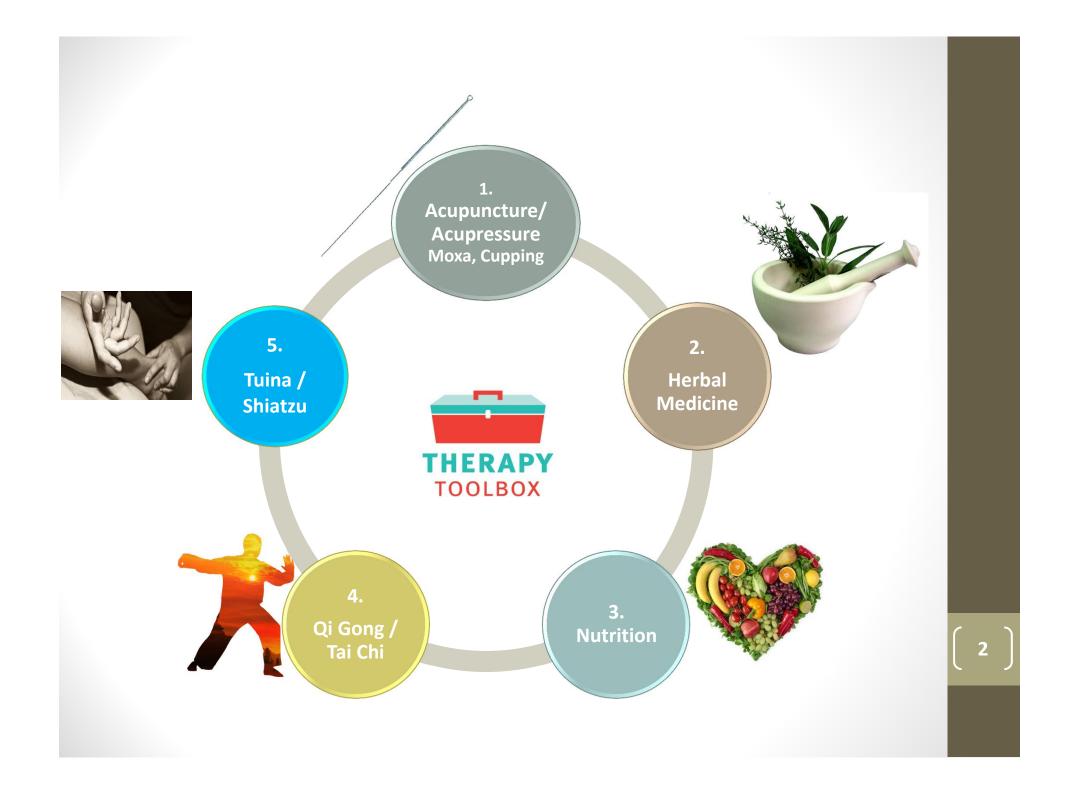
Latest Research in TCM Oncology

Dr. Gil Barzilay, Ph.D Dipl. CM





Research in TCM Oncology

Palliative Care



Increasing Quality Research & Publications

Rank	Focus areas by topic	Records (%)	1 st decade %	2 nd decade %	Rank	Focus areas by topic	Records (%)	1 st decade %	2 nd decade %
1	Pain	4601 (37.9)	40.5	37.0	7	Paralysis / Palsy	339 (2.8)	2.5	2.9
_	Back Pain	401 (3.3)	3.9	3.1		Facial Paralysis & Bell Palsy	132 (1.1)	0.8	1.2
	Low Back Pain	317 (2.6)	3.0	2.5		Hemiplegia	68 (0.6)	0.7	0.5
	Headache	336 (2.8)	3.4	2.5		Cerebral Palsy	54 (0.4)	0.3	0.5
	Migraine	181 (1.5)	1.7	1.4	8	Brain Ischemia	339 (2.8)	2.2	3.0
	Neuralgia	175 (1.4)	1.8	1.3	9	Depression / Depressive Disorder	323 (2.7)	2.4	2.8
	Trigeminal Neuralgia	38 (0.3)	0.5	0.2	10	Allergy / Hypersensitivity	307 (2.5)	3.2	2.3
	Sciatica	30 (0.2)	0.5	0.2	11	Nausea / Vomiting	290 (2.4)	3.1	2.1
	Pelvic Pain	159 (1.3)	1.1	1.4	12	Sleep & Sleep Disorders	230 (1.9)	1.5	2.1
	Dysmenorrhea	102 (0.8)	0.6	0.9	13	Anxiety	179 (1.5)	1.2	1.6
	Arthralgia	150 (1.2)	1.0	1.3	14	Asthma	172 (1.4)	2.0	1.2
	Myofascial Pain Syndromes	122 (1.0)	1.0	1.0	15	Obesity	157 (1.3)	1.2	1.3
	Neck Pain	117 (1.0)	1.2	0.9	16	Diabetes Mellitus	131 (1.1)	1.1	1.1
	Shoulder Pain	81 (0.7)	0.6	0.7	17	Hypertension / Hypertensive	128 (1.1)	1.4	0.9
_	Hyperalgesia	81 (0.7)	0.4	0.8	18	Fatigue	124 (1.0)	0.3	1.3
	Fibromyalgia	74 (0.6)	0.7	0.6	19	Dementia	120 (1.0)	0.7	1.1
	Facial Pain	56 (0.5)	0.8	0.3	20	Menopause	119 (1.0)	0.5	1.1
	Labor Pain	43 (0.4)	0.1	0.5	21	Hot flashes	105 (0.9)	0.3	1.1
2	Neoplasms	517 (4.3)	3.9	4.4	22	Infertility	105 (0.9)	0.5	1.0
	Breast Neoplasms	97 (0.8)	0.6	0.9	23	Parkinson	101 (0.8)	0.6	0.9
3	Arthritis	502 (4.1)	3.5	4.4	24	Spinal Cord Injuries	87 (0.7)	1.0	0.6
	Osteoarthritis	297 (2.4)	1.7	2.7	25	Irritable Bowel Syndrome	81 (0.7)	0.1	0.9
	Rheumatoid Arthritis	70 (0.6)	0.6	0.6	26	Rhinitis	80 (0.7)	0.6	0.7
4	Stroke	450 (3.7)	2.1	4.3	27	Epilepsy	68 (0.6)	0.7	0.5
	Cerebral Infarction	150 (1.2)	1.1	1.3	28	Smoking Cessation	62 (0.5)	0.8	0.4
5	Pregnancy	437 (3.6)	3.6	3.6	29	Tennis Elbow	47 (0.4)	0.6	0.3
	Labor, Obstetric	156 (1.3)	1.5	1.2	30	Diarrhea	46 (0.4)	0.4	0.4
6	Inflammation	361 (3.0)	2.8	3.0					

Table 2. Overall ranking by topic and percentage of total acupuncture-related publications over the 20 year period, 1995–2014.



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REVIEW

6

Road map for pain management in pancreatic cancer: A review

Marie José Lahoud, Hampig Raphael Kourie, Joelle Antoun, Lana El Osta, Marwan Ghosn

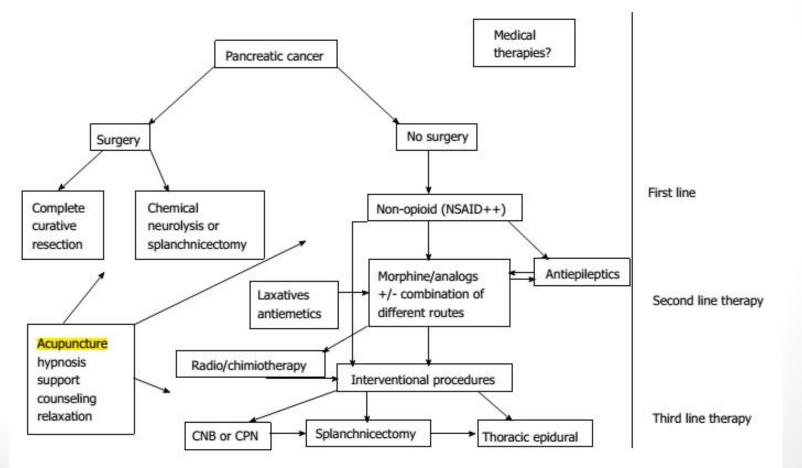


Figure 1 Algorithm of pancreatic cancer pain management. CPN: Celiac plexus neurolysis: NSAID: Non-steroidal anti-inflammatory drug.

