



RESEARCH UPDATES OCTOBER 2013

INSIDE:

Breast Cancer	1
Endometrial Cancer	2
Colorectal Cancer	2
Leukemia	3
Acupuncture	3,4
Homeopathy	4
Chemotherapy Symptoms	4
STUDY OF THE MONTH	5

Research Updates is published once a month to provide the latest integrative cancer care research to patients, health care providers, and the public.

To support this valuable educational service, please donate at:
www.inspirehealth.ca/donate

FOR THE LATEST IN WORLDWIDE INTEGRATIVE CANCER CARE

IN THIS ISSUE: Gho et al. found that women who were more physically active had fewer side-effects from breast cancer treatment than those who were less active. Cassileth and colleagues found that acupuncture was effective in reducing swelling caused by breast cancer related lymphedema. Arem and associates concluded that fish oil supplements containing omega-3 fatty acids reduced the risk of endometrial cancer. Kyro and colleagues found that intake of whole grains was associated with a lower incidence of colorectal cancer. Tonorezos et al. found that adult survivors of childhood acute lymphoblastic leukemia who adhered to the Mediterranean diet had better metabolic profiles than those who did not. Paubelle and associates found that elderly patients with acute myeloid leukemia who were treated with a combination of deferasirox and vitamin D had an increased survival when compared to those who were receiving the best supportive care alone. Wang et al. found that an acupoint application with a Dingqi analgesic patch helped to enhance pain relief by conventional medications in patients with liver cancer. Hou and Yu found that acupuncture-moxibustion combined with cupping helped improve stomach emptying in abdominal cancer patients following surgery. Toliopoulos et al. evaluated the usefulness of several homeopathic complex remedies as adjuvant immunotherapies in advanced cancer patients. Zhao and colleagues found that the dietary therapy of qi-yin-reinforcing porridge was beneficial in alleviating debility for patients undergoing FOLFOX chemotherapy for gastrointestinal tumours. In our study of the month, Burton and associates concluded that many psychologists are willing and able to promote physical activity as part of psychological treatment.

BREAST CANCER

Gho, SA, J. R. Steele, S. C. Jones et al.

Self-Reported Side Effects of Breast Cancer Treatment: A Cross-Sectional Study of Incidence, Associations, and the Influence of Exercise.

Cancer Causes Control. 2013 March 2013; 24(3): 517-528.

PURPOSE: Side effects as a result of breast cancer treatment may have a lasting detrimental impact on quality of life. Exercise has been shown to be an effective intervention in post-treatment care. This study aimed to gain a better understanding of breast cancer treatment-related side effects through identifying potential patient characteristic associations, including current levels of exercise. **METHODS:** Four hundred and thirty-two breast cancer patients completed an online survey covering their treatment and demographic background, current exercise levels, and self-reported treatment side effects. Side effects were considered in a binary logistic regression against age, surgery, currently undergoing treatment, and exercise levels to ascertain significant relationships ($p < 0.05$) and associative values (Odds Ratio). **RESULTS:** Lumpectomy patients were less likely to report aching muscles (OR 0.61, 95% CI 0.39-0.96), hot flushes (OR 0.60, 95% CI 0.38-0.96), and weight gain (OR 0.59, 95% CI 0.38-0.92) than mastectomy patients. Women currently undergoing treatment were more likely to report hot flushes (OR 3.77, 95% CI 2.34-6.08), aching muscles (OR 1.62, 95% CI 1.02-2.57), and weight gain (OR 1.89, 95% CI 1.19-2.99) than women finished treatment. Sedentary women were more likely to experience shoulder limitations (OR 1.77, 95% CI 1.14-2.77), muscular chest wall pain (OR 1.69, 95% CI 1.07-2.65), weight gain (OR 2.29, 95% CI 1.44-3.64), lymphedema (OR 1.68, 95% CI 1.04-2.71), and breathlessness (OR 2.30 95% CI 1.35-3.92) than their physically active counterparts. **CONCLUSIONS:** Patient characteristics may inform interventions to improve care post-breast cancer treatment. Sufficient levels of exercise were consistently associated fewer side effects and should be encouraged.

