



RESEARCH UPDATES MAY 2013

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FOR THE LATEST IN WORLDWIDE INTEGRATIVE CANCER CARE

IN THIS ISSUE: Thune-Boyle et al. concluded that using religious/spiritual coping may help newly diagnosed breast cancer patients adjust to their diagnosis. Liu and colleagues found that probiotics were helpful in reducing postoperative infection in patients undergoing colectomy for colorectal cancer. Zhu and associates reported that a diet high in processed meat was associated with a higher risk of recurrence, metastasis and death in patients with colorectal cancer. Anderson and associates found that personalized, evidence-based guidance in lifestyle choices was beneficial for colorectal cancer survivors. Cooley et al. found that a diagnosis of lung cancer was a “teachable moment” to assess health behaviours and implement evidence-based interventions for the benefit of patient-family member dyads. Ryan et al. found that orally administered curcumin reduced radiation dermatitis and moist desquamation in breast cancer patients. Hoffman and colleagues reported numerous benefits of mindfulness-based stress reduction for breast cancer patients. Fernandez-Lao et al. concluded that exercise performed on land produced a greater decrease in body fat and increase in lean body mass, whereas exercise performed in water was better for improving breast symptoms. Groeneveldt and colleagues reported about a safe and effective exercise program that improved the quality of life of patients with multiple myeloma. In our study of the month, Hou et al. found that electrical acupoint stimulation was effective in speeding blood flow and preventing deep venous thrombosis in elderly patients with gastrointestinal cancer.

BREAST CANCER

Thune-Boyle, ICV, J. Stygall, M. R. S. Keshtgar, et al.

Religious/Spiritual Coping Resources and their Relationship with Adjustment in Patients Newly Diagnosed with Breast Cancer in the UK.

Psychooncology. 2013 March 2013; 223: 646-658.

BACKGROUND: Religious/spiritual resources may serve multiple functions in adjustment to cancer. However, there is very little evidence of the importance of religious/spiritual variables outside the USA. This paper reports the cross-sectional data of a longitudinal study examining the beneficial and harmful effects of religious/spiritual coping resources on adjustment in the first year after a breast cancer diagnosis. **METHOD:** One hundred and fifty-five patients newly diagnosed with breast cancer were assessed after surgery. Several aspects of religiousness/spirituality in relation to anxiety and depression were examined: religiosity/spirituality, strength of faith, belief in God, private and public practices, spiritual involvement, perceived spiritual support and positive and negative religious coping strategies. Non-religious coping, social support and optimism were also assessed. **RESULTS:** ‘Feeling punished and abandoned by God’ significantly explained 5% of the variance in increased levels of anxiety but was partially mediated by denial coping. It was also partially mediated by acceptance coping, lowering levels of anxiety. Feeling punished and abandoned by God was a significant independent predictor of depressed mood, explaining 4% of the variance. **CONCLUSION:** Using religious/spiritual resources in the coping process during the early stages of breast cancer may play an important role in the adjustment process in patients with breast cancer. Patients may benefit from having their spiritual needs addressed as experiencing some form of religious/spiritual struggle may serve as a barrier to illness adjustment. Implications for research and clinical practices are discussed.

INSPIREHEALTH’S INTERPRETATION: Utilizing religious/spiritual resources may help newly diagnosed breast cancer patients come to terms with their diagnosis.

COLORECTAL CANCER

Liu, ZH, M. J. Huang, X. W. Zhang, et al.

The Effects of Perioperative Probiotic Treatment on Serum Zonulin Concentration and Subsequent Postoperative Infectious Complications After Colorectal Cancer Surgery: A Double-Center and Double-Blind Randomized Clinical Trial.

Am J Clin Nutr. 2013 Jan; 97(1): 117-126.