Challenges in TCM (Oncology) Research

Diagnosis

Acupuncture

- 365 Acupoints
- Multicomponent intervention e.g. depth, stimulation, needle size etc.
- Sham ("placebo acupuncture") works! Why & How not fully understood

Herbs

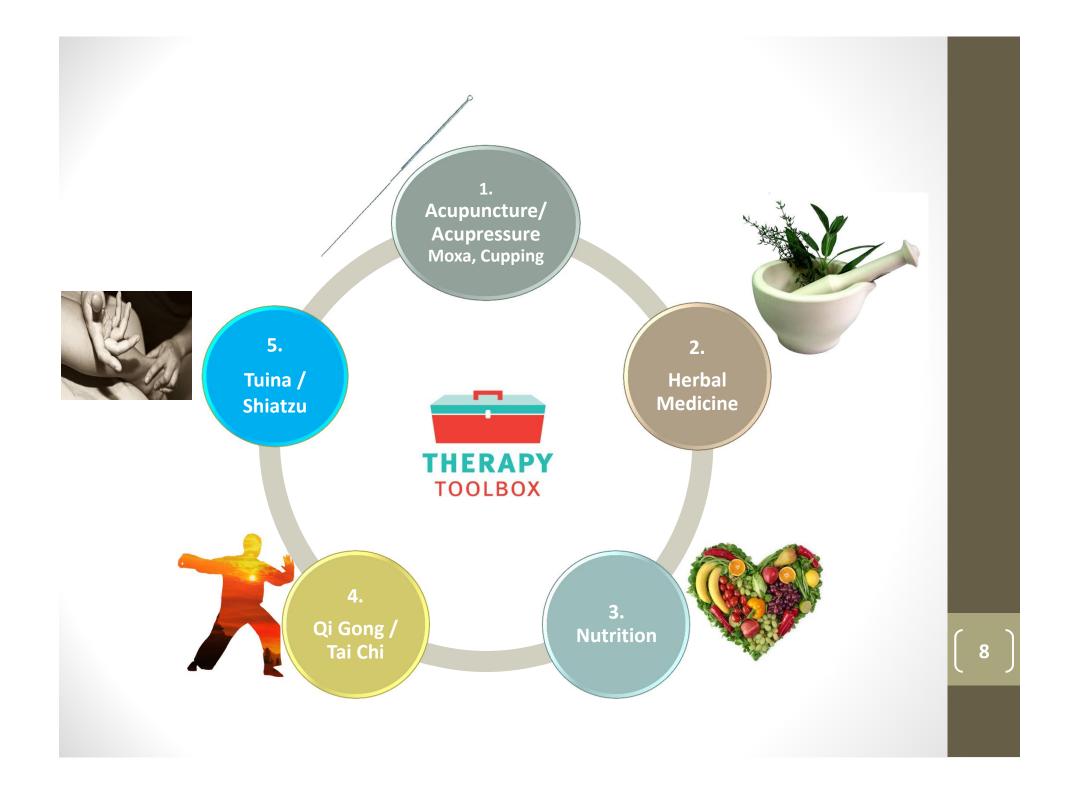
- 100s of herbs & 100s of formulas prepared differently (dosage & form)
- Different parts of plants have different potential effect
- Different sources and manufacturers, no clear standardization (No "FDA")

Nutritional Guidelines - No single recommendation, sources, cooking style, follow-up

Tai Chi and Qi Gong - Many schools & styles, follow-up

And in Oncology...

Recruitment, Treatment Protocols, Contra-Indications, Disease Complexity



JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Acupuncture for Cancer-Related Fatigue in Patients With Breast Cancer: A Pragmatic Randomized Controlled Trial



Alexander Molassiotis, Joy Bardy, Jennifer Finnegan-John, Peter Mackereth, David W. Ryder, Jacqueline Filshie, Emma Ream, and Alison Richardson

Purpose

We aimed to assess the effectiveness of acupuncture for cancer-related fatigue (CRF) in patients with breast cancer.

Patients and Methods

We conducted a pragmatic, randomized controlled trial comparing acupuncture with enhanced usual care. Three hundred two outpatients with breast cancer participated. We randomly assigned 75 patients to usual care and 227 patients to acupuncture plus usual care (random assignment of 1:3 respectively) with minimization controlling for baseline general fatigue and maintenance treatment. Treatment was delivered by acupuncturists once a week for 6 weeks through needling three pairs of acupoints. The usual care group received a booklet with information about fatigue and its management. Primary outcome was general fatigue at 6 weeks, measured with the Multidimensional Fatigue Inventory (MFI). Other measurements included the Hospital Anxiety and Depression Scale, Functional Assessment of Cancer Therapy–General quality-of-life scale, and expectation of acupuncture effect. Analyses were by intention to treat.

Results

Two hundred forty-six of 302 patients randomly assigned provided complete data at 6 weeks.

The difference in the mean General Fatigue score, between those who received the intervention and those who did not, was -3.11 (95% CI, -3.97 to -2.25; P < .001). The intervention also improved all other fatigue aspects measured by MFI, including Physical Fatigue and Mental Fatigue (acupuncture effect, -2.36 and -1.94, respectively; both at P < .001), anxiety and depression (acupuncture effect, -1.83 and -2.13, respectively; both at P < .001), and quality of life (Physical Well-Being effect, 3.30; Functional Well-Being effect, 3.57; both at P < .001; Emotional Well-Being effect, 1.93; P = .001; and Social Functioning Well-Being effect, 1.05; P < .05).

Conclusion

Acupuncture is an effective intervention for managing the symptom of CRF and improving patients' quality of life.

Acupuncture for Cancer-Related Fatigue in Patients With Breast Cancer: A Pragmatic Randomized Controlled Trial

Alexander Molassiotis, Joy Bardy, Jennifer Finnegan-John, Peter Mackereth, David W. Ryder, Jacqueline Filshie, Emma Ream, and Alison Richardson

Design

A two-group, randomized controlled trial design was used, with participants receiving either enhanced usual care or acupuncture. A computer program allocated patients to groups and used minimization with a random

Patients with breast cancer experiencing persistent fatigue of at least a moderate level were the focus of the study. Patients were screened for fatigue through a single-item 10-point scale (where 0 is not fatigued at all and 10 is extremely fatigued) to identify patients with significant fatigue (ie, those with

Eligible patients had a diagnosis of stage I, II, or IIIA breast cancer; had completed chemotherapy at least 1 month and up to 5 years previously (to

Usual Care	Acupuncture
Group	Group
(n = 75)	(n = 227)

All trial patients received usual care. Because there is no recognized standard care for fatigue, all patients were offered a fatigue information booklet. In addition, the intervention group was offered six acupuncture sessions over 6 weeks. On the basis of the Standards for Reporting Interventions in Clinical Trials of Acupuncture recommendations for reporting acupuncture trials,¹⁰ patients received a standardized 20-minute acupuncture session needling bilaterally or unilaterally three points (ST36, SP6, and LI4), with some flexibility in case points could not be punctured (eg, in case of lymphedema). Alternative points were selected by therapists at their discretion to maintain an equal dose of treatment. These points could include GB34 and SP9.^{6,9,11} This

The primary outcome measure was the difference in general fatigue, as self-reported by patients with the MFI¹² at 6 weeks (treatment completion).

