effect of Apis dorsata honey as complementary therapy on IL-37 levels and fatigue in breast cancer patients undergoing chemotherapy](#)

Breast Dis. 2021;40(S1):S129-S133. doi: 10.3233/BD-219020.

Authors

[Yuliana Syam](#)¹, [Prihantono Prihantono](#)², [Elly L Sjattar](#)¹, [Arnis Puspitha](#)¹, [Sintawati Majid](#)³

Abstract

Objective: The purpose of this study is to determine the effect of Apis dorsata Honey as a complementary therapy on IL-37 levels and fatigue in breast cancer patients undergoing chemotherapy.

Method: The study used a quasi-experimental pretest-posttest design with a control group. A total of 30 subjects were recruited using a concurrent sampling technique. The intervention group consisted of 15 subjects who received oral honey at a dose of 13 ml (1 tablespoon × 3) for 15 days, and the control group consisted of 15 subjects. The groups' samples were chosen at random. The Fatigue Symptom Inventory (FSI) was used to assess the side effects of chemotherapy.

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Results: Although the effect of Apis dorsata Honey on IL-37 levels was not statistically significant ($p > 0.05$), the group given honey experienced a clinically significant increase in IL-37 levels, with a mean before (632.37514.93) and post (632.37514.93). (1,003.021,248.88). Fatigue decreased statistically significantly in the group given mean honey values prior to 13.205.59 and after 11.805.07 ($p = 0.004$).

Conclusion: Honey administration increases IL-37 levels clinically, though the increase is not statistically significant. Giving honey to patients with breast cancer can help alleviate fatigue caused by chemotherapy.

21. [Qigong for women with breast cancer: An updated systematic review and meta-analysis](#)

Complement Ther Med. 2021 Aug;60:102743. doi: 10.1016/j.ctim.2021.102743. Epub 2021 May 28.

Authors

[Tian Meng](#)¹, [Sheng-Fang Hu](#)¹, [Yi-Qin Cheng](#)¹, [Mei-Na Ye](#)¹, [Bing Wang](#)¹, [Jing-Jing Wu](#)¹, [Hong-Feng Chen](#)²

Abstract

Objective: The purpose of this review was to evaluate the effectiveness of Qigong in improving the quality of life and relieving fatigue, sleep disturbance, and cancer-related emotional disturbances (distress, depression, and anxiety) in women with breast cancer.

Methods: The PubMed, Cochrane Central Register of Controlled Trials, Web of Science, Sinomed, Wanfang, VIP, and China National Knowledge Infrastructure databases were searched from their inception to March 2020 for controlled clinical trials. Two reviewers selected relevant trials that assessed the benefit of Qigong for breast cancer patients independently. A methodological quality assessment was conducted according to the criteria of the 12 Cochrane Back Review Group for risk of bias independently. A meta-analysis was performed by Review Manager 5.3.

Results: This review consisted of 17 trials, in which 1236 cases were enrolled. The quality of the included trials was generally low, as only five of them were rated high quality. The results showed significant effectiveness of Qigong on quality of life ($n = 950$, standardized mean difference (SMD), 0.65, 95 % confidence interval (CI) 0.23-1.08, $P = 0.002$). Depression ($n = 540$, SMD = -0.32, 95 % CI -0.59 to -0.04, $P = 0.02$) and anxiety ($n = 439$, SMD = -0.71, 95 % CI -1.32 to -0.10, $P = 0.02$) were also significantly relieved in the Qigong group. There was no significant benefit on fatigue ($n = 401$, SMD = -0.32, 95 % CI 0.71 to 0.07, $P = 0.11$) or sleep disturbance relief compared to that observed in the control group ($n = 298$, SMD = -0.11, 95 % CI 0.74 to 0.52, $P = 0.73$).

Conclusion: This review shows that Qigong is beneficial for improving quality of life and relieving depression and anxiety; thus, Qigong should be encouraged in women with breast cancer.

22. [The effect of Apis Dorsata honey as a complementary therapy to interleukin-6 \(IL-6\) levels and T lymphocytes of post-chemotherapy breast cancer patients](#)

Breast Dis. 2021;40(S1):S97-S101. doi: 10.3233/BD-219014.

Authors

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[Yuliana Syam](#)¹, [Prihantono Prihantono](#)², [Sintawati Majid](#)³, [Elly L Sjattar](#)¹, [Mery Kana](#)¹, [Andi Nilawati Usman](#)⁴

Abstract

Background: The overproduction of interleukin-6 (IL-6) in breast cancer cases can aggravate metastases. In comparison, the production of T lymphocytes plays a role in suppressing the development of tumor cells. Honey as a complementary therapy is expected to reduce the overproduction of IL-6 and facilitate the production of T lymphocytes in breast cancer cases.

Objective: This study aims to determine the effect of Dorsata honey (DH) as a complementary therapy to IL-6 levels and T lymphocytes of post-chemotherapy in breast cancer.

Methods: This study was a quasi-experimental approach that employed a pretest-posttest group control design. As many as 30 post-chemotherapy breast cancer patients at the Central Hospital in Eastern Indonesia were randomly selected into a control group of 15 participants. Additionally, an intervention group of 15 participants was given DH orally three times a day at a dose of 15 ml. The blood sample was taken two times, day 0 of the chemotherapy and day 16 (post-chemotherapy). The level of IL-6 was measured by ELISA, while the data were analyzed by Wilcoxon, independent T-test, and Mann-Whitney test.

Results: The results showed that DH did not significantly affect IL-6 levels ($p = 0.17$). However, there was an increase in T lymphocyte levels with statistically significant differences ($p = 0.01$) in intervention groups. There was no difference in IL-6 and T lymphocyte levels between the intervention and control groups ($p > 0.05$).

Conclusions: IL-6 levels tend to be constant in the intervention group. However, there is a significant increase in the T lymphocyte levels which can indirectly increase the immune system and inhibit tumor cell growth in patients with breast cancer.

23. [Comparing the effect of acupressure and ginger on chemotherapy gastrointestinal side-effects in children with leukemia](#)

Complement Ther Med. 2021 Aug;60:102730. doi: 10.1016/j.ctim.2021.102730. Epub 2021 May 27.

Authors

[Magda A Essawy](#)¹, [Rasha M Abohadida](#)¹, [Wafaa M Abd-Elkader](#)¹, [Hoda M Fathy](#)², [Hoda M Hassab](#)³

Abstract

The biosocial data of 90 children with acute lymphoblastic leukemia, were collected along with assessment of gastrointestinal side-effects of chemotherapy using visual analogue scale. Ginger lozenges has more effect than acupressure in alleviating nausea and vomiting. Acupressure alleviate the nausea best in the group aged 13-15 years. Ginger helped more the other two groups (7-12 years, 69 % of the group didn't suffer from nausea), versus 50 % aged 13-15). Both acupressure and ginger affected girls more than boys in alleviating nausea. The acupressure effect on vomiting incidence didn't differ in both males and males, whilst ginger helped the males more.

24. [The effect of massage therapy on fatigue after chemotherapy in gastrointestinal cancer patients](#)

Support Care Cancer. 2021 Dec;29(12):7307-7314. doi: 10.1007/s00520-021-06304-8. Epub 2021 May 27.

Authors

[Javad Alizadeh](#)¹, [Mohammad Reza Yeganeh](#)¹, [Moluk Pouralizadeh](#)², [Zahra Atrkar Roushan](#)³, [Cyrus Gharib](#)⁴, [Sara Khoshamouz](#)¹

Abstract

Introduction: Gastrointestinal cancer patients undergoing chemotherapy usually suffer from fatigue, which may affect different aspects of their lives.

Objective: The current study aimed to investigate the effect of massage therapy on fatigue after chemotherapy in gastrointestinal cancer patients.

Method: In this quasi-experimental study, 88 gastrointestinal cancer patients were randomly allocated into two groups of intervention and control. Patients received the chemotherapy for 3 h. The intervention group received four sessions of foot massage with an interval of 40 min during the chemotherapy. The massage duration was 7 min for each foot. Fatigue was measured using the visual analogue scale to evaluate fatigue severity just after and 24 h after the chemotherapy. Friedman and Mann-Whitney U tests were used to analyze the data.

Results: The mean age of patients was $59/18 \pm 9/35$, and the most common type of cancer was gastric cancer (40%). There was a significant difference in the mean score of fatigue between the two groups immediately after ($P > 0.001$) and 24 h after chemotherapy ($P < 0.001$). In the intervention group, fatigue score decreased gradually ($P = 0.031$), while it increased in the control group ($P = 0.001$).

Conclusion: This study demonstrated that foot massage, as a simple method, could reduce chemotherapy-induced fatigue.

25. [The efficacy of music therapy to relieve pain, anxiety, and promote sleep quality, in patients with small cell lung cancer receiving platinum-based chemotherapy](#)

Support Care Cancer. 2021 Dec;29(12):7299-7306. doi: 10.1007/s00520-021-06152-6. Epub 2021 May 26.

Authors

[Haoke Tang](#)¹, [Liping Chen](#)², [Yichun Wang](#)³, [Yongchang Zhang](#)⁴, [Nong Yang](#)⁴, [Ning Yang](#)⁵

Abstract

Purpose: Chemotherapy induces a range of physical and psychological symptoms, including pain, sleep disorders, fatigue, and anxiety. We aimed to assess the efficacy of six-step music therapy in relieving pain and anxiety and improving sleep quality in lung cancer patients receiving platinum-based chemotherapy.

Methods: Between March 2013 and October 2015, we enrolled a total of 100 patients who were diagnosed with small cell lung cancer and scheduled for platinum-based chemotherapy. Patients were randomly assigned to two groups: the music therapy group (received six-step music therapy, n=50) and the control group (not received six-step music therapy, n=50). The anxiety, pain, and sleep quality of all

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patients were assessed using the self-rating anxiety scale (SAS), the visual analogue scale (VAS), and the Pittsburgh Sleep Quality Index (PSQI), respectively.

Results: There were no significant differences in the demographic characteristics and music background between the two groups. The SAS and VAS scores in the two groups were not statistically different before chemotherapy. However, patients in the music therapy group showed significantly lower SAS and VAS scores compared with the control group at both 1 day and 5 days after chemotherapy. (SAS score at 1-day post-therapy, 49.48 ± 2.14 vs 61.46 ± 8.8 , $P=0.011$; SAS score at 5-day post-therapy, 39.73 ± 1.79 vs 62.02 ± 8.83 , $P=0.005$; VAS score at 1-day post-therapy, 2.14 ± 0.78 vs 4.74 ± 1.01 , $P=0.005$; VAS score at 5-day post-therapy, 2.06 ± 0.79 vs 4.74 ± 1.08 , $P=0.004$). In addition, the total PSQI score of patients who received music therapy was also significantly higher than that of the control group after therapy (total PSQI score at 1-day post-therapy, 8.50 ± 1.69 vs 17.81 ± 3.01 , $P=0.006$; total PSQI score at 5-day post-chemotherapy, 9.84 ± 3.02 vs 18.66 ± 2.91 , $P=0.012$).

Conclusion: The music therapy was an effective approach in alleviating pain and anxiety and promoting sleep quality in lung cancer patients receiving platinum-based chemotherapy.

26. [Electroacupuncture Plus Auricular Acupressure for Chemotherapy-Associated Insomnia in Breast Cancer Patients: A Pilot Randomized Controlled Trial](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211019103. doi: 10.1177/15347354211019103.

Authors

[Jialing Zhang](#)¹, [Zongshi Qin](#)¹, [Tsz Him So](#)², [Haiyong Chen](#)¹, [Wing Lok Lam](#)¹, [Lo Lo Yam](#)¹, [Pui Yan Chan](#)¹, [Lixing Lao](#)^{1 3}, [Zhang-Jin Zhang](#)^{1 4}

Abstract

Objective: Chemotherapy-associated insomnia is a highly prevalent complaint in breast cancer patients. This study was undertaken to evaluate the safety, feasibility, and preliminary effectiveness of electroacupuncture plus auricular acupressure for chemotherapy-associated insomnia in patients with breast cancer.