BACKGROUND: Zonulin is a newly discovered protein that has an important role in the regulation of intestinal permeability. Our previous study showed that probiotics can decrease the rate of infectious complications in patients undergoing colectomy for colorectal cancer. **OBJECTIVE:** The objective was to determine the effects of the perioperative administration of probiotics on serum zonulin concentrations and the subsequent effect on postoperative infectious complications in patients undergoing colorectal surgery. **DESIGN:** A total of 150 patients with colorectal carcinoma were randomly assigned to the control group (n = 75), which received placebo, or the probiotics group (n = 75). Both the probiotics and placebo were given orally for 6 d preoperatively and 10 d postoperatively. Outcomes were measured by assessing bacterial translocation, postoperative intestinal permeability, serum zonulin concentrations, duration of postoperative pyrexia, and cumulative duration of antibiotic therapy. The postoperative infection rate, the positive rate of blood microbial DNA, and the incidence of postoperative infectious complications-including septicemia, central line infection, pneumonia, urinary tract infection, and diarrhea-were also assessed. **RESULTS:** The infection rate was lower in the probiotics group than in the control group (P < 0.05). Probiotics decreased the serum zonulin concentration (P < 0.001), duration of postoperative pyrexia, duration of antibiotic therapy, and rate of postoperative infectious complications (all P < 0.05). The p38 mitogen-activated protein kinase signaling pathway was inhibited by probiotics. **CONCLUSIONS:** Perioperative probiotic treatment can reduce the rate of postoperative septicemia and is associated with reduced serum zonulin concentrations in patients undergoing colectomy. We propose a clinical regulatory model that might explain this association. This trial was registered at <http://www.chictr.org/en/> as ChiCTR-TRC-00000423.

INSPIREHEALTH'S INTERPRETATION: Probiotics can help reduce post-operative infection in colorectal cancer surgery. Probiotics are cultures of live microorganisms which can be found in such foods as sauerkraut and kefir, or can be taken as supplements.

Zhu, Y, H. Wu, P. P. Wang, et al.

Dietary Patterns and Colorectal Cancer Recurrence and Survival: A Cohort Study.

BMJ Open. 2013 Feb 7; 32: e002270.

OBJECTIVE: To examine the association between dietary patterns and colorectal cancer (CRC) survival. **DESIGN:** Cohort study. **SETTING:** A familial CRC registry in Newfoundland. **PARTICIPANTS:** 529 newly diagnosed CRC patients from Newfoundland. They were recruited from 1999 to 2003 and followed up until April 2010. **OUTCOME MEASURE:** Participants reported their dietary intake using a food frequency questionnaire. Dietary patterns were identified with factor analysis. Multivariable Cox proportional hazards models were employed to estimate HR and 95% CI for association of dietary patterns with CRC recurrence and death from all causes, after controlling for covariates. **RESULTS:** Disease-free survival (DFS) among CRC patients was significantly worsened among patients with a high processed meat dietary pattern (the highest vs the lowest quartile HR 1.82, 95% CI 1.07 to 3.09). No associations were observed with the prudent vegetable or the high-sugar patterns and DFS. The association between the processed meat pattern and DFS was restricted to patients diagnosed with colon cancer (the highest vs the lowest quartile: HR 2.29, 95% CI 1.19 to 4.40) whereas the relationship between overall survival (OS) and this pattern was observed among patients with colon cancer only (the highest vs the lowest quartile: HR 2.13, 95% CI 1.03 to 4.43). Potential effect modification was noted for sex (p value for interaction 0.04, HR 3.85 for women and 1.22 for men). **CONCLUSIONS:** The processed meat dietary pattern prior to diagnosis is associated with higher risk of tumour recurrence, metastasis and death among patients with CRC.

INSPIREHEALTH'S INTERPRETATION: Processed meat consumption can increase the risk of tumour recurrence, tumour spread to other organs, and death in colorectal cancer patients.

Anderson, AS, R. Steele and J. Coyle.

Lifestyle Issues for Colorectal Cancer Survivors - Perceived Needs, Beliefs and Opportunities.

Support Care Cancer. 2013 January 2013; 21(1): 35-42.

PURPOSE: As survival rates for patients treated with colorectal cancer (CRC) increase, it is important to consider the short- and long-term self-management needs. The current work aimed to explore perceived patient needs for advice on diet, activity and beliefs about the role of lifestyle for reducing disease recurrence. **METHODS:** Forty colorectal cancer survivors, aged between 27 and 84, participated in six focus groups in community locations in the UK. **RESULTS:** The findings suggest that CRC survivors would welcome guidance on diet in the immediate posttreatment period to alleviate symptoms and fears about food choices. Many participants actively sought lifestyle advice but experienced confusion, mixed messages, culturally inappropriate guidance and uncertainty about evidence of benefit. There was scepticism over the role of diet and physical

activity as causes of cancer, in part because people believed their lifestyles had been healthy and could not see how reinstating healthy behaviours would reduce future disease risk. The sense of changing lifestyle to 'stack the odds in their favour' (against recurrence) appeared a more meaningful concept than prevention per se. Those people who had made or maintained dietary changes highlighted the importance of these to contributing to wellbeing and a sense of control in their life. **CONCLUSIONS:** A dogmatic approach to lifestyle change may lead to perceptions of victim blaming and stigmatisation. Personalised, evidence informed, guidance on lifestyle choices does appear to be a much needed part of care planning and should be built in to survivorship programmes.