Measure	Complete Patients (n = 246)	
Mean score (GF.6–GF.0), SC	-0.62	-0.53
Mean score (GF.6–GF.0), Acu	-3.72	-2.96
Difference (Acu–SC) in mean change in GF (GF.6–GF.0)	-3.10	-2.43
95% CI	-3.98 to -2.23	-3.19 to -1.67
P	< .001	< .001

The trial shows that patients in the intervention group reported better fatigue, anxiety, depression, and quality-of-life scores, but the design of the trial does not allow the specific effect of acupuncture to be distinguished from other elements and effects of the intervention.

Informing hot flash treatment decisions for breast cancer survivors: a systematic review of randomized trials comparing active interventions

Claire Johns¹ · Susan M. Seav² · Sally A. Dominick³ · Jessica R. Gorman⁴ · Hongying Li⁵ · Loki Natarajan⁶ · Jun James Mao⁷ · H. Irene Su³⁽⁰⁾



Non-pharmacologic treatments are important to consider in this population, because participants generally experience fewer side effects when compared to pharmacologic treatments. Acupuncture was compared to both venlafaxine and gabapentin, two effective pharmacologic treatments [25, 40]. In these two studies, hot flash treatment efficacy did not differ between acupuncture and the pharmacologic comparator while on active treatment. However, in this limited participant pool, women treated with acupuncture reported longer durability of hot flash efficacy that persisted after completing active treatment. Moreover, aside from bruising, participants undergoing acupuncture reported no other side effects, while participants randomized to pharmacologic treatments reported significant gastrointestinal and fatigue side effects. Larger comparative effectiveness trials in broader populations are needed to confirm these findings. Balancing hot flash treatment

Breast Cancer Res Treat (2016) 156:415–426 DOI 10.1007/s10549-016-3765-4



Acupuncture Versus Venlafaxine for the Management of Vasomotor Symptoms in Patients With Hormone Receptor– Positive Breast Cancer: A Randomized Controlled Trial

Eleanor M. Walker, Alba I. Rodriguez, Beth Kohn, Ronald M. Ball, Jan Pegg, Jeffrey R. Pocock, Ramon Nunez, Ed Peterson, Susan Jakary, and Robert A. Levine

Purpose

Vasomotor symptoms are common adverse effects of antiestrogen hormone treatment in conventional breast cancer care. Hormone replacement therapy is contraindicated in patients with breast cancer. Venlafaxine (Effexor), the therapy of choice for these symptoms, has numerous adverse effects. Recent studies suggest acupuncture may be effective in reducing vasomotor symptoms in menopausal women. This randomized controlled trial tested whether acupuncture reduces vasomotor symptoms and produces fewer adverse effects than venlafaxine.

Patients and Methods

Fifty patients were randomly assigned to receive 12 weeks of acupuncture (n = 25) or venlafaxine (n = 25) treatment. Health outcomes were measured for up to 1 year post-treatment.

Results

Both groups exhibited significant decreases in hot flashes, depressive symptoms, and other qualityof-life symptoms, including significant improvements in mental health from pre- to post-treatment. These changes were similar in both groups, indicating that acupuncture was as effective as venlafaxine. By 2 weeks post-treatment, the venlafaxine group experienced significant increases in hot flashes, whereas hot flashes in the acupuncture group remained at low levels. The venlafaxine group experienced 18 incidences of adverse effects (eg, nausea, dry mouth, dizziness, anxiety), whereas the acupuncture group experienced no negative adverse effects. Acupuncture had the additional benefit of increased sex drive in some women, and most reported an improvement in their energy, clarity of thought, and sense of well-being.

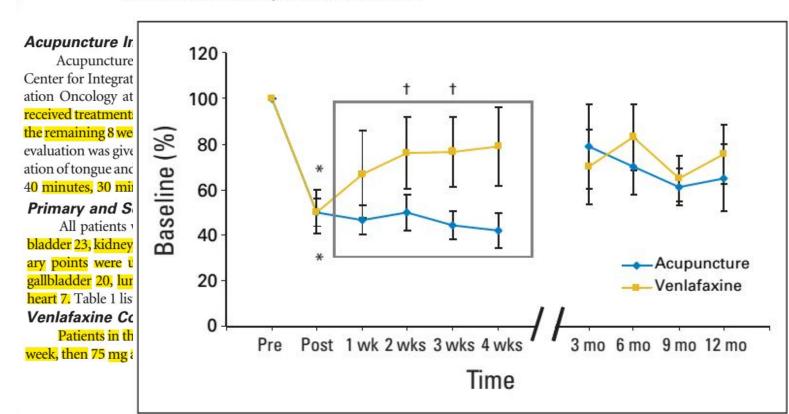
Conclusion

Acupuncture appears to be equivalent to drug therapy in these patients. It is a safe, effective and durable treatment for vasomotor symptoms secondary to long-term antiestrogen hormone use in patients with breast cancer.

J Clin Oncol 28:634-640.

Acupuncture Versus Venlafaxine for the Management of Vasomotor Symptoms in Patients With Hormone Receptor– Positive Breast Cancer: A Randomized Controlled Trial

Eleanor M. Walker, Alba I. Rodriguez, Beth Kohn, Ronald M. Ball, Jan Pegg, Jeffrey R. Pocock, Ramon Nunez, Ed Peterson, Susan Jakary, and Robert A. Levine



In summary, both groups exhibited significant decreases in hot flashes, depressive symptoms, and other menopausal quality-of-life symptoms, as well as significant improvements in mental health from pre- to post-treatment. These changes were similar in both groups, indicating that acupuncture was at least as effective as venlafaxine.

Acupuncture for Pain and Dysfunction After Neck Dissection: Results of a Randomized Controlled Trial

David G. Pfister, Barrie R. Cassileth, Gary E. Deng, K. Simon Yeung, Jennifer S. Lee, Donald Garrity, Angel Cronin, Nancy Lee, Dennis Kraus, Ashok R. Shaha, Jatin Shah, and Andrew J. Vickers

Purpose

To determine whether acupuncture reduces pain and dysfunction in patients with cancer with a history of neck dissection. The secondary objective is to determine whether acupuncture relieves dry mouth in this population.

Patients and Methods

Patients at a tertiary cancer center with chronic pain or dysfunction attributed to neck dissection were randomly assigned to weekly acupuncture versus usual care (eg, physical therapy, analgesia, and/or anti-inflammatory drugs, per patient preference or physician recommendation) for 4 weeks. The Constant-Murley score, a composite measure of pain, function, and activities of daily living, was the primary outcome measure. Xerostomia, a secondary end point, was assessed using the Xerostomia Inventory.

Results

Fifty-eight evaluable patients were accrued and randomly assigned from 2004 to 2007 (28 and 30 patients on acupuncture and control arms, respectively). Constant-Murley scores improved more in the acupuncture group (adjusted difference between groups = 11.2; 95% Cl, 3.0 to 19.3; P = .008). Acupuncture produced greater improvement in reported xerostomia (adjusted difference in Xerostomia Inventory = -5.8; 95% Cl, -0.9 to -10.7; P = .02).

Conclusion

Significant reductions in pain, dysfunction, and xerostomia were observed in patients receiving acupuncture versus usual care. Although further study is needed, these data support the potential role of acupuncture in addressing post-neck dissection pain and dysfunction, as well as xerostomia.

J Clin Oncol 28:2565-2570.