Materials and methods: In this randomized, wait-list controlled trial, thirty breast cancer patients under or post chemotherapy with insomnia were randomly allocated to the acupuncture or wait-list control group. Participants in acupuncture group received electroacupuncture plus auricular acupressure treatment twice weekly for 6 weeks. Participants in wait-list group received the same regimen of treatment after 6-week of waiting period. Insomnia Severity Index (ISI) served as the primary outcome measurement. Secondary outcomes were sleep parameters recorded with sleep diary and actiwatch, as well as the scores of Pittsburgh Sleep Quality Index (PSQI), Hospital Anxiety and Depression Scale (HADS), and Functional Assessment of Cancer Therapy-Breast Cancer (FACT-B).

Results: Twenty-eight participants completed study (13 in the acupuncture group vs 15 in the wait-list control group). At week-6 post-intervention, ISI score change from baseline showed significant between-group difference favoring acupuncture group of -2.9 points (95% CI: -5.2 to -0.6, $P = .014$). The acupuncture group showed greater improvements in the total sleep time recorded by sleep diary ($P =$

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.026), scores of PSQI ($P = .012$), HADS-depression ($P = .020$), and FACT-B ($P < .001$) compared with the control group. Improvements were maintained at week-10 and week-14 follow-ups.

Conclusions: Acupuncture is safe, feasible, and effective for chemotherapy-associated insomnia in breast cancer patients under or post chemotherapy. A larger sample size randomized clinical trial is warranted to confirm the present findings.

Clinical trial registration: [NCT03762694](https://www.clinicaltrials.gov/ct2/show/study/NCT03762694).

27. [Qigong Exercise for Patients with Gastrointestinal Cancer Undergoing Chemotherapy and at High Risk for Depression: A Randomized Clinical Trial](#)

J Altern Complement Med. 2021 Sep;27(9):750-759. doi: 10.1089/acm.2020.0531. Epub 2021 May 12.

Authors

[Li-Hua Yang](#)¹, [Pei-Bei Duan](#)², [Qing-Mei Hou](#)¹, [Xiao-Qing Wang](#)¹

Abstract

Aims and objectives: This study evaluated the effects of a Chinese traditional *qigong* exercise-monkey frolic in Wuqinxi on depression and quality of life in patients with gastrointestinal cancer undergoing chemotherapy and at high risk for depression. **Methods:** In this prospective, randomized-controlled clinical trial, 80 patients with gastrointestinal cancer undergoing chemotherapy and at high risk for depression were randomized to an intervention group or a control group. Participants in the intervention group participated in *qigong* exercise five sessions each week and also received conventional treatment for 4 weeks; whereas participants in the control group received conventional treatment only. The primary outcome was the change in depressive symptoms as obtained through the Self-Rating Depression Scale. Automatic negative thoughts and quality of life were measured by the Automatic Thoughts Questionnaire and the European Organization for Research and Treatment of Cancer Core Quality of Life Questionnaire-core30, respectively. Analyses were based on analysis of covariance (ANCOVA) with the "intention-to-treat" population, defined as all randomized patients by imputing mean of the column in place of missing data. **Results:** Seventy-nine participants (98.8%) completed the study, 40 in the intervention group and 39 in the control group. Results of ANCOVA revealed that, compared with the control group, the intervention group reported significantly lower depression scores, fewer negative thoughts, and showed significant improvement in global health status and physical, role, emotional, cognitive, and social functions ($p < 0.05$) following the intervention. Post-treatment scores for all symptoms in the intervention group were significantly lower than those in the control group ($p < 0.05$), except for financial difficulties. No significant differences between the two groups were present in the adverse events (all $p > 0.05$). **Conclusions:** *Qigong* exercise may be useful for relieving depression, reducing negative thoughts, and improving the quality of life in patients with gastrointestinal cancer undergoing chemotherapy. Clinical Trial Registry (#ChiCTR2100043417).

28. [The evolution of the socio-cultural and religious characteristics of cancer patients in Morocco: case of the National Institute of Oncology Rabat](#)

BMC Cancer. 2021 May 7;21(1):516. doi: 10.1186/s12885-021-08175-y.

Authors

[Fahd Elkhalloufi](#)^{1 2}, [Saber Boutayeb](#)^{3 4}, [Fouzia Mamouch](#)³, [Latifa Rakibi](#)^{3 4}, [Sanae Elazzouzi](#)⁴, [Hassan Errihani](#)^{3 4}

Abstract

Background: In 2020, Morocco recorded more than 59,370 new cases of cancer and more than 35,265 cases of death (International Agency for Research on Cancer, Annual report Morocco, 2020). Cancer is always accompanied by socially constructed, differentiated, and contingent interpretations and practices according to the socio-cultural and religious characteristics of each region. The study aims at describing the evolution of the socio-cultural and religious aspects of Moroccan cancer patients followed at the National Institute of Oncology (NIO) of Rabat between 2010 and 2020.

Methods: We have prospectively studied all cancer cases diagnosed at the National Oncology Institute (NIO), Rabat in 2019. We have collected 1102 cases. The data collected was compared with the results of the study carried out in 2010 (1600 cases). Statistical analysis has been assessed by SPSS 20 software and the correlations between socio-cultural characteristics were examined using a chi-square test.

Results: From a socio-economic point of view, almost all patients claim that cancer is a costly disease as well as a disease that leads to a drop in income and the inevitable impoverishment of Moroccan patients. The illiteracy rate is still high; rising from 38% in 2010 to 42.80% in 2020. On the psychological level, damage to body image (alopecia, mastectomy, hysterectomy,) can lead to stigmatizing and harms the marital relationship. The number of patients experiencing divorce and marital separation that seems to occur following cancer pathology remains high, despite a decrease of nearly 50% between 2010 and 2020. Concerning the spiritual aspect, in the Arab-Amazigh-Muslim culture, the impact of the occurrence of cancer is very particular, and the repercussions are assessed differently depending on the degree of conviction. For practicing believers, cancer is considered a divine test and an opportunity to improve. In the Qur'an, God tests the best of his disciples to reward them. The rate of practicing believers has evolved from 49% in 2010 to 85.50% in 2020. But for non-practicing believers, cancer is regarded as a divine punishment coming from outside. New behaviors reported by this research concern the use of "roquia". This spiritual cure is considered as an anti-cancer remedy. It uses Allah's words from the holy "Qur'an", his faire names and his attributes. 42% of patients use "roquia". Concerning phytotherapy, there was an increase in the percentage of participants using medicinal plants and even the most harmful plants (Arestiloch, Euphorbia) from 26% in 2010 to 51.50% in 2020.

Conclusion: The precarious social level of cancer patients, the lack of social and medical coverage, illiteracy, and lack of knowledge of religion, as well as dissatisfaction with conventional medicine, may lead patients to the use of traditional medicine (medicinal plants, visit of "marabouts", "roquia"). This can have a negative impact on the quality of access to oncology care.

29. [Yoga in the Pediatric Oncology Population: A Review of the Literature](#)

J Pediatr Oncol Nurs. Nov-Dec 2021;38(6):410-419. doi: 10.1177/10434542211011065. Epub 2021 May 7.

Author

[Denise Spector](#)¹

Abstract

Background: The purpose of this review was to evaluate the current body of literature on yoga in the pediatric oncology population. Considering the increasing number of studies on yoga indicating improvements in health-related quality of life (HRQL) among the adult oncology population, it is important to explore whether similar benefits have been found in pediatric oncology patients. **Methods:** CINAHL, Ovid MEDLINE, PsycINFO, PubMed, and Scopus were searched from the years 2010 through 2020 for studies assessing the use of yoga in children and adolescents affected by cancer. Considering the benefits of yoga on HRQL in the adult oncology population, the aim of this review was to evaluate the current body of literature on yoga in the pediatric cancer population. **Results:** Eight studies, all nonrandomized with single-arm designs, were reviewed. Five of the studies were designed as feasibility studies and while recruitment rates ranged from 34% to 55%, retention rates were ~70%. Qualitative feedback from participants was very positive and themes related to both physical and psychological benefits. Certain measures of HRQL (i.e., anxiety, pain, and physical functioning) were found to be significantly improved following a yoga intervention. **Discussion:** Although no randomized clinical trials have been conducted to date on this important topic, the studies reviewed showed that delivering yoga to this population is feasible and safe. Additionally, preliminary findings on the impact of yoga for some of the common symptoms and treatment-related side effects experienced by children and adolescents affected by cancer are promising.

30. [The Adjunctive Effect of Acupuncture for Advanced Cancer Patients in a Collaborative Model of Palliative Care: Study Protocol for a 3-Arm Randomized Trial](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211012749. doi: 10.1177/15347354211012749.

Authors

[Haiyong Chen](#)¹, [Tsz Him So](#)¹, [William Chi-Shing Cho](#)², [Zongshi Qin](#)¹, [Chun Ho Ma](#)³, [Shi Guang Li](#)⁴, [Zhenjiang Yang](#)⁴, [Fei Jiang](#)⁵, [Junmei Wu](#)¹, [Zhang Jin Zhang](#)¹, [Feng Ming Kong](#)², [Lixing Lao](#)^{1 6}

Abstract

Background: Cancer is the second leading cause of death before the age of 70. Improved cancer survival has put increasing demands on cancer care. Palliative care is the specialized multi-disciplinary care providing relief from the pain, symptoms, and stress of serious illness. The study aims to evaluate the adjunctive effect of acupuncture for advanced cancer patients in a collaborative model of palliative care.

Methods/design: This is a single-blinded, randomized, sham-controlled trial. One hundred twenty advanced cancer patients undergoing palliative care will be randomized in a ratio of 2:1:1 to manual acupuncture plus standard care group (ASC), sham acupuncture plus standard care group (SSC), and standard care group (SC). Patients in ASC and SSC will receive 9 sessions of acupuncture or sham acupuncture for 3 weeks, and will be followed up for 2 months. The primary measure is the change from baseline score of the Edmonton Symptom Assessment System at 3 weeks. The secondary measures include the Brief Fatigue Inventory, Hospital Anxiety and Depression Scale, Insomnia Severity Index, Numeric Rating Scale, and European Organization for Research and Treatment of Cancer Quality of Life 15 items Questionnaire for Palliative Care.

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Discussion: The finding of this trial will provide high-quality evidence on the adjunctive effect of acupuncture to standard care on advanced cancer patients undergoing palliative care.

Trial registration: Clinicaltrials.gov, [NCT04398875](https://www.clinicaltrials.gov/ct2/show/NCT04398875)
(<https://www.clinicaltrials.gov/ct2/show/NCT04398875>), Registered on 21 May 2020.

31. [Anticancer and Anti-inflammatory Effect of Diosmin against Dalton Ascitic Lymphoma Induced Leukemia](#)

J Oleo Sci. 2021;70(5):665-673. doi: 10.5650/jos.ess21022.

Authors

[Xiangmei Yao](#)¹, [Xuezhong Gu](#)¹, [Song Jin](#)², [Keqian Shi](#)¹, [Xiaoli Gao](#)², [Qi Wang](#)¹, [Jie Zhao](#)¹, [Haixi Zhang](#)¹, [Xun Lai](#)³

Abstract

Cancer is the world's biggest health problem and cancer-induced mortality happened all over the planet after the heart disease. The present study was to scrutinize the anti-leukemia effect of diosmin against Dalton Ascitic Lymphoma (DAL) induced leukemia in mice. DAL cell was used for induction the solid tumor. Body weight, life spans, tumor volume and mean survival time was estimated. Antioxidant, biochemical and pro-inflammatory cytokines were estimated. Diosmin showed the cell viability effect at dose dependent manner against the both cell lines. DAL induced solid tumor mice showed the decreased body weight, mean survival days, non viable cell count and increased the tumor volume, viable cell count and diosmin significantly ($p < 0.001$) reverse the effect of DAL. Diosmin significantly ($p < 0.001$) altered the hematological, differential leukocytes, antioxidant, biochemical, pro-inflammatory cytokines at dose dependently. Collectively, we can say that diosmin might alter the DAL induced abnormality via antioxidant and anti-inflammatory effects.

Keywords: Dalton Ascitic Lymphoma; anti-inflammatory; anti-leukemia; antioxidant; diosmin.

32. [Dihydroartemisinin regulates apoptosis, migration, and invasion of ovarian cancer cells via mediating RECK](#)

J Pharmacol Sci. 2021 Jun;146(2):71-81. doi: 10.1016/j.jphs.2021.02.001. Epub 2021 Mar 13.