INSPIREHEALTH'S INTERPRETATION: Breast cancer patients who are physically active are less likely to report aching muscles, weight gain, shoulder limitations, chest wall pain, lymphedema (build up of lymph fluid) and breathlessness than those who are less active.

Cassileth, BR, K. J. Van Zee, K. S. Yeung, et al.

Acupuncture in the Treatment of Upper-Limb Lymphedema: Results of a Pilot Study.

Cancer. 2013 01 Jul 2013; 119(13): 2455-2461

BACKGROUND: Current treatments for lymphedema after breast cancer treatment are expensive and require ongoing

intervention. Clinical experience and our preliminary published results suggest that acupuncture is safe and potentially useful. This study evaluates the safety and potential efficacy of acupuncture on upper-limb circumference in women with lymphedema. **METHODS:** Women with a clinical diagnosis of breast cancer-related lymphedema (BCRL) for 0.5-5 years and with affected arm circumference ≥ 2 cm larger than unaffected arm received acupuncture treatment twice weekly for 4 weeks. Affected and unaffected arm circumferences were measured before and after each acupuncture treatment. Response, defined as $\geq 30\%$ reduction in circumference difference between affected/unaffected arms, was assessed. Monthly follow-up calls for 6 months thereafter were made to document any complications and self-reported lymphedema status. **RESULTS:** Among 37 enrolled patients, 33 were evaluated; 4 discontinued due to time constraints. Mean reduction in arm circumference difference was 0.90 cm (95% CI, 0.72-1.07; $P < .0005$). Eleven patients (33%) exhibited a reduction of $\geq 30\%$ after acupuncture treatment. Seventy-six percent of patients received all treatments; 21% missed 1 treatment, and another patient missed 2 treatments. During the treatment period, 14 of the 33 patients reported minor complaints, including mild local bruising or pain/tingling. There were no serious adverse events and no infections or severe exacerbations after 255 treatment sessions and 6 months of follow-up interviews. **CONCLUSIONS:** Acupuncture for BCRL appears safe and may reduce arm circumference. Although these results await confirmation in a randomized trial, acupuncture can be considered for women with no other options for sustained arm circumference reduction.

INSPIREHEALTH'S INTERPRETATION: Acupuncture for breast cancer-related lymphedema is safe and may reduce arm circumference.

ENDOMETRIAL CANCER

Arem, H, M. L. Neuhaus, M. L. Irwin, et al.

Omega-3 and Omega-6 Fatty Acid Intakes and Endometrial Cancer Risk in a Population-Based Case-Control Study.

Eur J Nutr. 2013 April 2013; 523: 1251-1260.

PURPOSE: Animal and laboratory studies suggest that long-chain omega-3 (n-3) fatty acids, a type of polyunsaturated fat found in fatty fish, may protect against carcinogenesis, but human studies on dietary intake of polyunsaturated fats and fish with endometrial cancer risk show mixed results. **METHODS:** We evaluated the associations between endometrial cancer risk and intake of fatty acids and fish in a population-based sample of 556 incident cancer cases and 533 age-matched controls using multivariate unconditional logistic regression methods. **RESULTS:** Although total n-3 fatty acid intake was not associated with endometrial cancer risk, higher intakes of eicosapentaenoic (EPA 20:5) and docosahexaenoic (DHA 22:6) fatty acids were significantly associated with lower risks (OR = 0.57, 95 % CI: 0.39-0.84; OR = 0.64, 95 % CI: 0.44-0.94; respectively) comparing extreme quartiles. The ratio of n-3:n-6 fatty acids was inversely associated with risk only on a continuous scale (OR = 0.84, 95 % CI: 0.71-0.99), while total fish intake was not associated with risk. Fish oil supplement use was significantly associated with reduced risk of endometrial cancer: OR = 0.63 (95 % CI: 0.45-0.88). **CONCLUSIONS:** Our results suggest that dietary intake of the long-chain polyunsaturated fatty acids EPA and DHA in foods and supplements may have protective associations against the development of endometrial cancer.

INSPIREHEALTH'S INTERPRETATION: Dietary omega-3 fatty acids can protect against the risk of endometrial cancer. Moreover, intake of fish oil supplements (a good source of omega-3 fatty acids) can reduce the risk by 37%.