Acupuncture for Pain and Dysfunction After Neck Dissection: Results of a Randomized Controlled Trial

David G. Pfister, Barrie R. Cassileth, Gary E. Deng, K. Simon Yeung, Jennifer S. Lee, Donald Garrity, Angel Cronin, Nancy Lee, Dennis Kraus, Ashok R. Shaha, Jatin Shah, and Andrew J. Vickers

The study was a prospective, open-label, randomized controlled trial. Random assignment was stratified by neck procedure type (selective, modified, or radical) and baseline Constant-Murley score (> 35 $\nu \le 35$)³⁹ using

plaints of pain and/or dysfunction in the neck and/or shoulders that the investigator attributed to neck dissection; were at least 3 months since neck of optimizing efficacy while facilitating reproducibility. Standard distal points dissection and radiation; and had moderate or severe pain and dysfunction (LI-4, SP-6, GV-20, luozhen, and auricular shenman) were used in all patients

	6	Day	(approximation)	ate)	
Study Assessment or Stage	-10	-3	1-28	35	42
Numerical Rating Scale of Pain on activity	Х	Х	Weekly	Х	Х
Constant-Murley score	Х				Х
Acupuncture treatments			Weekly		
Medication use	Х		Weekly		Х
Xerostomia Inventory	Х	Х		Х	Х
Partial registration	Х				
Full registration/random assignment		Х			

Acupuncture needles were placed at both standard and customized an-All patients had undergone neck dissection for cancer; expressed com- atomic points. This allowed the acupuncturists to modify the acupuncture point prescription based on each patient's pain and its location, with the intent

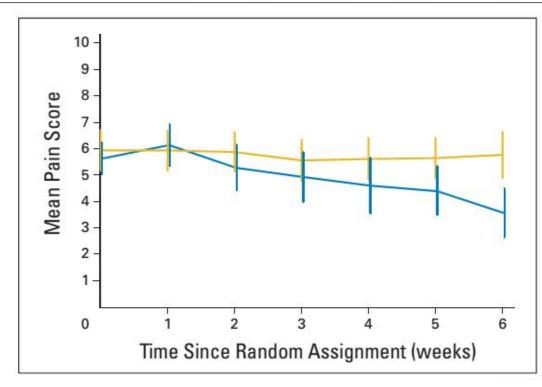
> is traditionally used to calm and to relieve pain. The customized points selected included zone distal points (front, middle, and back) chosen according to the primary zone(s) of pain; local ashi tender points with the greatest sensitivity to palpation pressure; and bilateral point LI-2 in patients with dry mouth. The

> Needles were inserted using the traditional Chinese medicine acupuncture technique at a depth of 0.25 to 0.5 inches and retained for 30 minutes. Needles were stimulated manually, but because the sensitivity of acupuncture points may vary especially after surgery, no specific de qi response was elicited.

Acupuncture for Pain and Dysfunction After Neck Dissection: Results of a Randomized Controlled Trial

David G. Pfister, Barrie R. Cassileth, Gary E. Deng, K. Simon Yeung, Jennifer S. Lee, Donald Garrity, Angel Cronin, Nancy Lee, Dennis Kraus, Ashok R. Shaha, Jatin Shah, and Andrew J. Vickers

	Baseline Score				Follow-Up Score						
	Acupuncture		Control		Acupuncture		Control		Difference Between		
Variable	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Groups	95% CI	Ρ
Constant-Murley score (higher scores indicate better outcome)	41.9	13.5	48.1	16.8	55.8	20.6	49.5	18.2	11.2	3.0 to 19.3	.008
Modified Constant-Murley score (higher scores indicate better outcome)	41.7	13.7	47.8	16.5	56.6	21.6	49.6	18.3	12.0	3.6 to 20.4	.006
Xerostomia Inventory* (lower scores indicate better outcome)	60.1	21.6	63.3	18.3	52.6	21.6	61.8	18.9	-5.8	-1.0 to -10.7	.02
NRS of Pain (lower scores indicate better outcome)	5.6	1.6	5.9	2.2	3.6	2.4	5.8	2.3	-1.7	-0.8 to -2.7	< .001



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Investigation of 2 Types of Self-administered Acupressure for Persistent Cancer-Related Fatigue in Breast Cancer Survivors

A Randomized Clinical Trial

Suzanna M. Zick, ND, MPH; Ananda Sen, PhD; Gwen K. Wyatt, PhD, RN; Susan L. Murphy, PhD; J. Todd Arnedt, PhD; Richard E. Harris, PhD



IMPORTANCE Fatigue is a common and debilitating late-term effect of breast cancer that is associated with poor sleep and decreased quality of life, yet therapies remain limited. Acupressure has reduced fatigue in previous small studies, but rigorous clinical trials are needed.

OBJECTIVES To investigate if 6 weeks of 2 types of self-administered acupressure improved fatigue, sleep, and quality of life vs usual care in breast cancer survivors and to determine if changes were sustained during a 4-week washout period.

DESIGN, SETTING, AND PARTICIPANTS Phase 3 randomized, single-blind, clinical trial conducted from March 1, 2011, through October 31, 2014. Women were recruited from the Michigan Tumor Registry.

INTERVENTIONS Randomization (1:1:1) to 6 weeks of daily self-administered relaxing acupressure, stimulating acupressure, or usual care.

MAIN OUTCOMES AND MEASURES The primary outcome was change in the Brief Fatigue Inventory score from baseline to weeks 6 and 10. Secondary analyses were sleep (Pittsburgh Sleep Quality Index) and quality of life (Long-Term Quality of Life Instrument).

RESULTS A total of 424 survivors of stages 0 to III breast cancer who had completed cancer treatments at least 12 months previously were screened, and 288 were randomized, with 270 receiving relaxing acupressure (n = 94), stimulating acupressure (n = 90), or usual care (n = 86). One woman withdrew owing to bruising at the acupoints. At week 6, the percentages of participants who achieved normal fatigue levels (Brief Fatigue Inventory score <4) were 66.2% (49 of 74) in relaxing acupressure, 60.9% (42 of 70) in stimulating acupressure, and 31.3% (26 of 84) in usual care. At week 10, a total of 56.3% (40 of 71) in relaxing acupressure, 60.9% (42 of 69) in stimulating acupressure, and 30.1% (25 of 83) in usual care continued to have normal fatigue. At neither time point were the 2 acupressure groups significantly different. Relaxing acupressure, but not stimulating acupressure, showed significant improvements in sleep quality compared with usual care at week 6, but not at week 10. Only relaxing acupressure significantly improved quality of life vs usual care at weeks 6 and 10.

CONCLUSIONS AND RELEVANCE Both acupressure arms significantly reduced persistent fatigue compared with usual care, but only relaxing acupressure had significant effects on sleep quality and quality of life. Relaxing acupressure offers a possible low-cost option for managing symptoms.

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JAMA Oncol. 2016;2(11):1470-1476. doi:10.1001/jamaoncol.2016.1867 Published online July 7, 2016.

Investigation of 2 Types of Self-administered Acupressure for Persistent Cancer-Related Fatigue in Breast Cancer Survivors A Randomized Clinical Trial

Suzanna M. Zick, ND, MPH; Ananda Sen, PhD; Gwen K. Wyatt, PhD, RN; Susan L. Murphy, PhD; J. Todd Arnedt, PhD; Richard E. Harris, PhD

Interventions

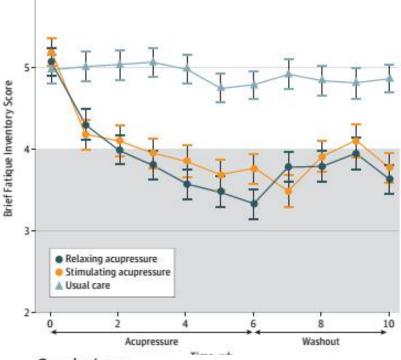
Usual care was defined as any treatment women were receiv-

ing from health care professionals for fatigue. At baseline, women were taught to self-administer acupressure by a trained acupressure educator.²⁹ The 13 acupressure educators were taught by one of the study's principal investigators (R.E.H.), an acupuncturist with National Certification Commission for Acupuncture and Oriental Medicine training. This training included a 30-minute session in which educators were taught point location, stimulation techniques, and pressure intensity. Relaxing acupressure points consisted of *yin tang*,

anmian, heart 7, spleen 6, and liver 3. Four acupoints were performed bilaterally, with *yin tang* done centrally. Stimulating acupressure points consisted of *du* 20, conception vessel 6, large intestine 4, stomach 36, spleen 6, and kidney 3. Points

were administered bilaterally except for *du* 20 and conception vessel 6, which were done centrally (eFigure in Supplement 2). Women were told to perform acupressure **once per day and to stimulate each point in a circular motion for 3 minutes**.