Authors

[Jingfei Zheng](#)¹, [Xuehe Li](#)², [Weili Yang](#)², [Fang Zhang](#)²

Abstract

Background: Dihydroartemisinin (DHA) possesses an inhibitory effect on ovarian cancer and promotes reversion-inducing cysteine-rich protein with Kazal motifs (RECK) expression in glioma cells. This study explored the role of DHA and RECK on ovarian cancer.

Methods: The RECK level in ovarian cancer was analyzed under GEPIA 2 database and proved by RT-qPCR. After being treated with DHA or infected with siRECK lentivirus, the viability, apoptosis, migration, and invasion of ovarian cancer cells were evaluated by CCK-8, flow cytometry, wound healing, and transwell

assays. Also, the expressions of factors related to apoptosis and epithelial-mesenchymal transition were measured by Western blot or RT-qPCR.

Results: DHA-treatment weakened the viability, migration, invasion, and enhanced apoptosis of ovarian cancer cells. DHA also down-regulated the levels of Bcl-2, N-cadherin, and Vimentin, and up-regulated the levels of Bax, C-caspase-3 and E-cadherin in ovarian cancer cells. RECK was lowly expressed in both ovarian cancer tissues and cells. siRECK not only had an effect opposite to DHA on the viability, apoptosis, migration, invasion, and related-factors of ovarian cancer cells but also offset the effect of DHA on ovarian cancer cells.

Conclusion: DHA regulated apoptosis, migration, and invasion of ovarian cancer cells via mediating RECK.

33. [Toxicity, mutagenicity and trace metal constituent of *Termitomyces schimperi* \(Pat.\) R. Heim \(Lyophyllaceae\) and kaolin, a recipe used traditionally in cancer management in Cote d'Ivoire](#)

J Ethnopharmacol. 2021 Aug 10;276:114147. doi: 10.1016/j.jep.2021.114147. Epub 2021 Apr 28.

Authors

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Abstract

Ethnopharmacological relevance: Some local communities in Cote d'Ivoire use the mushroom *Termitomyces schimperi* combined with kaolin (TSK) to manage various cancers in patients. However, there is a paucity of data on toxicity, mutagenicity and trace metal constituent of TSK.

Aim of the study: We sought to investigate the acute and sub-chronic toxicities, mutagenic potential, and trace metal constituents of TSK.

Materials and methods: To assess acute toxicity, single doses (1000, 3000 and 5000 mg/kg) of aqueous extract of TSK were administered per os to Sprague Dawley (SD) rats on Day 1. The rats were then monitored for 13 consecutive days. Sub-chronic toxicity was evaluated by daily administration of 200 and 500 mg/kg of the extract per os for 90 consecutive days. SD rats used as control received distilled water. Signs of toxicity, changes in body weight and mortality were monitored. After the aforementioned monitoring processes, rats were sacrificed and blood collected for full blood count and biochemistry analysis. Animal organs were also collected for histopathological examination. The mutagenic potential of the aqueous extract of TSK (10000 µg/mL) on TA98 *Salmonella typhimurium* was estimated. Additionally, energy-dispersive X-ray fluorescence (ED-XRF) method was employed to determine trace metal constituents of TSK.

Results: Single-dose administration of 5000 mg/kg of TSK did not cause any death in the SD rats; thus, LD₅₀ was above 5000 mg/kg. Administration of 1000 and 3000 mg/kg of the aqueous extract of TSK did not cause any significant change in behaviour and body weight of SD rats during the 14-day monitoring period. However, the mean corpuscular volume and the mean corpuscular haemoglobin concentration increased significantly ($p < 0.01$) among rats administered 1000 and 3000 mg/kg of TSK. There was a significant increase ($p < 0.0001$) in alanine transaminase levels in rats administered 1000 and 3000 mg/kg of TSK

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extract compared with control. Conversely, there was a significant decrease ($p=0.0122$) in serum creatine level among rats administered 1000 and 3000 mg/kg of TSK extract compared with control. After 14 days, there were minimal changes with isolated organs of TSK-treated and control rats. Furthermore, 90-day treatment with extract of TSK caused no significant change in parameters assessed. TSK induced frameshift gene mutation in *S. typhimurium* before ($p < 0.05$) and after metabolic activation ($p < 0.001$). Elemental analysis of TSK revealed the presence of toxic (aluminium) or potentially toxic (silver, radium, titanium and zirconium) elements.

Conclusions: The aqueous extract of TSK showed no toxicity (acute and sub-chronic) at doses tested. These findings are consistent with the absence of heavy metals (i.e., cadmium) and potentially toxic elements (i.e., uranium) in TSK samples analysed. TSK showed some level of mutagenic potential. Further mutagenic and chronic toxicity studies on TSK are required.

34. [Anti-breast cancer potential of Anonidium mannii \(Oliv.\) Engl. & Diels barks ethanolic extract: UPLC-ESI-QTOF-MS detection of anticancer alkaloids](#)

J Ethnopharmacol. 2021 Aug 10;276:114131. doi: 10.1016/j.jep.2021.114131. Epub 2021 Apr 21.

Authors

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Abstract

Ethnopharmacological relevance: Breast cancer is a serious threat in low-income as well as developed countries. To face this, many herbal preparations are prescribed by traditional healers in Cameroon, among which is *Anonidium mannii* commonly called "wild soursop".

Aim: This study was undertaken to assess the anti-tumor effect of *A. mannii* ethanolic extract on cancer cell growth and against DMBA-induced mammary tumors in rats.

Materials and methods: The well characterized MTT bioassay was used to assess the cytotoxic potential of *A. mannii* ethanolic extract in liver (HepG2), prostate (DU145 & PC3) and breast (MCF-7) cancer cell lines. Considering the fact that breast cells were the most sensitive to the extract, a 7,12-dimethylbenz(a)anthracene (DMBA)-induced breast tumor rat model was used to assess the possible anticancer effect of *A. mannii* extract. Indeed, rats were treated with either tamoxifen (3.3 mg/kg BW) or *A. mannii* extract (16.5, 50 and 150 mg/kg BW) or vehicle (2% ethanol) for 20 weeks. Tumor incidence, tumor mass and volume, oxidative stress status in tumor as well as tumor histoarchitecture were evaluated.

Results: A 24 h incubation of tested cells with the *A. mannii* extract significantly slowed cell growth in a concentration-dependent manner with an interesting effect in breast cells ($IC_{50} \sim 61.5 \mu\text{g/mL}$). As compared to the DMBA rats, those treated with *A. mannii* extract (50 and 150 mg/kg) showed reduced breast tumor incidence (28%), tumor burden (95.34% at 50 mg/kg and 99.14% at 150 mg/kg) and tumor volume (~92%). *A. mannii* extract counteracted the high proliferation of terminal mammary ducts induced by DMBA, mainly at 50 mg/kg. Furthermore, the extract decreased MDA and nitrite levels but increased

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SOD activity in the mammary gland. High Performance Liquid Chromatography coupled with Mass Spectrometry (HPLC-MS) analysis detected potential anticancer and antioxidant alkaloids in *A. manni* extract, which are close to those found in *Annona muricata*.

Conclusion: These results provide evidence on the in vitro and in vivo anticancer effects of *A. manni*, and therefore support its use in traditional medicine system to fight against cancer.

35. [The Society for Integrative Oncology Practice Recommendations for online consultation and treatment during the COVID-19 pandemic](#)

Support Care Cancer. 2021 Oct;29(10):6155-6165. doi: 10.1007/s00520-021-06205-w. Epub 2021 Apr 14.

Authors

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Abstract

Objective: The Society for Integrative Oncology (SIO) Online Task Force was created in response to the challenges facing continuity of integrative oncology care resulting from the COVID-19 pandemic. The Task Force set out to guide integrative oncology practitioners in providing effective and safe online consultations and treatments for quality-of-life-concerns and symptom management. Online treatments include manual, acupuncture, movement, mind-body, herbal, and expressive art therapies.

Methods: The SIO Online Practice Recommendations employed a four-phase consensus process: (1) literature review and discussion among an international panel of SIO members, identifying key elements essential in an integrative oncology visit; (2) development, testing, and refinement of a questionnaire defining challenges and strategies; (3) refinement input from integrative oncology experts from 19 countries; and (4) SIO Executive Committee review identifying the most high-priority challenges and strategies.

Results: The SIO Online Practice Recommendations address ten challenges, providing practical suggestions for online treatment/consultation. These include overcoming unfamiliarity, addressing resistance among patients and healthcare practitioners to online consultation/treatment, exploring ethical and medical-legal aspects, solving technological issues, preparing the online treatment setting, starting the online treatment session, maintaining effective communication, promoting specific treatment effects, involving the caregiver, concluding the session, and ensuring continuity of care.

Conclusions: The SIO Online Practice Recommendations are relevant for ensuring continuity of care beyond the present pandemic. They can be implemented for patients with limited accessibility to integrative oncology treatments due to geographic constraints, financial difficulties, physical disability, or an unsupportive caregiver. These recommendations require further study in practice settings.

36. [The Effectiveness of Qigong in Managing a Cluster of Symptoms \(Breathlessness-Fatigue-Anxiety\) in Patients with Lung Cancer: A Randomized Controlled Trial](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211008253. doi: 10.1177/15347354211008253.

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Authors

[Alex Molassiotis](#)¹, [Dau Van Vu](#)², [Shirley Siu Yin Ching](#)¹

Abstract

Background and purpose: Qigong is used by cancer patients, but its effect is not adequately evaluated to date. The aim of this study was to investigate the effects of Qigong for the management of a symptom cluster comprising fatigue, dyspnea, and anxiety in patients with lung cancer.

Methodology: A total of 156 lung cancer patients participated in this trial, and they were randomized to a Qigong group (6 weeks of intervention) or a waitlist control group receiving usual care. The symptom cluster was assessed at baseline, at the end of treatment (primary outcome), and at 12 weeks, alongside measures of cough and quality of life (QOL).

Results: There was no significant interaction effect between group and time for the symptom cluster overall and for fatigue and anxiety. However, a significant trend towards improvement was observed on fatigue ($P = .004$), dyspnea ($P = .002$), and anxiety ($P = .049$) in the Qigong group from baseline assessment to the end of intervention at the 6th week (within-group changes). Improvements in dyspnea and in the secondary outcomes of cough, global health status, functional well-being and QOL symptom scales were statistically significant between the 2 groups ($P = .001, .014, .021, .001, \text{ and } .002$, respectively).

Conclusion: Qigong did not alleviate the symptom cluster experience. Nevertheless, this intervention was effective in reducing dyspnea and cough, and improving QOL. More than 6 weeks were needed, however, for detecting the effect of Qigong on improving dyspnea. Furthermore, men benefited more than women. It may not be beneficial to use Qigong to manage the symptom cluster consisting of fatigue, dyspnea, and anxiety, but it may be effective in managing respiratory symptoms (secondary outcomes needing further verification in future research). Future studies targeting symptom clusters should ensure the appropriateness of the combination of symptoms.

Trial registration: ClinicalTrials.gov Identifier: [NCT02977845](#). Registered November 30, 2016.
<https://clinicaltrials.gov/ct2/show/NCT02977845?term=Qigong&cond=Lung+Cancer&draw=2&rank=1>.

37. [Characteristics and Symptom Burden of Patients Accessing Acupuncture Services at a Cancer Hospital](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211002253. doi: 10.1177/15347354211002253.

Authors

[Suzanne J Grant](#)^{1 2}, [Ki Kwon](#)¹, [Diana Naehrig](#)^{2 3}, [Rebecca Asher](#)⁴, [Judith Lacey](#)^{1 2 3}

Abstract

Background: Patients with cancer are often impacted by a significant symptom burden. Cancer hospitals increasingly recognize the value of complementary and integrative therapies to support the management of cancer related symptoms. The aim of this study is to provide a better understanding of the demographic characteristics and symptoms experienced by cancer patients who access acupuncture services in a tertiary hospital in Australia.

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Methods: A retrospective audit was conducted of patients that presented to the acupuncture service at Chris O'Brien Lifehouse between July 2017 and December 2018. Edmonton Symptom Assessment Scale (ESAS) and Measure Yourself Concerns and Wellbeing (MYCaW) outcome measures were used. The quantitative data was analyzed using descriptive statistics and Principal Component Analysis.