INSPIREHEALTH'S INTERPRETATION: Colorectal cancer survivors actively seek guidance on diet following treatment. Evidence-based guidance on lifestyle choices can help cancer survivors make beneficial lifestyle choices, manage their disease and symptoms, and dispel their fears about food choices.

LUNG CANCER

Cooley, ME, K. T. Finn, Q. Wang, et al.

Health Behaviors, Readiness to Change, and Interest in Health Promotion Programs among Smokers with Lung Cancer and their Family Members: A Pilot Study.

Cancer Nurs. 2013 March-April 2013; 362: 145-154.

BACKGROUND: The diagnosis of lung cancer presents an opportunity to motivate individuals to adopt health-promoting behavior. Little attention has been given to using this opportunity to also motivate relatives to change their health behaviors.

OBJECTIVES: The objectives of this study were to describe health behaviors and readiness to change lifestyle, identify interest in health promotion programs, and examine concordance of health behaviors among smokers with lung cancer and their family members. **METHODS:** Cross-sectional data were collected once from 37 lung cancer patient-family member dyads. Standardized questionnaires were used to collect data. Descriptive statistics and percent agreement were used for analyses.

RESULTS: Lung cancer patients and their family members had high rates of continued smoking (43% vs 30%), low intake of fruits and vegetables (92% vs 95%), and high rates of physical inactivity (84% vs 84%). Patients and family members indicated readiness to change behaviors within the next 6 months ranging from 63% for physical activity, 73% for diet, and 88% to quit smoking for patients and 81% for physical activity, 58% for diet, and 91% to quit smoking for family members. Interest in participating in a multiple behavioral risk reduction program was high for patients and family members. **CONCLUSIONS:** The majority of patients and their family members have multiple behavioral risk factors placing them at risk for poor health outcomes. **IMPLICATIONS FOR PRACTICE:** Oncology nurses are in a unique position to provide leadership in assessing health behaviors and implementing evidence-based interventions to enhance outcomes for patient-family member dyads with lung cancer.

INSPIREHEALTH'S INTERPRETATION: Lung cancer patients share multiple health-related risk factors with family members, and can benefit from family-centric health promotion programs that support quitting smoking, exercising more frequently, and eating more fruits and vegetables.

CURCUMIN

Ryan, JL, C. E. Heckler, M. N. Ling, et al.

Curcumin for Radiation Dermatitis: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial of 30 Breast Cancer Patients.

Journal of Clinical Oncology. 2012. 20 May 2012; 30 (15 SUPPL. 1

BACKGROUND: Radiation dermatitis occurs in approximately 95% of patients receiving radiation therapy for cancer and often leads to pain and treatment delays. There is no standard treatment with demonstrated effectiveness for the prevention of radiation dermatitis. We conducted a randomized, double-blind, placebo-control clinical trial to assess the efficacy of curcumin, a potent antioxidant and anti-inflammatory component of turmeric, to reduce radiation dermatitis in 30 breast cancer patients.

METHODS: Eligible patients included adult females with non-inflammatory breast cancer or carcinoma in situ prescribed radiation therapy without concurrent chemotherapy. After randomization, patients took four 500 mg capsules of curcumin or placebo three times daily throughout their course of radiation therapy (total daily dose = 6.0 g). Weekly assessments included Radiation Dermatitis Severity (RDS) Score, presence/absence of moist desquamation, erythema measure, and McGill Pain and Symptom Inventory (SI) questionnaires. **RESULTS:** The 30 evaluable patients were white (90%; mean age = 58.1 years) with ER+PR+ breast cancer (76.7%) who did not have total mastectomy (90%) or chemotherapy prior to start of radiation therapy (56.7%). No significant differences were observed between arms for demographics, compliance, erythema, pain, symptoms, or radiation skin dose. Standard pooled variances t-test showed that curcumin reduced RDS at end of treatment compared to placebo (mean RDS = 2.6 vs 3.4; p=0.008). Fisher's exact test showed that curcumin significantly reduced the presence of moist desquamation at the end of radiation therapy (28.6% vs. 87.5 %; p=0.002). Repeated measures analysis confirmed divergence of RDS between curcumin and placebo arms at Week 5. **CONCLUSIONS:** Oral curcumin, 6.0 g daily during radiation therapy, reduced radiation dermatitis severity and moist desquamation in breast cancer patients. A multisite CCOP