The assessments for fidelity of both acupressure educators and participants have been previously described.³¹ Participants were assessed for how well they performed acupressure at their baseline visits and at weeks 3 and 6. Participants 6-



Conclusions

In summary, both acupressure arms significantly reduced fatigue compared with usual care, but only relaxing acupressure had a significant effect on improving both sleep and quality of life. Improvements in fatigue, sleep, and quality of life were sustained for 4 weeks after cessation of acupressure. Self-administered relaxing acupressure could offer an inexpensive, easy-to-learn intervention for improving fatigue, sleep, and quality of life in fatigued breast cancer survivors.

The effects of P6 acupressure in the prophylaxis of chemotherapy-related nausea and vomiting in breast cancer patients¹

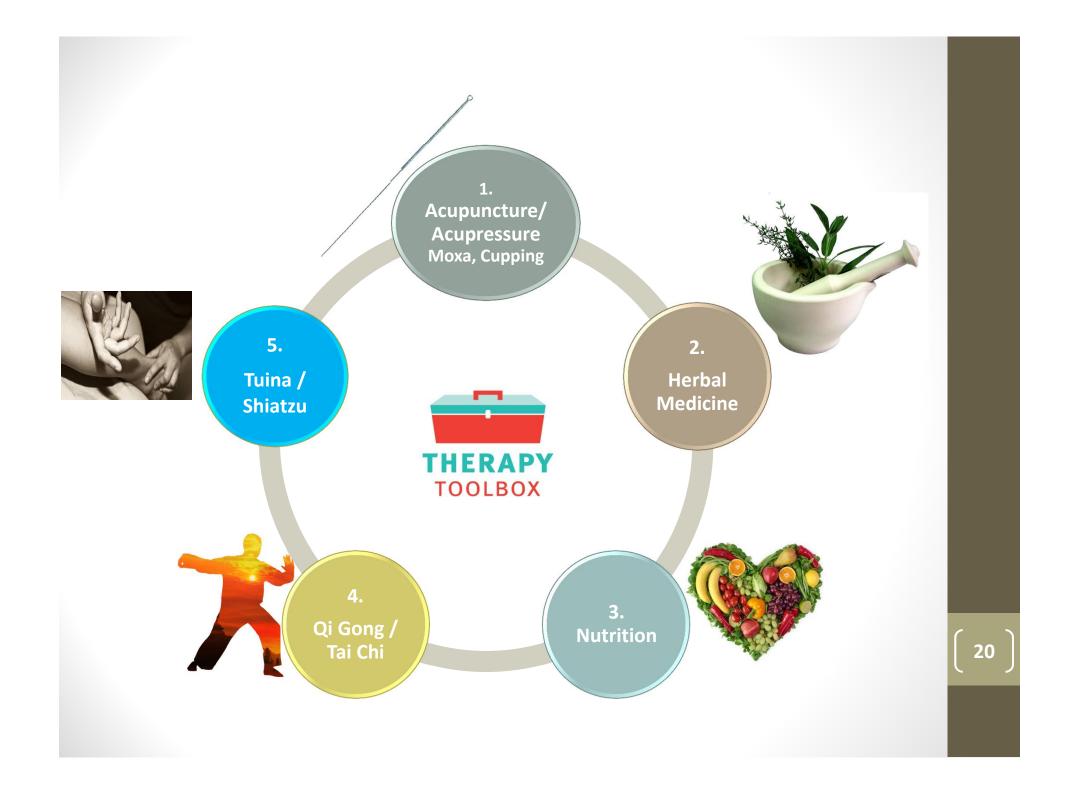
A. Molassiotis^{a,*}, A.M. Helin^b, R. Dabbour^a, S. Hummerston^c

SE Background: Nausea, and to a lesser extend vomiting, remain significant clinical problems after the administration of chemotherapy, with up to 60% of patients reporting nausea despite use of antiemetics. Combining antiemetics with other non-pharmacological treatments may prove more effective in decreasing nausea than antiemetics alone. Hence, the aim of the current study was to evaluate the effectiveness of using acupressure in Pericardium 6 (Neiguan) acu-point in managing chemotherapy-induced nausea and vomiting.

Methods: This was a randomised controlled trial. Acupressure was applied using wristbands (Sea-Band[™]) which patients in the experimental group had to wear for the 5 days following the chemotherapy administration. Assessments of nausea, retching and vomiting were obtained from all patients daily for 5 days. Thirty-six patients completed the study from two centres in the UK, with 19 patients allocated to the control arm and 17 to the experimental arm.

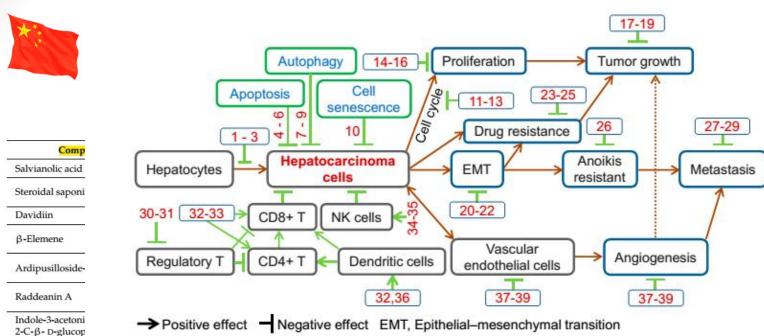
Results: It was found that nausea and retching *experience*, and nausea, vomiting and retching *occurrence* and *distress* were all significantly lower in the experimental group compared to the control group (P < 0.05). The only exception was with the vomiting experience, which was close to significance (P = 0.06).

Discussion: Results highlight the important role of safe and convenient nonpharmacological complementary therapies, such as acupressure, in the management of the complex symptoms of chemotherapy-related nausea and vomiting.



Review

Preventive and Therapeutic Effects of Chinese Herbal Compounds against Hepatocellular Carcinoma



Pinocembrin-7-4",6"-hexahydr β-glucose and tl 20(R),22(xi),24(S

25(26)-ene-3beta beta,20,22,24-he **Figure 1.** Anti-cancer effects of herbal compounds against hepatocarcinoma. 1, Ursolic acid; 2, Penta-acetyl geniposide; 3, **Curcum**in; 4, Matrine; 5, Solamargine; 6, Ponicidin; 7, Tetrandrine; 8, Baicalein; 9, Bufalin; 10, Ganoderiol F; 11, Rhein; 12, Oridonin; 13, Curcumol; 14, Salvianolic acid B; 15, Steroidal saponins; 16, Davidiin; 17, β-Elemene; 18, Ardipusilloside-I; 19, Raddeanin A; 20, Tanshinone IIA; 21, Cordycepin; 22, Huaier polysaccharides; 23, Astragaloside II; 24, Oroxylin A; 25, Tetramethylpyrazine; 26, Arecoline; 27, Artemisinin; 28, Resveratrol; 29, Isofraxidin; 30, Astragalus polysaccharides; **31**, *Radix Glycyrrhizae* polysaccharides; 32, *Lycium barbarum* polysaccharide; 33, Polysaccharides from *Artemisia annua* L.; 34, Gastrodin; 35, Shikonin; 36, Gekko sulfated polysaccharide-protein complex; 37, Gekko-sulfated glycopeptide; 38, Pedicularioside G; 39, Vitexin compound **1**.

Molecules 2016, 21, 142; doi:10.3390/molecules21020142

[19] [20,30] [21] [22] [23] [25]

Ref.