Results: A total of 127 inpatients and outpatients (mean age 55, range 19-85) were included with 441 individual surveys completed (264 ESAS, 177 MYCaW). Patients were predominantly female (76.8%) and breast cancer was the most prevalent primary diagnosis (48%). The most prevalent symptoms in the ESAS were sleep problems (88.6%), fatigue (88.3%), lack of wellbeing (88.1%), and memory difficulty (82.6%). Similarly, symptoms with the highest mean scores were numbness, fatigue, sleep problems and hot flushes, whilst neuropathy, and hot flashes were scored as the most severe (score ≥ 7) by patients. Cluster analysis yielded 3 symptom clusters, 2 included "physical symptoms" (pain, sleep problems, fatigue and numbness/neuropathy), and (nausea, appetite, general well-being), whilst the third included "psychological" symptoms (anxiety, depression, spiritual pain, financial distress). The most frequent concerns expressed by patients (MyCaW) seeking acupuncture were side effects of chemotherapy (24.6%) and pain (20.8%).

Conclusion: This audit highlights the most prevalent symptoms, the symptoms with the greatest burden and the types of patients that receive acupuncture services at an Australian tertiary hospital setting. The findings of this audit provide direction for future acupuncture practices and research in hospital settings.

38. [Phenylpropanoid-conjugated pentacyclic triterpenoids from the whole plants of *Leptopus lolonum* induced cell apoptosis via MAPK and Akt pathways in human hepatocellular carcinoma cells](#)

Bioorg Chem. 2021 Jun;111:104886. doi: 10.1016/j.bioorg.2021.104886. Epub 2021 Apr 1.

Authors

[Shi-Zhou Qi](#)¹, [Xin-Xin Zhang](#)¹, [Yue Jin](#)¹, [Miao Wang](#)¹, [Li-Ping Long](#)², [Wen-Hua Jing](#)¹, [Kai-Ru Song](#)¹, [Da Wang](#)³, [Hui-Yuan Gao](#)⁴

Abstract

Our present and previous phytochemical investigations on *Leptopus lolonum* have resulted in the isolation of almost 30 phenylpropanoid-conjugated pentacyclic triterpenoids (PCPTs). During the continuous study on PCPTs, this kind of triterpenoid ester is considered as a natural product with low toxicity because of its widely distribution in natural plants and edible fruits including kiwi fruit, durian, jujube, pawpaw, apple and pear. In the present work, we report the isolation, structural elucidation and cytotoxic evaluation of four new PCPTs (1-4) which obtained from *L. lolonum*. In addition, the possible biosynthesis pathway for 28-norlupane triterpenoid and potent effect of phenylpropanoid moiety for increasing the cytotoxic effect of triterpenoids were also discussed. Among these compounds, compound 1 exhibited the highest cytotoxic effect on HepG2 cells with IC_{50} value of 11.87 μM . Further flow cytometry and western blot analysis demonstrated that 1 caused G1 cell cycle arrest by up-regulated the expression of phosphorylated p53 protein in HepG2 cells and induced cell apoptosis via MAPK and Akt pathways. These results emphasized the potential of PCPTs as lead compounds for developing anti-cancer drugs.

39. [Integrative medicine in the era of cancer immunotherapy: Challenges and opportunities](#)

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J Integr Med. 2021 Jul;19(4):291-294. doi: 10.1016/j.joim.2021.03.005. Epub 2021 Mar 18.

Authors

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- PMID: [33814325](#)
- DOI: [10.1016/j.joim.2021.03.005](#)

Abstract

Cancer immunotherapy has led to a new era of cancer treatment strategies, and transforming healthcare for cancer patients. Meanwhile, reports of immune-related adverse events have been increasing, greatly hindering the use of cancer immunotherapy. Traditional Chinese medicine (TCM), which has been widely used in Asian countries for thousands of years, is known to play a complementary role in the treatment of cancer. Taken in combined with conventional modern therapies, such as resection, ablation and radiotherapy, TCM exerts its main anti-cancer effects in two ways: health-strengthening (Fu-Zheng) and pathogen-eliminating (Qu-Xie). Theoretically, pathogen-eliminating TCM can promote the release of tumor-related antigens and should be able to increase the effect of immunotherapy, while health-strengthening TCM may have immune-enhancing mechanisms that overlap with immunotherapy. In the era of cancer immunotherapy, it is important to balance the use of TCM and immunotherapy, with the goal of enhancing immune efficacy and antagonizing immune toxicity. In this article, we discuss this issue by considering the mechanism of tumor immunotherapy, alongside the theoretical basis of TCM treatment of tumors, with the aim of bringing new insights to future research in this field.

40. [Liver Injury by the Traditional Chinese Medicine Hanshirento, Zenshikunshito, and Ninjin'yoeito in a Patient with Lung Cancer: Probable Causality Assessed by the Updated Roussel Uclaf Causality Assessment Method](#)

Integr Cancer Ther. Jan-Dec 2021;20:15347354211004734. doi: 10.1177/15347354211004734.

Authors

[Haruki Funakoshi](#)^{1 2}, [Kenji Momo](#)^{1 2}, [Ayaka Kashima](#)³, [Hitomi Ida](#)³, [Yoshito Miyata](#)³, [Hironori Sagara](#)³, [Tadanori Sasaki](#)^{1 2}

Abstract

Introduction: Traditional Chinese medicine (TCM) is a traditional treatment based on herbal medicines and holistic healing. It has resulted in both favorable and unfavorable patient outcomes when used to treat

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cancer. Cancer patients frequently depend on second opinions and folk remedies. In this case, we report the case of TCM inducing repeated moderate liver injury and delay for chemotherapy.

Case presentation: A 59-year-old woman was diagnosed with lung cancer and conducted surgery a month ago. She went to a TCM specialty clinic expecting a complete cure for the lung cancer, to improve her physical condition, and to enhance her immunity. She received the TCM formulas *hanshirento*, *zenshikunshito*, and *ninjin'yoeito*. After starting these medicines, she felt severe fatigue but continued them for approximately 2 weeks. After discontinuing the medicine, her fatigue was improved. She was admitted to our hospital for adjuvant chemotherapy. On admission, laboratory tests revealed moderate liver injury (AST: 705 U/L, ALT: 1091 U/L). In view of her medication history, the laboratory tests, and her lifestyle history, we thought that moderate liver injury was caused by TCM, employing the Roussel Uclaf Causality Assessment Method (RUCAM).

Discussion: TCM are known to be metabolized by the resident bacteria in the small intestine, but the specific metabolic processes are not well understood. Cancer patients sometimes try TCM from their own research to stay healthy. However, as with our case, TCM rarely induces liver injury, which is not well known to TCM users. Medical staffs need to be vigilant with their drug histories, including TCM, if patients have liver injuries.

41. [Perceptions of homeopathy in supportive cancer care among oncologists and general practitioners in France](#)

Support Care Cancer. 2021 Oct;29(10):5873-5881. doi: 10.1007/s00520-021-06137-5. Epub 2021 Mar 24.

Authors

[J L Bagot](#)^{1 2 3}, [I Theunissen](#)⁴, [A Serral](#)⁵

Abstract

Objectives: In France, homeopathy is the most frequently used complementary therapy in supportive care in oncology (SCO); its use is steadily increasing. However, data is limited about the perception and relevance of homeopathy by oncologists and general practitioners (GPs) both with and without homeopathic training (HGPs and NHGPs, respectively). Our aim was to evaluate French physicians' perceptions of homeopathy to clarify its place in SCO through two original observation survey-based studies.

Materials and methods: Two cross-sectional surveys of French physicians were conducted involving (1) 150 specialist oncologists; (2) 97 HGPs and 100 NHGPs. Questions evaluated physician attitudes to homeopathy and patterns of use of homeopathic therapies in patients requiring SCO. Survey responses were described and analyzed on the basis of physician status.

Results: Ten percent of oncologists stated they prescribe homeopathy; 36% recommend it; 54% think that homeopathy is potentially helpful in SCO. Two-thirds of the NHGPs sometimes prescribe homeopathy in the context of SCO and 58% regularly refer their patients to homeopathic doctors. HGPs have a positive perception of homeopathy in SCO.

Conclusions: Homeopathy is viewed favorably as an integrated SCO therapy by the majority of French physicians involved with cancer patients—oncologists and GPs. Symptoms of particular relevance include

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fatigue, anxiety, peripheral neuropathy, sleep disturbance, and hot flashes. In such clinical situations, response to conventional therapies may be suboptimal and homeopathy is considered a reliable therapeutic option. These two studies highlight the fact that homeopathy has gained legitimacy as the first complementary therapy in SCO in France.

42. [A survey of cancer patients, caregivers, and providers regarding familiarity, importance, and utilization of supportive and integrative oncology services](#)

Support Care Cancer. 2021 Oct;29(10):5777-5785. doi: 10.1007/s00520-021-06081-4. Epub 2021 Mar 19.

Authors

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Abstract

Purpose: Supportive and integrative oncology services aim to improve the quality of life of cancer patients. This study characterizes the views of these services among cancer patients, caregivers, and providers at a comprehensive cancer center.

Methods: A cross-sectional survey was administered in 2017-2018. The survey asked about participants' familiarity, perceived importance, use, accessibility, and barriers to 19 supportive and integrative oncology services using a Likert scale. Data were analyzed using the Kruskal-Wallis test and a proportional odds regression model.

Results: A total of 976 surveys were obtained (604 patient surveys, 199 caregiver surveys, 173 provider surveys). Patients were mostly female (56.3%), ≥60 years old (59.4%), and Caucasian (66%). Providers were an even distribution of nurses, physicians, and advanced practice providers. Patients felt social work and nutrition services were the most familiar (36.4% and 34.8%) and the most important (46.3% and 54.5%). Caregivers were also most familiar with those two services, but felt that nutrition and learning resources were most important. Social work and nutrition were easiest to access and used the most by both patients and providers. There was a positive correlation between accessibility and perceived importance. Being unaware was the most common barrier identified by patients (38.4%), providers (67.1%), and caregivers (33.7%).

Conclusion: Social work and nutrition services were most familiar to respondents, and also generally the most important, accessible, and utilized. Lack of awareness was the most common barrier cited and suggests that increased efforts to educate patients and providers about other services available are needed.

43. [Genetic Predictors of Response to Acupuncture or Cognitive Behavioral Therapy for Insomnia in Cancer Survivors: An Exploratory Analysis](#)

J Pain Symptom Manage. 2021 Sep;62(3):e192-e199. doi: 10.1016/j.jpainsymman.2021.03.002. Epub 2021 Mar 12.

Authors

[Timothy J Genovese](#)¹, [Philip Gehrman](#)², [MingXiao Yang](#)³, [Yuelin Li](#)⁴, [Sheila N Garland](#)⁵, [Irene Orlow](#)⁶, [Jun J Mao](#)⁷

Abstract

Context: Insomnia is a common problem affecting cancer survivors. While effective nonpharmacological treatments are available, it is unknown whether individual genetic characteristics influence treatment response.

Objectives: We conducted an exploratory analysis of genetic associations with insomnia treatment response in a randomized trial of cognitive behavioral therapy for insomnia (CBT-I) vs. acupuncture in a heterogeneous group of cancer survivors.

Methods: We successfully genotyped 136 participants for 11 genetic variants. Successful treatment response was defined as a reduction in Insomnia Severity Index score of at least eight points from baseline to week 8. We used Fisher exact tests to evaluate associations between genotype and treatment success for each treatment arm, for an alpha level of 0.05 with unadjusted and Holm-Bonferroni-adjusted P-values.

Results: We found that more carriers of COMT rs4680-A alleles responded to acupuncture compared to the GG carriers (63.6% vs. 27.8%, $P = 0.013$). More carriers of the NFKB2 rs1056890 CC genotype also responded to acupuncture compared to TT or CT carriers (72.2% vs. 38.9%, $P = 0.009$). There were no significant differences found between any of the tested gene variants and CBT-I response. None of the results remained statistically significant after adjustment for multiple testing.

Conclusion: In cancer survivors, specific variants in the COMT and NFKB2 genes are potentially associated with response to acupuncture but not to CBT-I. Confirming these preliminary results will help inform precision insomnia management for cancer survivors.