COLORECTAL CANCER

Kyro, C, G. Skeie, S. Loft, et al.

Intake of Whole Grains from Different Cereal and Food Sources and Incidence of Colorectal Cancer in the Scandinavian HELGA Cohort.

Cancer Causes Control. 2013 July 2013; 247: 1363-1374.

PURPOSE: A high intake of whole grains has been associated with a lower incidence of colorectal cancer, but few studies are available on the association with whole grains from different cereals, for example, wheat, rye and oats, and none has addressed these separately. The objective of this study was to investigate the association between whole-grain intake and colorectal cancer. **METHOD:** We used data from the large population-based Scandinavian cohort HELGA consisting of 108,000 Danish, Swedish, and Norwegian persons, of whom 1,123 developed colorectal cancer during a median of 11 years of follow-up. Detailed information on daily intake of whole-grain products, including whole-grain bread, crispbread, and breakfast cereals, was available, and intakes of total whole grains and specific whole-grain species (wheat, rye, and oats) were estimated. Associations between these whole-grain variables and the incidence of colorectal cancer were investigated using Cox proportional hazards models. Intake of whole-grain products was associated with a lower incidence of colorectal cancer per 50-g increment (incidence rate ratio [IRR], 0.94; 95% confidence interval [CI], 0.89, 0.99), and the same tendency was found for total whole-grain intake (IRR pr. 25-g increment, 0.94; 95% CI, 0.88, 1.01). Intake of whole-grain wheat was associated with a lower incidence of colorectal cancer (IRR for highest versus lowest quartile of intake, 0.66; 95% CI, 0.51, 0.85), but no

statistical significant linear trend was observed (p for trend: 0.18). No significant association was found for whole-grain rye or oats. **CONCLUSION:** Whole-grain intake was associated with a lower incidence of colorectal cancer.

INSPIREHEALTH'S INTERPRETATION: Increasing intake of whole grains and their products can reduce the risk of colorectal cancer as demonstrated in this large Scandinavian cohort study

LEUKEMIA

Tonorezos, ES, K. Robien, D. Eshelman-Kent, et al.

Contribution of Diet and Physical Activity to Metabolic Parameters among Survivors of Childhood Leukemia.

Cancer Causes Control. 2013 February 2013; 242: 313-321.

PURPOSE: Determine the relationship between diet and metabolic abnormalities among adult survivors of childhood acute lymphoblastic leukemia (ALL). **METHODS:** We surveyed 117 adult survivors of childhood ALL using the Harvard Food Frequency Questionnaire. Physical activity energy expenditure (PAEE) was measured with the SenseWear Pro2 Armband. Insulin resistance was estimated using the Homeostasis Model for Insulin Resistance (HOMA-IR). Visceral and subcutaneous adiposity were measured by abdominal CT. Adherence to a Mediterranean diet pattern was calculated using the index developed by Trichopoulos. Subjects were compared using multivariate analysis adjusted for age and gender. **RESULTS:** Greater adherence to a Mediterranean diet pattern was associated with lower visceral adiposity ($p = 0.07$), subcutaneous adiposity ($p < 0.001$), waist circumference ($p = 0.005$), and body mass index ($p = 0.04$). For each point higher on the Mediterranean Diet Score, the odds of having the metabolic syndrome fell by 31 % (OR 0.69; 95 % CI 0.50, 0.94; $p = 0.019$). Higher dairy intake was associated with higher HOMA-IR ($p = 0.014$), but other individual components of the Mediterranean diet, such as low intake of meat or high intake of fruits and vegetables, were not significant. PAEE was not independently associated with metabolic outcomes, although higher PAEE was associated with lower body mass index. **CONCLUSIONS:** Adherence to a Mediterranean diet pattern was associated with better metabolic and anthropometric parameters in this cross-sectional study of ALL survivors.

INSPIREHEALTH'S INTERPRETATION: Adherence to a Mediterranean diet was associated with lower risk of metabolic syndrome in this group of adult survivors of childhood acute lymphoblastic leukemia.

Paubelle, E, F. Zylbersztejn, S. Alkhaeir, et al.