[16]

[17]

[18]

Adjunctive Traditional Chinese Medicine Therapy Improves Survival in Patients With Advanced Breast Cancer



A Population-Based Study

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BACKGROUND: Traditional Chinese medicine (TCM) is one of the most common complementary and alternative medicines used in the treatment of patients with breast cancer. However, the clinical effect of TCM on survival, which is a major concern in these individuals, lacks evidence from large-scale clinical studies. **METHODS:** The authors used the Taiwan National Health Insurance Research Database to conduct a retrospective population-based cohort study of patients with advanced breast cancer between 2001 and 2010. The patients were separated into TCM users and nonusers, and Cox regression models were applied to determine the association between the use of TCM and patient survival. **RESULTS:** A total of 729 patients with advanced breast cancer receiving taxanes were included in the current study. Of this cohort, the mean age was 52.0 years; 115 patients were TCM users (15.8%) and 614 patients were TCM nonusers. The mean follow-up was 2.8 years, with 277 deaths reported to occur during the 10-year period. Multivariate analysis demonstrated that, compared with nonusers, the use of TCM was associated with a significantly decreased risk of all-cause mortality (adjusted hazards ratio [HR], 0.55 [95% confidence interval, 0.33-0.90] for TCM use of 30-180 days; adjusted HR, 0.46 [95% confidence interval, 0.27-0.78] for TCM use of > 180 days). Among the frequently used TCMs, those found to be most effective (lowest HRs) in reducing mortality were Bai Hua She She Cao, Ban Zhi Lian, and Huang Qi CONCLUSIONS: The results of the current observational study suggest that adjunctive TCM therapy may lower the risk of death in patients with advanced breast cancer. Future randomized controlled trials are required to validate these findings. *Cancer* 2014;120:1338-44. © 2014 American Cancer Society.

analyzed 1 million patients randomly selected from 23 million beneficiaries in the NHIRD between January 1, 1999 and December 31, 2010. The NHIRD contains comprehensive outpatient and inpatient information including age, sex, date of visit, *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes, and complete prescription records. The detailed diagnoses and treatments provided by Chinese

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Adjunctive Traditional Chinese Medicine Therapy Improves Survival in Patients With Advanced Breast Cancer

A Population-Based Study

TABLE 4. Unadjusted and Adjusted Cox Proportional Hazards Model

		Univariate Analysis	
Individual TCM Use (≥30 d) ^a	HR	95% CI	Р
Jia Wei Xiao Yao San	0.32	0.13-0.77	.01
Pu Gong Ying	0.45	0.22-0.90	.02
Bai Hua She She Cao	0.14	0.03-0.55	.005
Huang Qi Astragalus propinquus	0.32	0.13-0.77	.01
Dan Shen Salvia miltiorrhiza / Red Sage	0.53	0.24-1.20	.13
Xiang Sha Liu Jun Zi Tang	0.48	0.23-1.03	.06
Ji Xue Teng	0.49	0.22-1.10	.09
Ban Zhi Lian Scutellaria barbata	0.22	0.07-0.69	.01
Gui Pi Tang	0.42	0.19-0.95	.04
Ban Xia Pinellia ternata	0.46	0.19-1.13	.09

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Cancer Medicine

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Original Research



Adjunctive Chinese Herbal Medicine therapy improves survival of patients with chronic myeloid leukemia: a nationwide population-based cohort study

Tom Fleischer, Tung-Ti Chang, Jen-Huai Chiang, Ching-Mao Chang, Ching-Yun Hsieh, Hung-Rong Yen ⊠

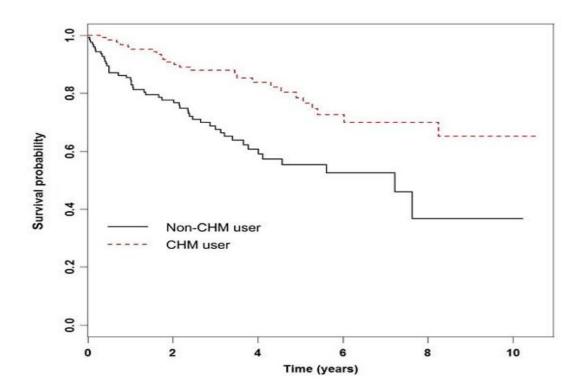
Early View

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Despite good clinical results of current drugs, a good reason still exists to search for additional therapies for the management of Chronic Myeloid Leukemia (CML). Chinese Herbal Medicine (CHM) has thus far been overlooked by researchers and no data exists on the subject. We studied the impact of adjunctive CHM on the disease course of CML, using mortality as the major outcome measurement. We used the Taiwanese National Health Insurance Research Database to perform a nationwide population-based cohort study. Our study included CML patients diagnosed between 2000 and 2010. We matched groups according to age, sex, Charlson Comorbidity Index (CCI) score and use of imatinib, and compared the Hazard Ratios (HR) of CHM group and non-CHM users, as well as characterized trends of prescriptions used for treating CML. 1371 patients were diagnosed with CML in the years examined, of which 466 were included in to this study. We found that the HR of CHM group was significantly lower compared to non-CHM groups (0.32, 95% CI 0.22-0.48, $P \leq 0.0001$). We also established that this association between reduced HR was dose-dependent, and the longer CHM users received prescriptions, the lower the HR (P < 0.01). We also analyzed the most commonly used herbal products as well as the HR associated to their use, thus providing future research candidates. Our results supply a strong reason to assume that when administered by properly trained physicians, CHM may have a substantial positive impact on the management of CML.

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Adjunctive Chinese Herbal Medicine therapy improves survival of patients with chronic myeloid leukemia: a nationwide population-based cohort study



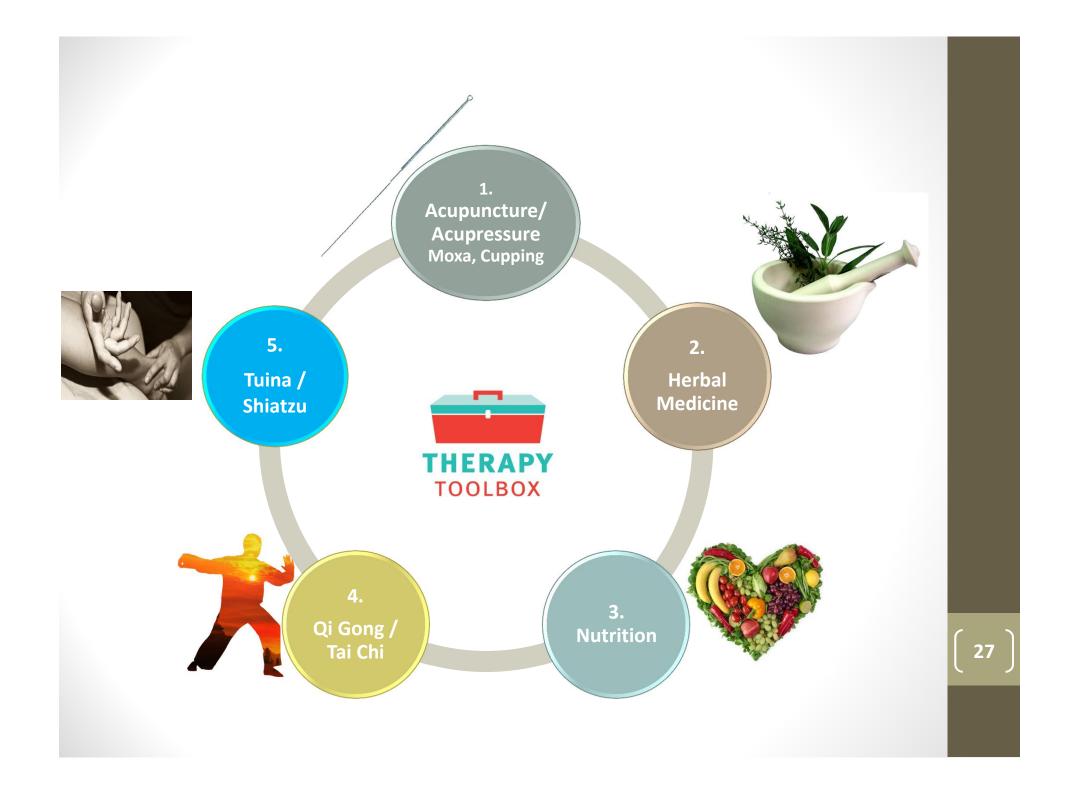
- 68% reduced risk of death with combination group compared to Imatinib group only (HR=0.32, P < 0.0001)
- 41 patients died in the combination group vs. 86 in the drugs only

Adjunctive Chinese Herbal Medicine therapy improves survival of patients with chronic myeloid leukemia: a nationwide population-based cohort study

Table 3. Hazard Ratios and 95% confidence intervals of mortality risk associated with cumulative use day of CHM among chronic myeloid leukemia patients.