trial (N=700) is underway to confirm the effectiveness of curcumin to reduce radiation dermatitis severity during various radiation therapy regimens for breast cancer.

INSPIREHEALTH'S INTERPRETATION: A daily oral dose of 6 g of curcumin administered during radiation therapy can reduce the side effects including skin inflammation and peeling in breast cancer patients.

MINDFULNESS-BASED STRESS REDUCTION

Hoffman, CJ, S. J. Ersser and J. B. Hopkinson.

Mindfulness-Based Stress Reduction in Breast Cancer: A Qualitative Analysis.

Complement Ther Clin Pract. 2012 Nov; 184: 221-226.

BACKGROUND & AIMS: There have been few qualitative investigations evaluating Mindfulness-Based Stress Reduction (MBSR) in breast cancer populations. The nested qualitative analysis reported here explores the acceptability and the perceived effect of MBSR. **METHODS:** As part of a larger randomised controlled evaluative trial, 92 participants with stages 0 to III breast cancer completed a short proforma following week 8 of a MBSR programme conducted at The Haven, an integrated cancer support centre in London, UK in 2005-2006. **RESULTS:** Following thematic analysis, the most positive experiences from participants (n = 92) were reported to be; 1) being calmer, centred, at peace, connected and more confident; 2) the value of mindfulness practice; 3) being more aware; 4) coping with stress, anxiety and panic; 5) accepting things as they are, being less judgemental of myself and others; 6) improved communication and personal relationships and 7) making time and creating space for myself. All participants asked (n = 39) said that following MBSR training they had become more mindful. **CONCLUSION:** These understandings will be able to help shape the future teaching of MBSR in breast cancer.

INSPIREHEALTH'S INTERPRETATION: Mindfulness-based stress reduction can help breast cancer patients with many different domains of their lives such as feeling centred, coping with stress, accepting things as they are and improving personal relationships.

EXERCISE

Fernandez-Lao, C, I. Cantarero-Villanueva, A. Ariza-Garcia, et al.

Water Versus Land-Based Multimodal Exercise Program Effects on Body Composition in Breast Cancer Survivors: A Controlled Clinical Trial.

Support Care Cancer. 2013 February 2013; 212: 521-530.

GOALS OF WORK: Our aim was to compare the effects of land versus water multimodal exercise programs on body composition and breast cancer-specific quality of life in breast cancer survivors. **PATIENTS AND METHODS:** Ninety-eight breast cancer survivors were assigned to three groups: control, land exercise, and water exercise. Both exercise groups participated in an 8-week multimodal program. Adiposity was measured by anthropometry (body mass index, waist circumference) and bioelectrical impedance (body fat and muscle lean body mass). Incidence of clinically significant secondary lymphedema was also assessed. Finally, specific quality of life was assessed using the European Organization for Research and Treatment of Cancer Quality of Life BR-23. **MAIN RESULTS:** Using ANCOVA, significant group × time interactions for body fat percentage (F = 3.376; P = 0.011) and lean body mass (F = 3.566; P = 0.008) were found. Breast cancer survivors in the land exercise group exhibited a greater decrease in percentage of body fat than those in the water exercise (P < 0.001) and control (P = 0.002) groups. The ANCOVA revealed a significant group × time interaction for waist circumference (F = 4.553; P = 0.002): breast cancer survivors in the control group showed a greater waist circumference when compared to water (P = 0.003) and land (P < 0.001) exercise groups. A significant group × time interaction was also found for breast symptoms (F = 9.048; P < 0.001): participants in the water exercise group experienced a greater decrease of breast symptoms than those in the land exercise (P < 0.01) and control (P < 0.05) groups. **CONCLUSION:** Land exercise produced a greater decrease in body fat and an increase in lean body mass, whereas water exercise was better for improving breast symptoms.