44. [Effect of Acupuncture on Ovary Morphology and Function in DHEA-Induced Polycystic Ovary Syndrome Model Rats](#)

Chin J Integr Med. 2021 Mar;27(3):220-224. doi: 10.1007/s11655-021-3290-0. Epub 2021 Mar 5.

Authors

[Dan Li](#)¹, [Peng Bai](#)², [Jin-Yang Wu](#)³, [Min Xie](#)⁴, [Rui-Zhen Zhao](#)⁵, [Zhong-Peng Wang](#)¹, [Xiao-Han Qi](#)¹

Abstract

Objective: To investigate the effects of acupuncture on ovary morphology and function in dehydroepiandrosterone (DHEA)-induced polycystic ovary syndrome (PCOS) model rats.

Methods: A total of 40 adult female Wistar rats were randomly allocated to 4 groups by a random number table, including control, model, metformin and acupuncture groups, 10 rats in each group. PCOS rat model was developed by injecting with DHEA (6 mg/100 g body weight) in 0.2 mL of oil subcutaneously. Electrical stimulation (2 Hz, 3 mA) was applied to Guanyuan (CV 4), Zigong (EX-CA1) and Qihai (CV 6) acupoints for 30 min daily in the acupuncture group, and metformin (200 mg/kg) was given to rats in the metformin group, both once per day for 21 consecutive days, and rats in the normal group was fed with normal saline and fed regularly. After 21 days of administration, the rat blood samples were collected for detecting the

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reproductive hormonal levels [luteinizing hormone (LH), follicle stimulating hormone (FSH), estradiol (E₂), progesterone (P), testosterone (T)] and inflammatory factors (visfatin, IL-6) analysis. Ovary tissue was used for histopathological analysis.

Results: Compared with the model group, rats in the acupuncture and metformin groups were significantly lower in weight gain, FSH, LH and T levels, and E₂ and P levels significantly increased (all P<0.05). Meanwhile, LH and FSH levels were significantly decreased, and P, T and E₂ levels significantly increased in the acupuncture group, compared with the metformin group (P<0.05). Compared with the model group, IL-6 and visfatin levels were significantly decreased in the acupuncture and metformin groups (P<0.05). There were no significant differences in IL-6 and visfatin levels between the acupuncture and metformin groups (P>0.05). Ovarian diameter in the acupuncture and metformin groups were smaller than the model group (P<0.05). However, there were no significant differences in ovarian diameters between the acupuncture and metformin groups (P>0.05).

Conclusion: Acupuncture might improve ovary morphology and its function in DHEA-induced PCOS model rats.

45. [Use of Homeopathy in Integrative Oncology in Strasbourg, France: Multi-center Cross-Sectional Descriptive Study of Patients Undergoing Cancer Treatment](#)

Homeopathy. 2021 Aug;110(3):168-173. doi: 10.1055/s-0040-1721065. Epub 2021 Mar 4.

Authors

[Jean-Lionel Bagot](#)¹, [Adeline Legrand](#)², [Ingrid Theunissen](#)³

Abstract

Context: The use of homeopathy in oncological supportive care seems to be progressing. The first French prevalence study, performed in 2005 in Strasbourg, showed that only 17% of the subjects were using it. What is the situation 12 years later?

Materials and methods: This is a descriptive study, using a questionnaire identical to that used in 2005, on 633 patients undergoing treatment in three anti-cancer centers in Strasbourg. The results of the "homeopathy" sub-group were extracted and studied.

Results: Of the 535 patients included, 164 used homeopathy: that is 30.7%. The main purpose of its use was to reduce the side effects of cancer treatments (75%). Among the users, 82.6% were "somewhat" or "very" satisfied, against "quite" satisfied for 15.5%, and "not at all" satisfied for 1.9%. The homeopathic treatment was prescribed by a doctor in 75.6% of the cases; the general practitioner was kept informed in 87% of the cases and the oncologist in 82%. Fatigue, pain, nausea, anxiety, sadness and diarrhea were improved in 80% of the cases. However, alopecia, weight disorders and loss of libido were the least improved symptoms. The use of homeopathy was significantly associated with the female sex.

Conclusion: With a prevalence of 30.7%, homeopathy is the most used complementary medicine in integrative oncology in Strasbourg. Over 12 years, we have witnessed an increase of 83% in its use in the same city. Almost all respondents declare themselves satisfied and tell their doctors more readily than in 2005.

46. [Electroacupuncture Attenuates Morphine Tolerance in Rats with Bone Cancer Pain by Inhibiting PI3K/Akt/JNK1/2 Signaling Pathway in the Spinal Dorsal Horn](#)

Integr Cancer Ther. Jan-Dec 2021;20:1534735421995237. doi: 10.1177/1534735421995237.

Authors

[Bin Jiang](#)^{1 2}, [Xuemei Zhong](#)^{2 3}, [Junfan Fang](#)², [Aijun Zhang](#)¹, [Wen WangD](#)², [Yi Liang](#)², [Jiangqiao Fang](#)², [Feng Chen](#)¹, [Junying Du](#)²

Abstract

Purpose: Morphine is often used for the treatment of moderate and severe cancer pain, but long-term use can lead to morphine tolerance. Methods for effectively inhibiting morphine tolerance and the related mechanism of action are of great significance for the treatment of cancer pain. Previous studies have shown that electroacupuncture (EA) can inhibit the occurrence of morphine tolerance, but the mechanism is not yet clear. The aim of the present study was to explore the signaling pathway by which EA attenuates the development of bone cancer pain (BCP)-morphine tolerance (MT).

Materials and methods: Changes in the paw withdrawal threshold (PWT) of rats with bone cancer pain-morphine tolerance were observed in a study of EA combined with intrathecal injection of a PI3K inhibitor (LY294002) or agonist (insulin-like growth factor-1 [IGF-1]). We also tested the protein expression of phosphorylated phosphatidylinositol 3-kinase (p-PI3K), phosphorylated protein kinase B (p-Akt), phosphorylated c-Jun NH₂-terminal kinase 1/2 (p-JNK1/2), and β -arrestin2 in the L4-6 spinal dorsal horn of rats.

Results: The protein expression of p-PI3K, p-Akt, p-JNK1/2, and β -arrestin2 was upregulated in the L4-6 spinal dorsal horn of rats with bone cancer pain and bone cancer pain-morphine tolerance. EA delayed the occurrence of morphine tolerance in rats with bone cancer pain and downregulated the protein expression of p-PI3K, p-Akt, p-JNK1/2, and β -arrestin2 in the L4-6 spinal dorsal horn of rats with bone cancer pain-morphine tolerance. Intrathecal injection of LY294002 attenuated the development of morphine tolerance and downregulated the protein expression of p-Akt, p-JNK1/2, and β -arrestin2 in the spinal dorsal horn of rats with bone cancer pain-morphine tolerance. In addition, the inhibitory effect of EA on morphine tolerance was reversed by IGF-1.

Conclusion: The mechanism underlying the ability of EA to attenuate morphine tolerance may be associated with inhibition of the PI3K/Akt/JNK1/2 signaling pathway.

47. [Understanding interest, barriers, and preferences related to yoga practice among cancer survivors](#)

Support Care Cancer. 2021 Sep;29(9):5313-5321. doi: 10.1007/s00520-021-06083-2. Epub 2021 Mar 4.

Authors

[Krupali Desai](#)¹, [Ting Bao](#)², [Qing S Li](#)², [Nirupa J Raghunathan](#)², [Kelly Trevino](#)³, [Angela Green](#)⁴, [Han Xiao](#)⁵, [Jun J Mao](#)²

Abstract

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Purpose: Despite growing evidence supporting the benefits of yoga for cancer-related symptom management, yoga usage among cancer survivors is low. To translate the evidence of yoga benefits into community practice, it is critical to understand interest in yoga as well as barriers and preferences that influence yoga usage among cancer survivors.

Method: We conducted a cross-sectional survey study among cancer survivors, 18 years or older, with a primary diagnosis of cancer, and receiving treatment or follow-up care at outpatient clinics at five regional academic cancer center sites. We collected data and performed bivariate and multivariable analyses on self-reported yoga usage and interest in and barriers to practicing yoga, as well as preferred location and time for yoga practice.

Results: Of 857 participants, 70.0% had never practiced yoga and 52.3% were interested in practicing yoga. Among those interested, 52.5% had never practiced yoga. Lower interest was independently associated with being male (odds ratio [OR] = 0.30, 95% confidence interval [CI] = 0.20-0.44, $p < 0.001$), unemployed (OR = 0.60, 95% CI = 0.39-0.91, $p = 0.016$), and white (OR = 0.42, 95% CI = 0.23-0.78, $p = 0.005$). Commonly cited barriers among those who were interested but had never practiced were not aware of yoga benefits (36.3%), difficulty motivating (28.7%), experiencing symptoms (22.9%), and not enough time (22.0%). Participants indicated "on-site and at a studio near home" (41.5%) as preferred location and evenings (3-8 pm, 34.0%) as preferred time for yoga practice.

Conclusion: Although more than 50% of patients indicated interest in practicing yoga, use of yoga is low among cancer survivors. Barriers and patient preferences for yoga practice need to be addressed to design effective yoga programs for this population.

48. [Effects of moxibustion on Treg cells in sarcoma microenvironment](#)

J Integr Med. 2021 May;19(3):251-257. doi: 10.1016/j.joim.2021.02.001. Epub 2021 Feb 13.

Authors

[Li-Jun Li](#)¹, [Yu-Chong Shi](#)², [Min-Xiang Luo](#)¹, [Chang-Lin Zhao](#)³

Abstract

Objective: To investigate the therapeutic effect of moxibustion on sarcomas from mesenchymal tissues, which have a low response rate to chemotherapy and radiotherapy.

Methods: S180 sarcoma cell line was inoculated in C57BL/6 mice to form transplanted tumor. Moxibustion therapy was directly applied at the transplanted tumor sites, at a distance of 3.0 cm, 10 min per session, till skin temperature reached 45 °C, once a day, for 14 consecutive days of intervention. After the mice were killed, serum was collected and used to detect concentrations of interleukin-10 (IL-10), transforming growth factor- β 1 (TGF- β 1), IL-4 and interferon- γ (IFN- γ) by Luminex liquid suspension chip. The numbers of Treg⁺ T cells and CD4⁺CD25⁺Forkhead Box P3 (Foxp3)⁺ T cells were detected by flow cytometry. Fluorescence in situ hybridization was used to analyze the changes of CD4, CD8, Foxp3 and TGF- β 1 in the tumor microenvironment (TME).

Results: Weight of S180 transplanted tumor in the control group was (2.03 \pm 0.54) g, and that in the moxibustion group was (1.27 \pm 0.29) g, which was statistically different ($P = 0.023$). The mean value of Foxp3⁺ T cells in the normal group was 2.01%, which increased to 3.63% after the formation of

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transplanted tumor, and decreased to 1.48% after moxibustion treatment. The moxibustion group also had reduced numbers of CD4⁺CD25⁺Foxp3⁺ T cells in the spleen of mice with transplanted tumor. The concentrations of IL-10, TGF-β1 and IL-4 decreased in the serum of mice with transplanted tumor, while the concentration of IFN-γ increased. Moxibustion was associated with downregulation in expression of Foxp3, IL-10 and TGF-β1 genes in the transplanted tumor, and increases in the gene expression of CD4⁺ T cells and CD8⁺ T cells in the TME.

Conclusion: Moxibustion may have therapeutic effects on sarcomas by reducing the number of Treg cells in the blood and controlling the infiltration of Treg cells in the TME.

49. [Looking out to see within: A photography project developed by adolescents with cancer during the COVID pandemic](#)

Pediatr Blood Cancer. 2021 May;68(5):e28948. doi: 10.1002/pbc.28948. Epub 2021 Feb 24.

Authors

[Andrea Ferrari](#)¹, [Alice Patriccioli](#)¹, [Matteo Silva](#)¹, [Michela Casanova](#)¹, [Stefano Signoroni](#)², [Maura Massimino](#)¹

No abstract available

50. [Common paraverbal errors during hypnosis intervention training](#)

Am J Clin Hypn. 2021 Jan;63(3):252-268. doi: 10.1080/00029157.2020.1822275.