Number of CHM		Number of			Crude HR	Adjusted HR ¹
visits/per year	N		Person years	IR	(95% CI)	(95% CI)
Non-CHM users	233	86	800.706	107.41	1(reference)	1(reference)
Chinese herb users						
<mark>0–30</mark> days	135	28	586.319	47.76	0.47 (0.31–0.72)***	<mark>0.43</mark> (0.28–0.67)***
<mark>30–180</mark> days	73	12	323.064	37.14	0.36 (0.20-0.65)***	<mark>0.25</mark> (0.13–0.46)***
<mark>>180</mark> days	25	1	113.509	8.81	0.08 (0.01–0.61)*	<mark>0.07</mark> (0.01–0.53)**
					Hazard Ratio(95% CI)	
			n	Frequency of mortality	Crude ¹	Adjusted ²
Non-Chinese Herbal	Medicine	group			1(reference)	1(reference)
Single-herb products						
Pin yin nomenclatu		Scientific name				
<mark>Bai Hua</mark> She She	Cao	Hedyotis diffusa	9	1	0.29 (0.04-2.08)	0.33 (0.05-2.46)
<mark>Dan</mark> Shen		Saliva miltiorrhiza	30	5	0.39 (0.16-0.97)*	0.26 (0.10-0.65)**
Huang Qi		Astragalus membranace	us 29	8	0.61 (0.29-1.26)	0.33 (0.15-0.73)**
Shan Yao		Dioscorea opposita	12	3	0.58 (0.18-1.84)	0.28 (0.09-0.93)*
Sheng Di Huang	1	Rehmannia glutinosa	25	4	0.38 (0.14-1.05)	0.24 (0.09-0.71)**
Gan Cao		Glycyrrhiza glabra	35	6	0.39 (0.17-0.90)*	0.32 (0.14-0.74)**
Yan Hu Suo		Corydalis yanhusuo	44	8	0.38 (0.18-0.78)**	0.26 (0.12-0.56)***
Ji Xue Teng		Spatholobus suberectus	22	1	0.11 (0.02-0.77)*	0.08 (0.01-0.55)*
Sha Ren		Amomum villosum	28	7	0.59 (0.27-1.28)	0.48 (0.22-1.08)
Mai Men Dong		Ophiopogon japonicus	30	4	0.30 (0.11–0.81)*	0.23 (0.08-0.64)**

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RESEARCH ARTICLE

6-Shogaol Inhibits Breast Cancer Cells and Stem Cell-Like Spheroids by Modulation of Notch Signaling Pathway and Induction of Autophagic Cell Death

 Study compared inhibitory effect of the pungent ingredient of ginger root (Shogaol-6) to Taxol on tumor cells and breast cancer stem cells (CSC)

6-Shogaol

- Inhibited breast cancer cells and stem cells 10,000x more than Taxol
- Was not toxic to cells that are not cancerous, even at high doses
- Appeared to be blocking the Notch pathway of differentiation and self-renewal of stem cells

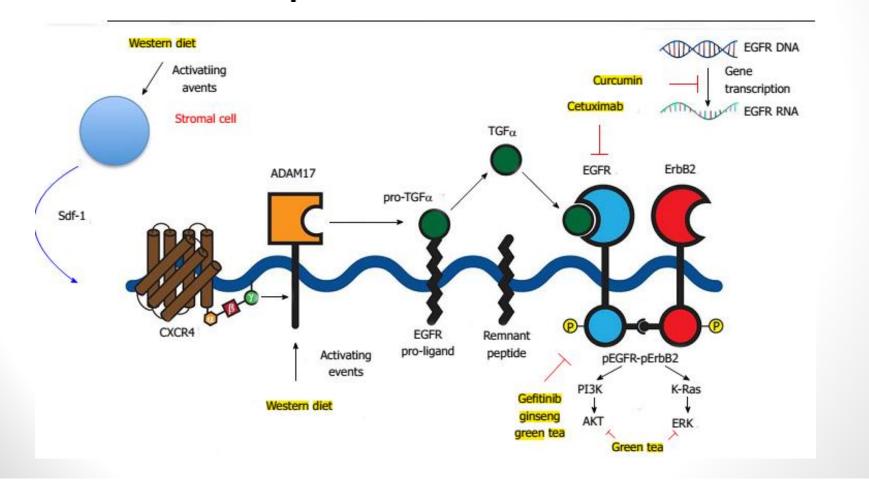


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World J Clin Oncol 2015 October 10; 6(5): 133-141

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Colon cancer and the epidermal growth factor receptor: Current treatment paradigms, the importance of diet, and the role of chemoprevention



Int J Clin Exp Med 2015;8(6):8339-8346 www.ijcem.com /ISSN:1940-5901/IJCEM0008508

Review Article The effect of green tea intake on risk of liver disease: a meta analysis

Abstract: Aim: There have been many reports on the reduction of liver disease with green tea consumption. This study aims to evaluate the body of evidence related to green tea consumption on the risk of liver disease and determine the effectiveness. Methods: Electronic searches were conducted in PubMed, CNKI, Wanfang and Weipu databases. Statistical analysis was performed using the software Revman 5.2 and Stata 12.0. Results: Meta-analysis revealed that among green tea drinkers, there was a significant reduction in the risk of liver disease (RR=0.68, 95% CI=0.56-0.82, P=0.000). This trend extends to a broad spectrum of liver conditions including hepatocellular carcinoma (RR=0.74, 95% CI=0.56-0.97, P=0.027), liver steatosis (RR=0.65, 95% CI=0.44-0.98, P=0.039), hepatitis (RR=0.57, 95% CI=0.45-0.73, P=0.000), liver cirrhosis (RR=0.56, 95% CI=0.31-1.01, P=0.053) and chronic liver disease (RR=0.49, 95% CI=0.29-0.82, P=0.007). This trend is also observed regardless of the race of the individual concerned where the Asian, American and European subgroups all demonstrated a reduced risk of liver disease. Conclusions: Green tea intake reduces the risk of liver disease. However, more long term randomized clinical trials are needed to comprehensively evaluate the health benefits of green tea.