INSPIREHEALTH'S INTERPRETATION: Exercise that is land-based can help with decreasing body fat and increasing lean muscle mass, and exercise that is water-based can help with breast cancer symptoms. Incorporating both styles in one's routine can provide overall health support.

Groeneveldt, L, G. Mein, R. Garrod, et al.

A Mixed Exercise Training Programme is Feasible and Safe and may Improve Quality of Life and Muscle Strength in Multiple Myeloma Survivors.

BMC Cancer. 2013 24 Jan 2013; 1331.

BACKGROUND: Exercise programmes are beneficial for cancer patients however evidence is limited in patients with multiple myeloma (MM), a cancer that is characterised by osteolytic bone disease, giving rise to high levels of bone morbidity including fractures and bone pain. **METHODS:** We conducted a single arm phase 2 study of an exercise programme (EP) as rehabilitation for treated MM patients, to evaluate feasibility, effects on QOL and physiological parameters. Patients were given individualised

programmes, comprising stretching, aerobic and resistance exercises, carried out under supervision for 3 months then at home for a further 3 months. **RESULTS:** Study uptake was high, 60 of 75 (80%) patients approached consented to the study. Screen failures (11, due to fracture risk and disease relapse) and patient withdrawals (12) resulted in a final 37 patients enrolling on the programme. These 37 patients demonstrated high attendance rates in the supervised classes (87%), and high levels of adherence in home exercising (73%). Patients reported better QOL following the EP, with improvement in FACT-G and Fatigue scores over time from baseline ($p < 0.01$ for both, one-way repeated measures ANOVA) to 6 months. Upper and lower limb strength also improved on the EP, from baseline to 6 months ($p < 0.01$ for both). There were no adverse reactions. **CONCLUSIONS:** An EP in MM patients is feasible and safe, with high attendance and adherence. Benefits in QOL, fatigue and muscle strength await confirmation in randomized studies, prompting urgent evaluation of the benefits of EP in the rehabilitation of MM patients.

INSPIREHEALTH'S INTERPRETATION: Exercise as part of a supervised program is safe and beneficial for patients with multiple myeloma, who are prone to bone injuries. Benefits include improvement in limb strength and overall quality of life.

STUDY OF THE MONTH

Hou, LL, L. W. Yao, Q. M. Niu, et al.

Preventive Effect of Electrical Acupoint Stimulation on Lower-Limb Thrombosis: A Prospective Study of Elderly Patients After Malignant Gastrointestinal Tumor Surgery.

Cancer Nurs. 2013 March-April 2013; 362: 139-144.

BACKGROUND: Lower deep venous thrombosis (DVT) is one of the major complications of patients with tumors or patients undergoing major surgery. Electrical acupoint stimulation, an established technique of traditional Chinese medicine (TCM), can be well combined with Western medicine to reduce the incidence of postoperative DVT, especially in elderly patients.

OBJECTIVE: The objectives of this study were to assess the efficiency of electrical acupoint stimulation in the prevention of postsurgery DVT in elderly patients with gastrointestinal malignant tumors and to validate an effective and safe nursing approach that integrates TCM and Western medicine. **METHODS:** A total of 120 patients (none aged < 60 years) who underwent malignant gastrointestinal tumor surgery between July 2005 and May 2007 were randomly divided into 3 groups: routine nursing group (group C1), graduated compression stockings group (group C2), and electrical acupoint stimulation group (group T). Hemorheological parameters (blood viscosity, etc) were measured and compared before and after surgery. **RESULTS:** Compared with groups C1 and C2, group T showed a significant difference in blood viscosity and blood flow velocity ($P < .05$). However, there were no statistical differences among groups C1, C2, and T in other hemorheological parameters.

CONCLUSIONS: By speeding up the blood flow in patients' lower limbs, electrical acupoint stimulation showed a great potential to prevent symptomless DVT in elderly patients after malignant gastrointestinal tumor surgery. **IMPLICATIONS FOR PRACTICE:** Western medical care combined with TCM can reduce the occurrence of lower DVT in elderly patients suffering from gastrointestinal cancer. This approach may help nurses to plan effective care for elderly patients.

INSPIREHEALTH'S INTERPRETATION: The traditional Chinese medicine technique, electrical acupoint stimulation, can help to prevent lower deep vein blood clots by speeding blood flow to the lower limbs in elderly gastrointestinal cancer patients following surgery.

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