Deferasirox and Vitamin D Improves overall Survival in Elderly Patients with Acute Myeloid Leukemia After Demethylating Agents Failure.

PLoS One. 2013 Jun 20; 86: e65998.

BACKGROUND: The prognosis of acute myeloid leukemia (AML) in elderly (≥ 65 years) patients is poor and treatment remains non-consensual especially for those who are not eligible for intensive therapies. Our group has shown that in vitro the iron chelator deferasirox (DFX) synergizes with vitamin D (VD) to promote monocyte differentiation in primary AML cells. **METHODS:** Herein, we present results from a retrospective case-control study in which the association of DFX (1-2 g/d) and 25-hydroxycholecalciferol (100,000 IU/week) (DFX/VD) was proposed to patients following demethylating agents failure. **RESULTS:** Median survival of patients treated with DFX/VD combination ($n=17$) was significantly increased in comparison with matched patients receiving best supportive care (BSC) alone ($n=13$) (10.4 versus 4 months respectively). In addition, the only factor associated to an increased overall survival in DFX/VD-treated patients was serum VD levels. **CONCLUSION:** We conclude that DFX/VD treatment correlated with increased overall survival of AML patients in this retrospective cohort of elderly patients.

INSPIREHEALTH'S INTERPRETATION: Elderly patients with acute myeloid leukemia who received a combination of Deferasirox and vitamin D had increased overall survival when compared to those receiving best supportive care alone.

ACUPUNCTURE

Wang, C, W. Tan, X. Huang, et al.

Curative Effect of Dingqi Analgesic Patch on Cancer Pain: A Single-Blind Randomized Controlled Trial.

J Tradit Chin Med. 2013 Apr; 332: 176-180.

OBJECTIVE: To observe the curative effect of an acupoint application with a Dingqi analgesic patch on moderate to severe pain caused by liver cancer. **METHODS:** Forty patients with moderate to severe pain caused by liver cancer were randomly divided into a treatment group (TG) and a control group (CG). Patients with moderate pain were given 100 mg qd of a sustainably released tablet of tramadol hydrochloride; patients with severe pain were given 4.2 mg q3d of the fentanyl transdermal system. The ashi points Ganshu (BL 18), Danshu (BL 19) and Qimen (LR 14) were chosen for the acupoint application intervention. CG patients were given a sham patch and TG patients were given a Dingqi analgesic patch. A visual analogue scale (VAS) was used before treatment and after 1, 3, 6, 9 and 12 days of treatment. The Karnofsky score was measured before treatment and after

12 days of treatment. Any main adverse reactions (e.g. nausea, constipation, dizziness and headache) were recorded after 6 and 12 days of treatment. Any skin side effects (i.e. skin irritation and allergic reactions) were recorded. **RESULTS:** The VAS in TG was significantly lower than that in CG after 3, 6, 9 and 12 days of treatment ($P < 0.05$). There was no significant difference in the Karnofsky score before treatment and after 12 days of treatment between CG and TG. There were also no significant differences in the main adverse reactions or skin side effects after 6 and 12 days of treatment between CG and TG ($P > 0.05$). **CONCLUSION:** The Dingqi analgesic patch can enhance the analgesic effect of tramadol and fentanyl.

INSPIREHEALTH'S INTERPRETATION: Based on Traditional Chinese Medicine, a Dingqi analgesic patch was designed to deliver active compounds from herbs through the skin. When applied to acupressure points, the patch can enhance the effect of the pain relievers tramadol and fentanyl in liver cancer patients, without any major adverse reactions or skin side effects in as little as 3 days, and up to 12 days.

Hou, X- and S. Yu.

Thirty-Six Cases of Postsurgical Gastroparesis of Abdominal Cancer Treated by Comprehensive Therapy of Acupuncture-Moxibustion.

World Journal of Acupuncture - Moxibustion. 2013 January 2013; 231: 53-55.