Authors

[Guy H Montgomery](#)¹, [Joseph P Green](#)², [Joel Erbllich](#)¹, [James Force](#)¹, [Julie B Schnur](#)¹

Abstract

There is growing literature to support the use of hypnosis as an evidence-based behavioral medicine intervention to manage a wide variety of symptoms and side effects associated with cancer and its treatment (e.g., pain, nausea, fatigue). However, formal training in hypnosis is often lacking among cancer care providers. The purpose of this study is to identify common paraverbal errors among hypnosis trainees in order to inform future training efforts. In a sample of 196 hypnosis trainees, paraverbal errors (i.e., tone, pacing, and phrasing) were tracked across hypnotic intervention components. Results revealed that trainees had most difficulty with hypnotic tone, particularly during the Induction, Deepening, and Alerting components. Individual trainee characteristics were unrelated to paraverbal errors.

51. [Acupuncture for Arthralgia Induced by Aromatase Inhibitors in Patients with Breast Cancer: A Systematic Review and Meta-analysis](#)

Integr Cancer Ther. Jan-Dec 2021;20:1534735420980811. doi: 10.1177/1534735420980811.

Authors

[Xiaomeng Liu](#)^{1 2}, [Jing Lu](#)², [Guoxin Wang](#)¹, [Xiu Chen](#)², [Haiping Xv](#)², [Jing Huang](#)³, [Mingxin Xue](#)^{1 2}, [Jinhai Tang](#)²

Abstract

Background: Aromatase inhibitor-induced arthralgia (AIA) is the most common side effect of aromatase inhibitors (AIs) used in breast cancer patients and is related to the rate of adherence to AIs. The clinical effects of acupuncture on AIA have been assessed by some randomized controlled trials (RCTs). However, some studies reported that acupuncture was effective, while others claimed that it was ineffective. To clarify the clinical and placebo effects of acupuncture in treating AIA, we conducted this meta-analysis.

Methods: Two reviewers (XL and GW) independently searched for RCTs in 5 English databases (PubMed, Web of Science, Embase, Springer, Cochrane Library) and 4 Chinese databases (China National Knowledge Infrastructure Database (CNKI), SinoMed, VIP and Wanfang Database) from their inception to 30 November 2019. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, this meta-analysis was performed by fixed or random-effects models, and data were pooled with mean differences (MDs).

Results: Seven trials involving 603 patients were reviewed. The primary outcome, the Brief Pain Inventory (BPI) score, significantly differed between the acupuncture and control groups [pain-related interference: MD = -1.89, 95% confidence interval (CI) [-2.99, -0.79], $Z = 3.36$ ($P = .008 < .05$), pain severity: MD = -1.57, 95% CI [-2.46, -0.68], $Z = 3.45$ ($P = .0006 < .05$), worst pain: MD = -2.31, 95% CI [-3.15, -1.48], $Z = 5.47$ ($P < .0001 < .05$)]. No severe adverse events were reported in any study.

Conclusion: This meta-analysis showed that acupuncture is a safe and effective treatment for breast cancer patients with AIA. Additional research with improved blinding methods is warranted to further explore the nature of non-specific and placebo effects in true and sham acupuncture.

52. [Hormone replacement therapy after breast cancer: Yes, No or maybe?](#)

Mol Cell Endocrinol. 2021 Apr 5;525:111180. doi: 10.1016/j.mce.2021.111180. Epub 2021 Jan 26.

Authors

[Stacy K Ugras](#)¹, [Rakhshanda Layeequr Rahman](#)²

Abstract

Over nine million breast cancer survivors worldwide suffer compromised quality of life attributable to estrogen depletion related symptoms of menopause and side effects of cancer therapy. Hormone Replacement Therapy (HRT) is very effective in managing these symptoms in general population and in breast cancer survivors. However, the concern of breast cancer recurrence as a result of HRT use keeps many oncologists from using this approach in symptom management. Evidence from randomized trials, observational studies and met-analyses on the impact of HRT use on breast cancer recurrence and survival remains controversial. Climacteric symptoms in breast cancer survivors should be delineated for type and severity for methodical management. Lifestyle modifications are effective for mild symptoms, while non-hormonal pharmaceutical approaches can be used as second-line therapy for control of hot flashes, vulvo-vaginal atrophy, arthralgia, mood swings, sleep disturbance, and depression. Evidence does not conclusively render HRT, as a contraindicated approach for these patients; informed consent and shared-decision-making is a reasonable approach for HRT use in symptomatic breast cancer survivors.

53. [Letter to the Editor: Music Meet Up-Preliminary Results of a Novel Music Therapy Group Intervention for Adolescents and Young Adults with Cancer](#)

J Adolesc Young Adult Oncol. 2021 Jun;10(3):359-360. doi: 10.1089/jayao.2020.0181. Epub 2021 Jan 27.

Authors

[Mahsa Samadi](#)¹, [Jonathan Avery](#)^{1 2}, [SarahRose Black](#)^{1 2 3}, [Abha Gupta](#)^{1 4 5}, [Chana Korenblum](#)^{1 2 4 5 6}

No abstract available

54. [Effects of yoga on improving quality of life in patients with breast cancer: a meta-analysis of randomized controlled trials](#)

Breast Cancer. 2021 Mar;28(2):264-276. doi: 10.1007/s12282-020-01209-6. Epub 2021 Jan 15.

Authors

[Er-Jung Hsueh](#)¹, [El-Wui Loh](#)^{2 3 4}, [Joyce Jui-An Lin](#)^{# 5}, [Ka-Wai Tam](#)^{# 6 7 8 9}

Abstract

Background: Complications of breast cancer treatment can cause physical and psychosocial distress in patients. Yoga demonstrates substantial potential as a supportive therapy for patients with breast cancer. Our aim is to conduct a meta-analysis of randomized controlled trials to evaluate the effectiveness of yoga in enhancing the quality of life (QoL) of patients with breast cancer.

Methods: We searched for studies published before March 2020 in the PubMed, Embase, and Cochrane Library databases. Individual effect sizes were standardized, and the pooled effect size was calculated using a random effect model. Measured outcomes included QoL, anxiety and depression, stress, fatigue, pain severity, and sleep quality.

Results: In total, 26 trials involving 2069 patients were reviewed. Significant enhancement in QoL was observed immediately after the yoga intervention. The pooled mean differences in social (weighted mean difference [WMD]: 1.36, 95% confidence interval [CI] 0.12-2.61), emotional (WMD: 1.46, 95% CI 0.26-2.66), and functional well-being (WMD: 2.04, 95% CI 0.21-3.87) were significantly higher in the yoga group than in the control group. Patients practicing yoga exhibited significant improvements in physical well-being, mental well-being, and sleep quality as well as reductions in anxiety, depression, stress, fatigue, and pain severity after the intervention.

Conclusions: Yoga may enhance QoL in patients with breast cancer experiencing post-treatment complications. Therefore, we recommend yoga as a supportive therapy for patients with breast cancer to relieve post-treatment distress.

55. [Effect of Tai Chi and Resistance Training on Cancer-Related Fatigue and Quality of Life in Middle-Aged and Elderly Cancer Patients](#)

Chin J Integr Med. 2021 Apr;27(4):265-272. doi: 10.1007/s11655-021-3278-9. Epub 2021 Jan 9.

Authors

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[Duan Cheng](#)¹, [Xuan Wang](#)¹, [Jie Hu](#)¹, [Ling-Li Dai](#)¹, [Ying Lv](#)¹, [Hui Feng](#)², [Yan Zhang](#)³, [Yan Guo](#)⁴, [Lei Wang](#)⁵

Abstract

Objective: To study the effect of Tai Chi (TC) and resistance training (RT) with different intensity on the cancer-related fatigue (CRF) and quality of life (QoL) of middle-aged and elderly cancer patients.

Methods: Totally 120 cancer patients were enrolled and randomly assigned to 4 groups by a random number table, including TC group, high-intensity 60% one repetition maximum (1-RM) RT group (HIRT), low-intensity (30% 1-RM) RT group (LIRT) and control group, 30 patients in each group. Participants in the TC group received 24-form simplified Yang-style TC training at a frequency of 40 min per day, 3 days per week for 12 weeks. Patients in the two RT groups received 10 sessions, 6 designated movements per day, 3 days per week for 12 weeks. The 1-RM of 6 muscle groups, fat mass (FM), lean body mass (LBM), along with the scores of Brief Fatigue Inventory (BFI), QoL questionnaire for Chinese cancer patients receiving chemobiotherapy (QLQ-CCC), Generalized Anxiety Disorder-7 (GAD-7), Patient Health Questionnaire-9 (PHQ-9) and Pittsburgh Sleep Quality Index (PSQI) were measured before and after training. The adverse effect was also observed.

Results: After 12-week intervention, patients in both TC and RT groups showed significant improvements in CRF and QLQ-CCC compared to pre-treatment ($P < 0.05$). Compared with the LIRT and TC groups, patients in the HIRT group improved more significantly in increasing muscle strength and LBM, and reducing in FM ($P < 0.05$). Patients in the TC group significantly increased in lower limb muscle strength compared with the LIRT group ($P < 0.05$). In addition, patients in the TC group showed more significant improvements in scores of GAD-7, PHQ-9 and PSQI than 2 RT groups ($P < 0.05$).

Conclusions: TC and RT, both low- and high-intensity training, can significantly increase muscle strength, reduce CRF and improve QoL in the middle-aged and elderly cancer patients. TC has a better effect than RT in terms of sleep quality and mental health. The long-term application is needed to substantiate the effect of TC as an alternative exercise in cancer patients.

56. [Prevalence of Complementary/Alternative Medicine use in Cancer Patients in a Tertiary Hospital in Puerto Rico](#)

P R Health Sci J. 2020 Dec;39(4):294-299.

Authors

[Daniel Torres-Vega](#)¹, [Fernando Cabanillas](#)², [Noridza Rivera](#)³, [Pedro Sollivan](#)⁴, [Wandaly Pardo](#)⁴, [Caroline Rivera](#)⁴, [Muay Hernandez](#)⁵

Abstract

Objective: We conducted a study in a tertiary hospital to investigate complementary and alternative medicine (CAM) prevalence in a Puerto Rican population. The study also evaluated demographic and clinical factors in order to correlate them with CAM use.

Methods: Spanish speaking residents with a known diagnosis of cancer being followed in the outpatient facilities at Auxilio Mutuo Cancer Center were invited to participate in the study. Patients who read and

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signed a consent form were given a questionnaire inquiring, among various things, on their use of any CAM treatment, education level, gender, place of residence and whether they had consulted their oncologist. The questionnaire also asked about their expectations for use of CAM.

Results: 215 patients were approached to participate out of which 200 signed the consent and accepted to participate. A total of 95 of 200 patients (47.5%) mentioned that they utilized at least one CAM treatment. Six factors were then analyzed for their correlation with CAM usage and three yielded statistically significant results at $p < .05$: age group, education level, and area of residence. After multivariate analysis all of these three factors behaved as independent variables. Gender, tumor type and stage were not significantly associated with use of CAM.

Conclusion: Our data show that CAM use is significantly more common in those with higher education, younger age, and those living in non-metropolitan areas. Vitamin C and soursop (Graviola or guanábana) proved to be the two most common CAM treatments, respectively.

57. [How to Talk to Children and Adolescents With Cancer About Spirituality? Establishing a Conversation Model](#)

J Pediatr Oncol Nurs. Mar-Apr 2021;38(2):116-130. doi: 10.1177/1043454220975703. Epub 2020 Dec 3.

Authors

[Willyane de Andrade Alvarenga](#)^{1 2}, [Ana Carolina Andrade Biaggi Leite](#)³, [Amanda Aparecida Menochelli](#)³, [Rebecca Ortiz La Banca](#)⁴, [Paula Saud De Bortoli](#)³, [Rhyquelle Rhibna Neris](#)³, [Lucila Castanheira Nascimento](#)³

Abstract

Talking to children and adolescents with cancer about spirituality is a challenge. This study aimed to develop and evaluate a conversation model for a spiritual approach with children and adolescents with cancer. It was a methodological study with a systematic approach in three stages: (a) review of the literature for the selection of photographs and guiding questions, (b) using an expert committee to evaluate photographs and preselected questions, and (c) cognitive interview with children and adolescents to test the methodology. The expert committee evaluated and selected 20 photos and their respective guiding questions. Fifteen children and adolescents hospitalized with cancer tested the spirituality conversation model and expressed feelings, values, beliefs, fears, and the meaning they give to life and illness. The implementation of the conversation model can contribute both to the clinical practice, facilitating care for the spiritual dimension of pediatric patients, and to qualitative research on spirituality involving children.