The pooled data yielded 440903 regular green tea drinking cases and 385246 irregular green tea drinking cases from 15 studies. A Many studies have shown that the high levels of catechin, especially catechin (-)-epigallocatechin-3-gallate (EGCG), could have biological effects such as antioxidative, antiviral, anticarcinogenic, antimutagenic, anticancer, antiinflammation, anti-obesity and hypolipidaemic effects [22]. The biological actions of such mol-

Review Spices for Prevention and Treatment of Cancers

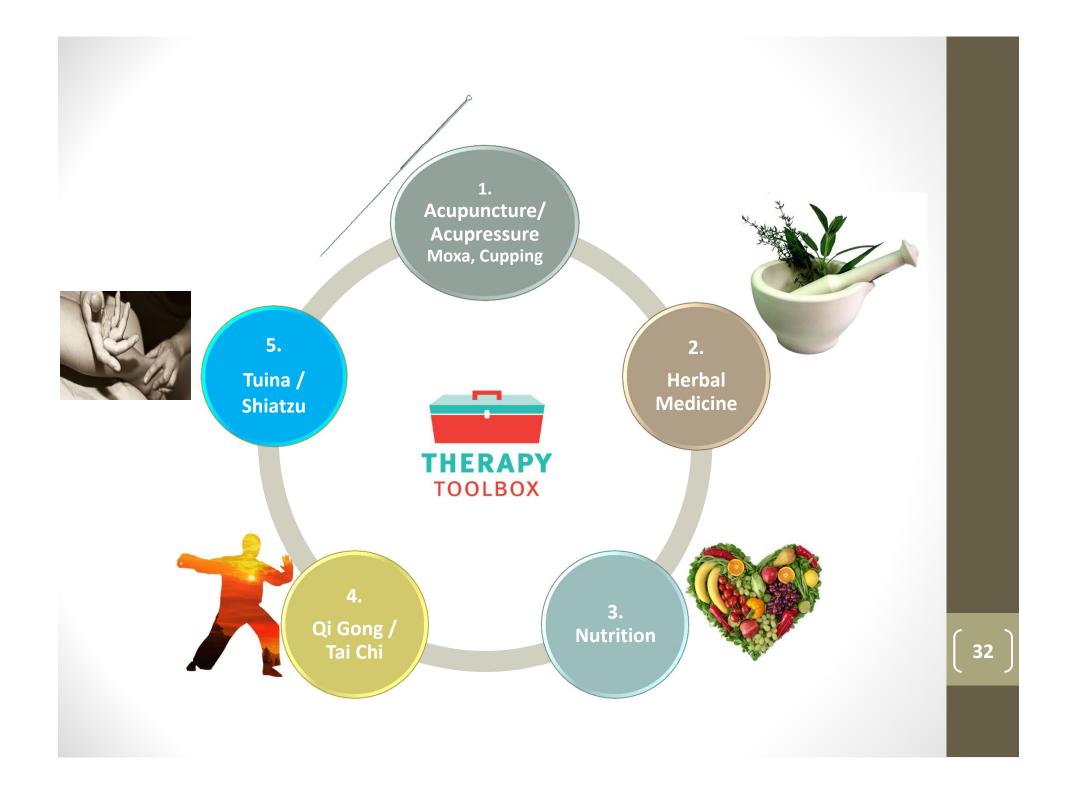
Jie Zheng¹, Yue Zhou¹, Ya Li¹, Dong-Ping Xu¹, Sha Li² and Hua-Bin Li^{1,3,*}

Sites	Spices	Constituents	Anticancer Effects	References
	Turmeric	Curcumin	Inducing apoptosis and DNA damage; inhibiting proliferation, migration, and the growth of cancer; decreasing cell growth and viability; inhibiting expression of DNA-repair-associated proteins	[34-42]
Lung	Black cumin Seed extract and seed oil; Thymoquinone		Reducing viability of human lung cancer; inhibiting proliferation, migration, and invasion of lung cancer cells	[98–100]
	Ginger	6-Shogaol	Decreasing tumorigenesis and the metastasis	[128]
	Garlic Thiacremonone		Inhibiting tumor growth	[161]
	Saffron Ethanolic extract, aqueous extract		Inducing cell death and apoptosis, inhibiting the cell proliferation	[175,176]
	Red chili pepper	Capsaicin	Restraining angiogenesis, inducing apoptosis and oxidative DNA damage	[198-201]

Table 1. The anticancer activities of spices.

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Qigong in cancer care: a systematic review and construct analysis of effective Qigong therapy

P. J. Klein¹ · Roger Schneider² · C. J. Rhoads³

Abstract

Purpose This review (a) assesses the strength of evidence addressing Qigong therapy in supportive cancer care and (b) provides insights for definition of effective Qigong therapy in supportive cancer care.

evi RIS	Fatigue			[28]	[23]	[24]	[27]	[30]
ve : lesu evi	Quality of life			[31]	[24]	[27]	[28]	[30]
eo; on;	Mediation of inflammation/Immune Support	[22]	[25]	[31]	[22]	[25]	[29]	[32]
osit	Depression	[27]	[28]	[31]	[23]	[24]]	
ige yle ons	Anxiety/Stress/Mood		[28]	[31]	[23]	[29]	I	
ate	Sleep		[24]	[27]				
	Cognition				[29]	l		
	Systolic BP			[22]				
	Survival Rate			[26]				
	Group diff. not s more indicato							qigong (p<0.05 itors within a st

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Levels of fatigue and distress in senior prostate cancer survivors enrolled in a 12-week randomized controlled trial of Qigong

Rebecca A. Campo · Neeraj Agarwal · Paul C. LaStayo · Kathleen O'Connor · Lisa Pappas · Kenneth M. Boucher · Jerry Gardner · Sierra Smith · Kathleen C. Light · Anita Y. Kinney

Abstract

Purpose Fatigue is a commonly reported symptom by prostate cancer survivors and is associated with significant distress and declines in quality of life. Qigong is a mind–body activity that consists of both physical activity and meditative aspects. This 12-week randomized controlled trial examined the feasibility and efficacy of a Qigong intervention for improving older prostate cancer survivors' levels of fatigue and distress. Methods Forty older (median age=72, range=58–93), fatigued (cut-off value of ≥ 1 on the CTCAEv4.0, ≥ 20 on a fatigue grading scale), and sedentary (<150 min of moderate exercise/week) prostate cancer survivors were randomized to 12 weeks of Qigong or stretching classes. Primary outcomes were feasibility (i.e., retention and class attendance rates) and fatigue [Functional Assessment of Chronic Illness Therapy— Fatigue (FACIT-Fatigue)], and secondary outcome was distress [Brief Symptom Inventory-18 (BSI-18)].

minimize predictability of assignment. The Qigong and nonaerobic stretching exercise classes were 60 min in duration, held 2 days per week for 12 weeks at HCI's Survivorship & Wellness Center, and supplemented with home-based practice.

Levels of fatigue and distress in senior prostate cancer survivors enrolled in a 12-week randomized controlled trial of Qigong

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	Qigong median (range) n=16	Stretch median (range) n=13	p value
FACIT-Fatigue			
Baseline	34.0 (14-46)	38.0 (18-49)	.56
Change (post-baseline)	5.0 (-3-30)	0 (-22-9)	.02
BSI-18 depression			
Baseline	57.5 (42-78)	60.0 (42-67)	.65
Change (post-baseline)	-6.5 (-20-2)	0.0 (-12-19)	.09
BSI-18 somatization			
Baseline	54.0 (40-69)	54.0 (40-64)	.76
Change (post-baseline)	-6.5 (-17-7)	0.0 (-10-11)	.048
BSI-18 anxiety			
Baseline	47.0 (39-71)	48.0 (39-67)	.65
Change (post-baseline)	-7.5 (-23-9)	0.0 (-9-26)	.003
BSI-18 Global Severity Inde	x		
Baseline	52.0 (48-71)	57.0 (41-68)	.91
Change (post-baseline)	-7.0 (-18-5)	0.0 (-10-20)	.002

To Summarize...

- CM has plenty to offer in preventing, as well as, during and after treatment of cancer
- Most of the data is only on *palliative care*, suggesting significant impact on fatigue, nausea, pain and QoL, while for other aspects there is data that is either conflicting or not sufficiently robust
- There is also evidence from herbal and nutritional databases and/or trials suggesting *significant impact on survival and recurrence*
- There are additional significant challenges beyond those related to conducting quality clinical research in CM
- Additional robust research will further substantiate the effectiveness and benefit of CM in Oncology and further support its integration into Western Medicine

Dear Optimist and Pessimist: While you were debating whether the glass was half full or half empty, I drank it. Sincerely, The Opportunist

somee cards