OBJECTIVE: To observe clinical efficacy of acupuncture-moxibustion combined with cupping on postsurgical gastroparesis of abdominal cancer. **METHODS:** Thirty-six cases of postsurgical gastroparesis of abdominal cancer were treated with (1) acupuncture at Weishu (BL 21), Shangwan (CV 13), Zhongwan (CV 12), Xiawan (CV 10) and Tianshu (ST 25) to dredging the meridians, (2) quick cupping on local area to promote gastrointestinal motility and (3) mild moxibustion at CV 12, Shanque (CV 8) and Zusanli (ST 36). The treatment was given once a day, 5 times made a course. The clinical efficacy was assessed after two courses of treatment. **RESULTS:** After the treatment, 27 cases were cured, 6 cases were effective and 3 cases were failed, and the total effective rate was 91.7% (33/36). **CONCLUSION:** The acupuncture-moxibustion combined with cupping has remarkable clinical efficacy on postsurgical gastroparesis of abdominal cancer.

INSPIREHEALTH'S INTERPRETATION: Acupuncture-moxibustion (a form of Traditional Chinese heat therapy) combined with cupping helped to improve postsurgical gastroparesis (delayed stomach emptying) in 36 abdominal cancer patients.

HOMEOPATHY

Toliopoulos IK, Simos Y, Bougiouklis D, et al.

Stimulation of natural killer cells by homeopathic complexes: An in vitro and in vivo pilot study in advanced cancer patients.

Cell Biochem Funct. 2013, [Epub ahead of print].

BACKGROUND: The present study was designed in order to evaluate the effects of five homeopathic complex preparations on functional activity natural killer cells (NKC) in advanced cancer patients. **METHODS:** We examined the effects of Coenzyme Compositum®, Ubichinon Compositum®, Glyoxal Compositum®, Katalysatoren® and Traumeel® on the functional activity of NKCs. Experimental procedures included in vitro and in vivo trials. The in vitro trials were performed in NKCs isolated from 12 healthy volunteers (aged 44 ± 4 years) and incubated with the five homeopathic complex preparations. The in vivo trials were performed in 15 advanced cancer patients (aged 55 ± 12 years) supplemented for 3 months with the homeopathic preparations. **RESULTS:** All five homeopathic preparations significantly increased the cytotoxic activity of the NKCs at the lowest NKCs/target cell ratio 12:1 ($p < 0.05$). The order of activity was: Ubichinon Compositum® > Glyoxal Compositum® > Katalysatoren® > Traumeel® > Coenzyme Compositum®. In the advanced cancer patients, the homeopathic preparation significantly increased NKCs cytotoxic activity ($p < 0.05$). **CONCLUSION:** The homeopathic complex preparations tested in this study can be used as an adjuvant immunotherapy in advanced cancer patients.

INSPIREHEALTH'S INTERPRETATION: Within our immune system, natural killer cells function to destroy tumour cells. The five homeopathic complex preparations tested significantly increased the natural killer cell activity in advanced cancer patients, and therefore can be used as adjuvant immunotherapy.

CHEMOTHERAPY SYMPTOMS

Zhao, C-, B. He, Y. -F Yang, et al.

Dietary Therapy of Qi-Yin-Reinforcing Porridge for the Alleviation of Chemotherapy Related Symptoms of Gastrointestinal Tumors: A Single-Case Randomized Controlled Study.

Chin J Integr Med. 2013 June 2013; 196: 418-423.

OBJECTIVE: To investigate the efficacy of dietary therapy of qi-yin-reinforcing porridge for the alleviation of clinical symptoms during FOLFOX chemotherapy. **METHODS:** A single-case randomized controlled study was carried out. Fourteen patients with gastrointestinal tumors accepting FOLFOX chemotherapy were enrolled using self-crossover control design. On days 1-7 of chemotherapy, the dietary therapy experimental group and the placebo control group were given dietary therapy of

qi-yin-reinforcing porridge and dextrin-prepared porridge which had the same appearance, smell, color and taste as the qi-yin-reinforcing porridge, respectively. Fourteen clinical symptoms, including debility, vomiting and nausea, etc. were observed. **RESULTS:** Ten patients completed the study and were estimable. The qi-yin-reinforcing porridge demonstrated certain efficacy in alleviating clinical symptoms of patients with gastrointestinal tumors during the period of chemotherapy. Better effect of alleviating debility was found in the dietary therapy experimental group than in the placebo control group, and the difference was statistically significant ($Z=2.27$, $P=0.02$). No statistically significant difference was found between the experimental group and the control group with respect to the effect of alleviating the other 13 clinical symptoms including anorexia, nausea, vomiting, dry stool, loose stool, etc. and body weight ($P>0.05$). **CONCLUSION:** Dietary therapy of qi-yin-reinforcing porridge shows an additional benefit in alleviating debility of patients during chemotherapy and deserves clinical use and popularization.