58. [Guidelines for Cancer-Related Pain: A Systematic Review of Complementary and Alternative Medicine Recommendations](#)

Pain Pract. 2021 Apr;21(4):454-467. doi: 10.1111/papr.12964. Epub 2020 Dec 4.

Authors

[Jeremy Y Ng](#)¹, [Alisha E Sharma](#)¹

Abstract

Background and objective: Although up to 85% of patients with cancer use complementary and alternative medicine (CAM), they commonly do not disclose this information to their healthcare providers. Cancer-related pain (CRP) is one of the most common symptoms among those who may seek CAM. This study was conducted to identify the quantity and assess the quality of CAM recommendations across clinical practice guidelines (CPGs) for the treatment and/or management of CRP, as this has not been explored in the literature.

Methods: A systematic review was conducted to identify cancer pain CPGs. MEDLINE, EMBASE, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) were searched from 2009 to 2020. The Guideline International Network and the National Centre for Complementary and Integrative Health websites were also searched. Eligible CPGs on CRP in adults were assessed using the Appraisal of Guidelines, Research and Evaluation II (AGREE II) instrument.

Results: Of 771 unique search results, 13 mentioned CAM and 11 made CAM recommendations. Eligible CPGs were published in 2009 or later and focused on the treatment/management of CRP. Scaled domain percentages from highest to lowest ranged from (overall, CAM): 88.1%, 88.1% (for scope and purpose) to 21.0%, 8.5% (for applicability). Quality varied within and across CPGs. One CPG was recommended by both appraisers; 6 were recommended as "Yes" or "Yes with modifications."

Conclusions: The present study has identified and summarized a number of CPGs that clinicians may consult to understand what CAMs are recommended in the context of the treatment and/or management of CRP.

59. [Systems pharmacology in combination with proteomics reveals underlying mechanisms of Xihuang pill against triple-negative breast cancer](#)

Bioengineered. 2020 Dec;11(1):1170-1188. doi: 10.1080/21655979.2020.1834726.

Authors

[Xingchao Xu](#)¹, [Jimei Zhang](#)², [Zhenhua Zhang](#)³, [Meng Wang](#)³, [Yaping Liu](#)³, [Xiangqi Li](#)¹

Abstract

Xihuang pill (XHP), a traditional Chinese herbal formula, has been clinically used as an adjuvant therapy against triple-negative breast cancer (TNBC) via inhibiting cancer cell invasion and proliferation, as well as promoting cancer cell apoptosis. However, its anti-TNBC bio-active ingredients and possible mechanisms are still unclear. Herein, the hub bio-active compounds and underlying mechanisms of XHP against TNBC were systematically elucidated by integrating systems pharmacology approach and *in vitro* proteomics analysis. Using systems pharmacology analysis and molecular docking evaluation, 28 bio-active compounds and 10 potential therapeutic targets of XHP were identified. Functional analysis showed that the core therapeutic targets against TNBC were mainly involved in epidermal growth factor receptor (EGFR)-phosphatidylinositol 3-kinase (PI3K)-AKT signaling pathway to prevent cancer cell proliferation and angiogenesis, as well as to enhance cancer cell apoptosis. The *in vitro* proteomics analysis identified 153 differentially expressed proteins (DEPs), including HASP90AA1, AKT1, and EGFR, which were also identified as therapeutic targets against TNBC through systems pharmacology analysis. Protein function analysis

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showed that the DEPs were mainly involved in PI3K-AKT signaling pathway, which was consistent with the result of systems pharmacology, suggesting the reliability of systems pharmacology analysis. Taken together, these findings uncover the underlying mechanism of XHP against TNBC, and provide a scientific method for the rational development of traditional Chinese medicine.

60. [Comparison of Grenz ray and photodynamic therapy for field treatment of actinic keratoses on the forearm: A case series](#)

Australas J Dermatol. 2021 Feb;62(1):64-68. doi: 10.1111/ajd.13439. Epub 2020 Oct 11.

Authors

[Lauren Angnardo](#)¹, [Christopher M Wolfe](#)¹, [W Harris Green](#)¹, [Armand B Coggnetta Jr](#)¹

Abstract

Background: Actinic Keratosis is an intraepidermal neoplasm that represents the second most common reason for dermatologic visits in the United States. Sustained clearance with existing therapies is highly variable.

Objective: To assess the effects of combination and monotherapy with photodynamic therapy (PDT), grenz ray therapy, and PDT with microneedling (microchannel skin system) for actinic damage of the dorsal forearms and hands.

Methods: Full ethics approval was obtained through a Human Subjects Committee. Four patients with diffuse actinic field damage on their forearms and hands were recruited for the study. The dorsal forearm and hand from the elbow to the metacarpophalangeal joint were divided into four equal sections. Section 1 was treated with PDT. Section 2 was treated with grenz ray. Section 3 was treated with PDT plus microneedling. Section 4 was treated with grenz ray and PDT with microneedling. Lesion counts were recorded with transparent grids, photographed and evaluated by the same investigator at baseline, 1, 2, 3 and 6 months.

Results: At month 6 post treatment, lesion counts, as a per cent reduction from baseline, were 91.7% in section 1 (PDT); 97.3% in section 2 (grenz ray); 92.9% in section 3 (PDT + microneedle); and 93.9% in section 4 (grenz ray + PDT + microneedle).

Conclusion: The greatest reduction occurred in the grenz ray monotherapy section and the second greatest reduction in the grenz ray, PDT, microneedling section. Further research on the efficacy of grenz ray therapy for field treatment of actinic keratosis of the forearms and hands is needed.

61. [Efficacy of topical Calendula officinalis on prevalence of radiation-induced dermatitis: A randomised controlled trial](#)

Australas J Dermatol. 2021 Feb;62(1):e35-e40. doi: 10.1111/ajd.13434. Epub 2020 Sep 23.

Authors

[Shihab Siddiquee](#)¹, [Margaret A McGee](#)², [Andrew D Vincent](#)², [Eileen Giles](#)³, [Robyn Clothier](#)⁴, [Scott Carruthers](#)⁴, [Michael Penniment](#)⁴

Abstract

Objectives: A randomised controlled trial was undertaken to compare the efficacy of topical *Calendula officinalis* (*Calendula*) versus standard of care (Sorbolene: 10% glycerine in cetomacragol cream) in reducing the prevalence of radiation-induced dermatitis in women undergoing breast cancer radiotherapy.

Methods: A total of 271 women were screened and 82 were randomised. The primary outcome was prevalence of acute radiation-induced dermatitis (RTOG grade 2+) assessed at multiple skin sites. A chi-squared test was conducted for the primary outcome with a worst-case scenario imputation.

Results: The recruitment target (n = 178) was not achieved. A total of n = 81 participants were analysed (n = 40 *Calendula*; n = 41 Sorbolene). There was no detectable difference in prevalence of radiation-induced dermatitis grade 2+ between the *Calendula* (53%) and Sorbolene (62%) groups (primary analysis OR = 0.87, 95% CI: [0.36, 2.09], P = 0.92; covariate adjusted complete case analysis OR 0.40, 95% CI: [0.13, 1.20], P = 0.10).

Conclusion: This randomised controlled trial showed no difference between *Calendula* and standard of care (Sorbolene) for the prevention of radiation-induced dermatitis. However, the study was underpowered (limited recruitment) for the primary comparison.

62. [The Anti-Tumor Effects of *Oenothera odorata* Extract Are Mediated by Inhibition of Glycolysis and Cellular Respiration in Cancer Cells](#)

Nutr Cancer. 2021;73(10):2078-2088. doi: 10.1080/01635581.2020.1824000. Epub 2020 Sep 23.

Authors

[Yeji Lee](#)¹, [Sang Hyuk Park](#)¹, [Jung-Hoon Lee](#)¹, [Hyung Won Ryu](#)², [Hyun-Jae Jang](#)², [Won Jun Kim](#)², [Eunmi Hwang](#)³, [Sung-Jo Kim](#)³, [Hyun Sik Jun](#)¹, [Un-Hwan Ha](#)¹

Abstract

Cancer is caused by uncontrolled cell division and is a leading cause of mortality worldwide. *Oenothera odorata* (*O. odorata*) extract is used in herbal medicine to inhibit inflammation, but its potential anti-tumor properties have not been fully evaluated. Here, we demonstrated that *O. odorata* extract inhibits the proliferation of lung adenocarcinoma and melanoma cell lines In Vitro, and also inhibits the growth of melanoma cells In Vivo. After partitioning the extract with *n*-hexane, chloroform, ethyl acetate, and *n*-butanol, it was found that the butanol-soluble (OOB) and water-soluble (OOW) fractions of *O. odorata* extract are effective at inhibiting tumor cell growth In Vivo although OOW is more effective than OOB. Interestingly, these fractions did not inhibit the growth of non-cancerous cells. The anti-proliferative effects of the OOW fraction were found to be mediated by inhibition of glycolysis and cellular respiration. UPLC of both fractions showed two major common peaks, which were predicted to be hydrolyzable tannin-related compounds. Taken together, these data suggest that *O. odorata* extract has anti-tumor properties, and the molecular mechanism involves metabolic alterations and inhibition of cell proliferation. *O. odorata* extract therefore holds promise as a novel natural product for the treatment of cancer.

63. [RENISUS Plants and Their Potential Antitumor Effects in Clinical Trials and Registered Patents](#)

Nutr Cancer. 2021;73(10):1821-1848. doi: 10.1080/01635581.2020.1810290. Epub 2020 Aug 24.

Authors

[Diorge Jônatas Marmitt](#)¹, [Shanna Bitencourt](#)¹, [Gustavo Rodrigo da Silva](#)², [Claudete Rempel](#)³, [Márcia Inês Goettert](#)¹

Abstract

Cancer is a significant cause of morbidity and mortality. Scientific advances, coupled with potential flaws in current treatments, are driving research into the discovery of new bioactive molecules. This systematic review focused on scientific studies with clinical trials and patents registered on the National Relation of Medicinal Plants of Interest to the Unified Health System (RENISUS) plants (or derivative compounds) with antitumor potential. Studies with 19 different forms of cancer were found, the prostate being the organ with the highest research incidence and the species *Glycine max*, *Curcuma longa*, and *Zingiber officinale*, beside the phytochemicals curcumin and soy isoflavone were the most tested in clinical trials/patents.

64. [Antiproliferative Activity and Apoptotic Efficiency of Syzygium cumini Bark Methanolic Extract against EAC Cells In Vivo](#)

Anticancer Agents Med Chem. 2021;21(6):782-792. doi: 10.2174/1871520620666200811122137.

Authors

[Ayesha Siddika](#)¹, [Plabon K Das](#)¹, [Saharia Y Asha](#)¹, [Suraiya Aktar](#)¹, [Abu R M Tareq](#)², [Ayesha Siddika](#)³, [Abdur Rakib](#)¹, [Farhadul Islam](#)¹, [Jahan Ara Khanam](#)¹

Abstract

Background: *Syzygium cumini* is one of the evidence-based traditional medicinal plant used in the treatment of various ailments.

Objectives: Herein, the antioxidant property and anticancer property of *Syzygium cumini* against Ehrlich Ascites Carcinoma (EAC) cells were examined to find effective chemotherapeutics.

Methods: In vitro assays, and phytochemical and chromatographic analyses were used to determine antioxidant properties and chemical constituents of *Syzygium cumini* Bark Methanolic Extract (SCBME). Functional assays were used to measure the anticancer activity of SCBME. Fluorescence microscopy and RT-PCR were used to examine morphological and molecular changes of EAC cells followed by SCBME treatment.

Results: Phytochemical and GC-MS analyses confirmed the presence of compounds with antioxidant and anticancer activities. Accordingly, we have noted a strong antioxidant activity of SCBME with an IC₅₀ value of ~10µg/ml. Importantly, SCBME exerted a dose-dependent anticancer activity with significant inhibition of EAC cell growth (71.08±3.53%; p<0.001), reduction of tumor burden (69.50%; p<0.01) and increase of life span (73.13%; p<0.001) of EAC-bearing mice at 75mg/kg/day. Besides, SCBME restored the blood toxicity towards normal in EAC-bearing mice (p<0.05).

