

Table 2: Randomized clinical trials of acupuncture for chemotherapy-associated nausea and vomiting published since the systematic reviews

Source: Karen Pilkington, Vinjar Fønnebø, CAM-Cancer Consortium [Acupuncture for chemotherapy-associated nausea and vomiting \[online document\]](#), July 2019

Trials using the P6 acupuncture point

First author, year, (ref)	Study design	Participants (number, diagnosis)	Interventions (experimental treatments, control)	Main outcome measures	Main results	Comments
Avc et al. 2016 (24)	Randomised controlled trial (3-arm)	90 patients with acute myeloblastic leukemia	Acupressure at P6 using wrist bands or finger pressure or no acupressure	Self-scoring using a visual analogue scale	Acupressure band reduced frequency and severity of nausea-vomiting (p<0.05); Finger pressure did not have an effect (p>0.05)	Quasi-randomised (by order of admission) Not blinded; self-assessed. Attrition not reported. Power was adequate assuming there was no attrition.
Fang et al. 2012 (34)	RCT	60 breast cancer patients	Portable moxibustion combined with acupoint massage in addition to the treatment in the control group: control group: intravenous anti-emetic before and after chemotherapy.	Vomiting (treatment and prevention)	Total effective rates in the treatment group and the control group were 88.2 and 38.5%, respectively. Significant difference in curative effect of the two groups (P <0.01). 'Portable moxibustion combined with acupoint massage therapy ...can effectively treat vomiting after chemotherapy'.	Randomisation and allocation concealment: not able to determine (full article not available) Not blinded. Method of outcome assessment: not able to determine Power and attrition: not able to determine

Genc et al. 2012 (20)	Single-blinded randomized trial	120 patients with breast, gynaecological, and lung cancer	Nausea wristband (Sea-Band) (acupressure at P6) versus 'placebo nausea band' (no further details).	Patient description form, Rhodes Index of Nausea, Vomiting, and Retching (INVR), and Functional Assessment of Cancer Therapy-General	No difference was found between groups. Concluded that acupressure wristband was not an effective approach in preventing CINV	No details of randomization Reported as single-blinded Attrition not reported. Study was adequately powered assuming there was no attrition.
Liu et al. 2015 (17)	RCT	60 patients with gynaecological tumors	Wrist-ankle acupuncture and ginger moxibustion, versus tropisetron hydrochloride and dexamethasone	Simple scoring system for Frequency of nausea Anti-emetic effect Adverse events	Significant difference in nausea on 2nd-5th days of chemotherapy ($p<0.01$). Significant difference in vomiting only on 3rd day ($p<0.05$) Incidence of constipation lower in treatment group 1 patient suffered a post-acupuncture side effect (subcutaneous blood stasis)	Randomization and allocation adequate Not blinded except to statisticians No attrition reported. No power calculation as pilot study.
Molassiotis et al. 2013 (21) (also reported as Molassiotis et al. 2014 [22])	Randomised three-arm sham-controlled trial	500 chemotherapy-naive cancer patients	Wristband versus sham wristband versus standard care only	Rhodes Index for Nausea/Vomiting, the Multinational Association of Supportive Care in Cancer (MASCC) Antiemesis Tool and the Functional Assessment of Cancer Therapy - General (FACT-G).	No statistically significant differences between the three arms in terms of nausea, vomiting and quality of life (FACT-G scale) Some transient local adverse effects were reported	Randomisation was adequate and accounted for gender, age and three levels of emetogenic chemotherapy Some unblinding of patient took place Power based on initial data and adequate