INSPIREHEALTH'S INTERPRETATION: Dietary therapy of qi-yin-reinforcing porridge (made from rice, coix seeds and Chinese herbal medicine extracts) helped to alleviate debility in 10 patients with gastrointestinal tumors during FOLFOX chemotherapy treatment.

STUDY OF THE MONTH

Burton, NW, K. I. Pakenham and W. J. Brown.

Are Psychologists Willing and Able to Promote Physical Activity as Part of Psychological Treatment?

Int J Behav Med. 2010 Dec 2010; 174: 287-297.

BACKGROUND: Physical activity can provide psychological benefits, but there is little research on psychologists' promoting activity as part of psychological treatment. **PURPOSE:** This study assessed psychologists' attitudes to and frequency of providing activity advice and counseling. **METHOD:** A mail questionnaire sent to 620 psychologists provided 236 responses (38%). Items assessed frequency of providing activity advice and counseling, confidence to provide activity advice and counseling, perceived efficacy of activity for managing physical and psychological conditions, acceptability of activity advice and counseling, knowledge of national activity guidelines, exposure to training in activity promotion, and practice and sociodemographic characteristics. Data were analysed using descriptive statistics and multiple linear regression analyses. **RESULTS:** Among respondents, 83% reported often recommending activity, 67% often provided activity advice, and 28% often did activity counseling. There was a high level of acceptability for physical activity promotion as part of psychological treatment. Over 80% of respondents were confident to provide general activity advice, discuss activity options, and problem solve barriers to activity, but less than half were confident to monitor activity levels or to tailor advice. Factors significantly associated with providing activity advice and counseling were: if the psychologist reported doing regular exercise, confidence to provide general activity advice, high acceptability, working in private practice, and clients presenting with general health and well-being issues ($p<0.05$). Seventy-two percent of respondents were interested in attending a workshop on providing activity advice and counseling. **CONCLUSION:** Many psychologists are willing and potentially able to promote physical activity as part of psychological treatment and would be likely to participate in relevant professional development.

INSPIREHEALTH'S INTERPRETATION: Physical activity can provide psychological benefits, and this survey indicated that psychologists can and will recommend physical activity as part of psychological treatment.

We are grateful to the Prostate Cancer Foundation BC and the Canadian Breast Cancer Foundation (BC/Yukon) for their generous support of *Research Updates*.



Canadian
Breast Cancer
Foundation
BC • YUKON



www.prostatecancerbc.ca
www.cbcbf.org

InspireHealth provides patients with the knowledge, tools, and services to support their overall health during and after cancer treatment. Our medical doctors value conventional cancer treatments such as chemotherapy, radiation, and surgery. At the same time, they recognize the importance of supporting health, immune function, body, mind, and spirit.

InspireHealth's programs are supported by current research and can be safely integrated with patient's conventional treatments.

InspireHealth's *Research Updates* are compiled by Jan Rennie and Dr. Cletus D'Souza, PhD—with guidance from the editorial board—using InspireHealth's Research Information System, a unique integrative cancer care knowledge management database. The editorial team selects authoritative articles based on their evidence and their relevance to this area of medicine. The editorial board includes: Dr. Hal Gunn, CEO and Co-founder, Dr. Janice Wright, Dr. Teresa Clarke, Dr. Ron Puhky, and Dr. Walter Lemmo, ND. For more information, email library@inspirehealth.ca

#200-1330 West 8th Ave.
Vancouver, BC, V6H 4A6
604.734.7125

#212-2187 Oak Bay Ave.
Victoria, BC V8R 1G1
250.595.7125

#123-565 Bernard Ave.
Kelowna, BC V8R 1G1
250.861.7125

inspirehealth.ca