Discussion: SCBME treated EAC cells showed apoptotic features under a fluorescence microscope and fragmented DNA in DNA laddering assay. Moreover, up-regulation of the tumor suppressor p53 and pro-

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apoptotic Bax and down-regulation of NF- κ B and anti-apoptotic Bcl-2 genes implied induction of apoptosis followed by SCBME treatment.

Conclusion: The antiproliferative activity of SCBME against EAC cells is likely due to apoptosis, mediated by regulation of p53 and NF- κ B signaling. Thus, SCBME can be considered as a useful resource in cancer chemotherapy.

65. [The effect of Reiki and guided imagery intervention on pain and fatigue in oncology patients: A non-randomized controlled study](#)

Explore (NY). Jan-Feb 2021;17(1):22-26. doi: 10.1016/j.explore.2020.07.009. Epub 2020 Jul 31.

Authors

[Zeliha Buyukbayram](#)¹, [Seyhan Citlik Saritas](#)²

Abstract

This study was conducted to investigate the effects of Reiki and guided imagery on pain and fatigue in oncology patients. This quasi-experimental study with a pretest and posttest design was conducted with 180 oncology patients at the oncology clinic of Dicle University Hospital in Turkey, between July 2017 and February 2018. The patients were divided into three groups: Reiki, guided imagery and control, with 60 patients in each group. The Reiki and guided imagery group patients underwent their respective interventions for three consecutive days separately (25-30 min; mean: 15.53 min). The interventions of Reiki and guided imagery reduced pain and fatigue in the oncology patients. It is recommended that oncology nurses use Reiki and guided imagery in patient care.

66. [Plant Polyphenolic Compounds Potentiates Therapeutic Efficiency of Anticancer Chemotherapeutic Drugs: A Review](#)

Endocr Metab Immune Disord Drug Targets. 2021;21(2):246-252. doi: 10.2174/1871530320666200807115647.

Authors

[Lokanatha Oruganti](#)¹, [Balaji Meriga](#)¹

Abstract

Background: Scientific research continues to develop more efficacious drugs to treat and cure cancer, the dreadful disease threatening the human race. Chemotherapy is an essential means in cancer therapy, however, plant drugs having pharmacological safety, can be used alone or as additions to current chemotherapeutic agents to enhance therapeutic efficacy and minimize chemotherapy-induced adverse effects.

Objective: A combination therapy where the synergistic effect on multiple targets is possible has gained significance because a one-drug one-target approach fails to yield the desired therapeutic effect. Therefore, a detailed description of important plant polyphenolic compounds with anticancer activity and their role in potentiating chemotherapeutic efficiency of existing anticancer drugs is provided in this

review. Systematically screening combinations of active pharmaceutical ingredients for potential synergy with plant compounds may be especially valuable in cancer therapy.

Methods: We extensively have gone through reviews and research articles available in the literature. We made use of databases such as Google Scholar, Research Gate, PubMed, Science Direct, etc. The following keywords were used in our literature search: "Chemotherapy, drug development, cancer drugs, plant-derived polyphenolics, synergistic studies, combination therapy, diagnosis and genetics."

Conclusion: Systematic research studies on screening combinations of plant phytochemicals with potential chemotherapeutic pharmaceuticals shed light on their synergistic effects, mechanisms of actions paving the way to develop more efficient anticancer therapeutics to treat and cure the cancer menace, to nullify chemotherapy-induced adverse effects and our review substantially contributes in this direction.

67. [Proteomic analysis of the anticancer effect of various extracts of endemic *Thermopsis turcica* in human cervical cancer cells](#)

Turk J Med Sci. 2020 Dec 17;50(8):1993-2004. doi: 10.3906/sag-2005-321.

Authors

[Mustafa Yıldız](#)¹, [Hakan Terzi](#)¹, [Saliha Handan Yıldız](#)², [Nuray Varol](#)², [Müjgan Özdemir Erdoğan](#)², [Murat Kasap](#)³, [Nermin Akçalı](#)², [Mustafa Solak](#)²

Abstract

Background/aim: *Thermopsis turcica* is a perennial species endemic to Turkey and different extracts of *T. turcica* have an antiproliferative effect on cancer cells, but there has not been any report on HeLa (human cervical cancer) cells.

Materials and methods: To get a better understanding of the molecular mechanism of anticancer activity of methanolic extracts of leaves (LE) and flowers (FE) of *T. turcica*, we employed 2-DE-based proteomics to explore the proteins involved in anticancer activity in HeLa cells.

Results: *T. turcica* extracts showed a potent cytotoxic effect on HeLa cells with the IC50 values of 1.75 mg/mL for LE and 3.25 mg/mL for FE. The induction of apoptosis by LE and FE was also consistent with increased expression of caspase mRNAs and DNA fragmentation. In terms of the proteomic approach, 27 differentially expressed proteins were detected and identified through MALDI-TOF/TOF mass spectrometry. These altered proteins were involved in cytoskeleton organization and movement, protein folding, proteolysis and translation, cell cycle and proliferation, signal transduction, cell redox homeostasis, and metabolism.

Conclusion: Up-regulation of protein disulfide isomerases and down-regulation of Rho GDP-dissociation inhibitor, heterogeneous nuclear ribonucleoproteins, and heat shock proteins may contribute to the induction of apoptosis and arresting of the cell cycle in HeLa cells.

68. [Acupuncture in the treatment of acute toxicity during and after head and neck cancer radiotherapy: Interim analysis of randomized prospective open-label trial](#)

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Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub. 2020 Dec;164(4):454-460. doi: 10.5507/bp.2020.021. Epub 2020 Jun 18.

Authors

[Radana Dymackova](#)^{1 2}, [Tomas Kazda](#)^{1 2}, [Marek Slavik](#)^{1 2}, [Iveta Selingerova](#)³, [Pavel Slampa](#)^{1 2}, [Ondrej Slama](#)^{4 5}

Abstract

Aims: The aim of this investigator-initiated prospective randomized open-label single institutional trial is to evaluate the role of acupuncture in the treatment of acute skin and mucosal toxicity, xerostomia, and perception of taste, pain, and nausea related to curative and adjuvant (chemo)radiotherapy of head and neck cancer. This paper reports pilot data of the first 30 enrolled patients.

Methods: Patients were randomized to undergo standard of care radiotherapy ± chemotherapy and support care defined by our institutional standard operating procedures alone or in the combination with acupuncture which was initiated with the first signs of any toxicity.

Results: Fifteen patients were enrolled in both arms and all finished the treatment as planned. The median pain was significantly lower in the acupuncture arm (median 1.6 points vs. 2.5 points on a 10-item Likert scale; $P=0.035$) as well as duration of acute pain (median 31 days vs. 54 days; $P=0.031$). Patients with acupuncture had significantly shorter duration of acute skin (median 44 days vs. 109 days; $P<0.001$) and mucosal toxicity (median 34 days vs. 109 days; $P<0.001$) with no difference in grading of toxicity (median grade 1.6 vs. 1.5; $P=0.701$ and median grade 1.4 vs. 1.6; $P=0.204$ for skin and mucosa, respectively). No significant difference was found for other toxicity domains, with the exception of salivation toxicity which was significantly lower in acupuncture arm (median grade 1.3 vs. 1.7; $P=0.048$).

Conclusion: In this interim analysis, acupuncture leads to lower pain and faster disappearance of skin and mucosal toxicity after (chemo)radiotherapy of head and neck cancer. Description and validation of acupuncture using scientific approaches will further enhance acceptance of this method by both patients and health care providers.

69. [Targeting Autophagic Pathways by Plant Natural Compounds in Cancer Treatment](#)

Curr Drug Targets. 2020;21(12):1237-1249. doi: 10.2174/1389450121666200504072635.

Authors

[Fatemeh Forouzanfar](#)¹, [Seyed Hadi Mousavi](#)²

Abstract

Nowadays, natural compounds of plant origin with anticancer effects have gained more attention because of their clinical safety and broad efficacy profiles. Autophagy is a multistep lysosomal degradation pathway that may have a unique potential for clinical benefit in the setting of cancer treatment. To retrieve articles related to the study, the databases of Google Scholar, Web of sciences, Medline and Scopus, using the following keywords: Autophagic pathways; herbal medicine, oncogenic autophagic pathways, tumor-

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suppressive autophagic pathways, and cancer were searched. Although natural plant compounds such as resveratrol, curcumin, oridonin, gossypol, and paclitaxel have proven anticancer potential via autophagic signaling pathways, there is still a great need to find new natural compounds and investigate the underlying mechanisms, to facilitate their clinical use as potential anticancer agents through autophagic induction.

70. [The Impact of an Evidence-Based Education on Complementary and Alternative Medicine Usage in People with Cancer: Pilot Study](#)

J Cancer Educ. 2021 Oct;36(5):1061-1068. doi: 10.1007/s13187-020-01734-0.

Authors

[Ellen Simpson](#)¹, [Karly Forster](#)^{1 2}, [Sara McMillan](#)¹, [Shailendra Anoopkumar-Dukie](#)³

Abstract

Complementary and alternative medicine (CAM) usage amongst cancer patients is high globally and in Australia. CAM use in cancer care has the ability to increase chemotherapy toxicity or cause sub-therapy due to altered metabolism as well as increase a patient's bleeding risk. Furthering these risks, people with cancer are largely obtaining their CAM use information from non-evidence-based sources. This study aimed to determine whether the implementation of a CAM education influenced decision-making with regard to CAM usage amongst cancer patients. Twenty people with cancer were recruited for participation in this study. The aims of this study were achieved by surveying patients via questionnaire, both prior to and following receiving an evidence-based CAM education, in either or both written or audiovisual format. This exploratory study found, consistent with the literature, that the majority of participants were obtaining their CAM use information from non-evidenced-based sources. Additionally, it found that the participants wanted more CAM use information and that they demonstrated some altered decision-making after receiving evidenced-based information. On the post-educational questionnaire, the number of participants that stated that they would use CAMs decreased by almost 14%, and some participants made CAM use decisions in accordance with the information provided in the resources. Furthermore, a small increase in CAM knowledge was demonstrated, and it was reported that the resource had prompted them to look further into CAM information. Lastly, the participants in this study found the resource to be mostly useful and helpful and preferred the animated video to the written information.

71. [Andiroba oil \(Carapa guianensis Aubl\) shows cytotoxicity but no mutagenicity in the ACPPO2 gastric cancer cell line](#)

J Appl Toxicol. 2020 Aug;40(8):1060-1066. doi: 10.1002/jat.3966. Epub 2020 Mar 9.

Authors

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Abstract

Andiroba (*Carapa guianensis* Aubl) is an Amazonian plant whose oil has been widely used in traditional medicine for various purposes, including anti-inflammation. Research reports indicate that the oil can

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confer antitumor activity due to the presence of fatty acids, which can directly influence cell death mechanisms. Thus, andiroba oil (AO) has gained interest for its potential to be used in antineoplastic therapies. Here, we report an in vitro analysis of the cytotoxic and mutagenic potential of AO in the gastric cancer cell line, ACP02. Cell survival was assessed by the MTT [3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide] assay, differential staining with ethidium bromide and acridine orange assessed apoptosis-necrosis, and mutagenesis was assessed by the micronucleus test. The apolar oil was first diluted in 0.1% dimethyl sulfoxide (DMSO) and then further diluted to six concentrations (0.01, 0.1, 1, 10 and 100 µg/mL and 1 mg/mL) in RPMI medium. Controls included RPMI alone (negative control) and 0.1% DMSO diluted in medium (vehicle control). The MTT test showed that AO significantly reduced cell viability ($P < .05$) only when the highest tested concentration was applied for 48 hours. The apoptosis/necrosis test showed that the highest concentration of AO induced cell death by apoptosis at 24 and 48 hours. There was no statistically significant increase in the frequency of micronuclei. The ability of the AO to decrease the viability of ACP02 cells via apoptosis, without exerting mutagenic effects, suggests that the oil could be useful as an alternative therapeutic agent for primary tumors of stomach cancer.