Rithirangsiroj et al. 2015 (18)	RCT (cross-over)	70 cancer patients	Acupuncture at P6 point before chemotherapy infusion versus ondansetron intravenously	Emetic episode, severity of nausea score of 0-10 and adverse events	Acupuncture is effective in preventing delayed CINV and in promoting better QOL. Significantly higher rate of prevention of delayed CINV (p=0.02), lower delayed nausea (p=0.004), nausea score (p<0.001), less medication (p=0.002) in acupuncture group, less frequent constipation (p=0.02) and insomnia (p=0.01).	Random sequence generated by random number generator, no information on allocation No mention of blinding of assessors Adequate sample size based on power calculation and no loss to follow-up reported
Suh 2012 (23)	RCT four-arm	120 breast cancer patients	P6 acupressure plus nurse-provided counselling; counselling only; P6 acupressure only, and control (placebo on S13)	Nausea, retching, vomiting	'Synergic effects of P6 acupressure with nurse-provided counseling appeared to be effective in reducing CINV in patients with breast cancer.'	Randomisation and allocation concealment adequate. Not blinded and outcomes self-reported Adequate sample size based on power calculation and attrition not significantly different across the groups.
Widgren and Enblom 2017 (19)	Randomised controlled trial (3 arm)	68 patients with gynaecological, colorectal, other cancer types (57 randomised; 11 concurrent control)	Acupuncture at P6 versus sham (non-penetrating needle)	Emesis questionnaire designed for the study	Non-significant difference in nausea (p=0.074) although more patients required antiemetics in the sham group (p=0.019).	Sub-group from a larger, adequately randomized trial. Single-blinded 1 patient lost to follow up but power unclear as sub-group from a larger trial.

Trials using other acupuncture points

First author, year, (ref)	Study design	Participants (number, diagnosis)	Interventions (experimental treatments, control)	Main outcome measures	Main results	Comments
Eghbali et al. 2016 (27)	RCT cross-over trial	48 breast cancer patients	Auricular acupressure at 5 points versus no acupressure	Morrow standard questionnaire (1984)	Intensity and frequency of nausea was reduced by acupressure ($p < 0,001$) except for frequency in acute period ($p < 0.07$). Vomiting was improved by acupressure. Note: results were unclear	No details of randomization Blinding was unclear Attrition not reported
Kong et al. 2018 (28)	Single blinded RCT	110 gastric cancer patients	Acupressure applied to specific auricular points versus non-specific points	Patient recording based on National Cancer Institute (NCI) common toxicity criteria (version 2.0) guidelines for nausea, vomiting and diarrhea	Incidence was similar ($p > 0.05$) but less severe ($p > 0.05$) in the intervention group.	'restricted randomization methods' were used Single blinded Attrition: 15 patients lost to follow up; no reasons given
Zhou et al. 2017 (29)	Randomised controlled trial	56 gastric cancer patients	Acupuncture at 5 points versus no acupuncture	Self-reported frequency of vomiting and diarrhea, duration of nausea, and abdominal pain	Significant beneficial effects were reported in the acupuncture group.	No details of randomization. Not blinded and self-assessed. Attrition not reported

Shen et al. 2015 (30)	RCT	103 patients diagnosed with primary or metastatic liver cancer	Acustimulation at the K1 acupoint compared with electrostimulation at a placebo point on the heel. (both groups also received tropisetron)	Rate, intensity, and duration of nausea and vomiting, quality of life	No differences were found between groups with regard to the incidence and degree of nausea or vomiting	Randomisation and allocation concealment adequate Patients were blinded and nurses not practitioners delivered treatment and conducted assessments Adequately powered
McKeon et al. 2018 (31)	Pilot study (randomised, 3 arm)	60 patients with various cancers	Electroacupuncture at 8 points versus sham (non-specific points) versus standard care	FLIE (Functional Living Index Emesis) a validated, nausea and vomiting-specific, patient-centred measure	No difference was detected between groups but this was a small pilot study intended to inform a subsequent RCT.	Randomisation was adequate Patients and outcome assessors were blinded 11 patients were lost to follow-up with no reason given
Xie et al. 2017 (32)	Single-blinded randomised controlled trial	142 liver cancer patients	Transcutaneous electrical acupoint stimulation (TEAS) at 3 points versus placebo acupuncture	Patient recorded frequency and severity of nausea and vomiting	No significant differences	Randomisation by minimization; no further details. Single-blinded No attrition
Zhang et al. 2014 (33)	RCT	72 cancer patients	Needleless transcutaneous electroacupuncture (TEA) at Neiguan (PC6) and Jianshi (PC5) versus electroacupuncture at non-acupoints (plus ondansetron)	Acute phase and delayed phase nausea and vomiting	Needleless transcutaneous electroacupuncture at PC6 improves emesis and reduces nausea in the delayed phase of chemotherapy but did not have additive effects in the acute phase.	Random sequence computer generated, no information on allocation Level of blinding, power and attrition not reported