

2. LBP

Trajectories

Pain. 2017 Nov 3. doi: 10.1097/j.pain.0000000000001097.

Trajectories and predictors of the long-term course of low back pain: cohort study with 5-year follow-up.

Chen Y¹, Campbell P, Strauss VY, Foster NE, Jordan KP, Dunn KM.

Low back pain (LBP) is a major health challenge globally. Research has identified common trajectories of pain over time.

We aimed to investigate whether trajectories described in 1 primary care cohort can be confirmed in another, and to determine the prognostic value of factors collected 5 years prior to the identification of the trajectory. The study was conducted on 281 patients who had consulted primary care for LBP, at that point completed a baseline questionnaire, and then returned a questionnaire at 5-year follow-up plus at least 3 (of 6) subsequent monthly questionnaires.

Baseline factors were measured using validated tools. Pain intensity scores from the 5-year follow-up and monthly questionnaires were used to assign participants into 4 previously derived pain trajectories (no or occasional mild, persistent mild, fluctuating, and persistent severe), using latent class analysis. Posterior probabilities of belonging to each cluster were estimated for each participant. The posterior probabilities for the assigned clusters were very high (>0.90) for each cluster except for the smallest "fluctuating" cluster (0.74). Lower social class and higher pain intensity were significantly associated with a more severe trajectory 5 years later, as were patients' perceptions of the greater consequences and longer duration of pain, and greater passive behavioural coping. Low back pain trajectories identified previously appear generalizable.

These allow better understanding of the long-term course of LBP, and effective management tailored to individual trajectories needs to be identified. This is an open access article distributed under the Creative Commons Attribution License 4.0 (CCBY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

5. SURGERY

Stenosis

Spine (Phila Pa 1976). 2018 Feb 15;43(4):E234-E241. doi: 10.1097/BRS.0000000000002289.

Clinical Outcomes of Cervical Spinal Surgery for Cervical Myelopathic Patients With Coexisting Lumbar Spinal Canal Stenosis (Tandem Spinal Stenosis): A Retrospective Analysis of 297 Cases.

Yamada T¹, Yoshii T, Yamamoto N, Hirai T, Inose H, Kato T, Kawabata S, Okawa A.

STUDY DESIGN:

A retrospective observational study.

OBJECTIVE:

We evaluated the prevalence and clinical characteristics of tandem spinal stenosis (TSS) in patients with cervical myelopathy including ossification of the posterior longitudinal ligament of the cervical spine (C-OPLL).

SUMMARY OF BACKGROUND DATA:

Concurrent cervical and lumbar spinal canal stenosis is generally reported as TSS. Most previous studies have used magnetic resonance imaging to evaluate spinal stenosis in the cervical and lumbar spine.

METHODS:

The authors performed a retrospective analysis of the outcomes of 297 myelography and cervical surgeries performed in myelopathic patients. We compared the non-TSS group (n=125) with the TSS group (n=172) in terms of multiple clinical parameters. In each group, we compared the cervical non-OPLL cases with the cervical OPLL cases. Moreover, we investigated the ratio and clinical outcomes of additional lumbar surgeries performed for TSS patients.

RESULTS:

One hundred seventy-two cases (57.9%) were considered TSS. Forty-one patients (13.8%) underwent a lumbar operation during the follow-up period. The TSS group included a greater number of OPLL patients, elderly patients, diabetes mellitus, hypertension, and non-smokers than the non-TSS group. The postoperative C-JOA score and the C-JOA recovery rate in the TSS group were significantly lower than the non-TSS group. In the TSS group, the non-C-OPLL patients were significantly older than the C-OPLL patients. The C-OPLL patients had higher postoperative C-JOA scores than the non-C-OPLL patients in both the TSS and non-TSS groups. The additional lumbar surgery effectively improved both the C-JOA and L-JOA scores in TSS patients.

CONCLUSION:

The prognosis for TSS patients with myelopathy was worse than that for patients with isolated cervical lesions. Younger C-OPLL patients, even those with TSS, showed higher recovery rates than non-C-OPLL patients. Aging and coexistent lumbar lesions may influence the recovery process following surgery for cervical myelopathy.

LEVEL OF EVIDENCE: 4. PMID: 28614282 DOI: 10.1097/BRS.0000000000002289

Single level fusion best

Resting Functional Connectivity of the Periaqueductal Gray is Associated with Normal Inhibition and Pathological Facilitation in Conditioned Pain Modulation

Daniel E. Harper Eric Ichesco

DOI: <http://dx.doi.org/10.1016/j.jpain.2018.01.001>

- Conditioned pain modulation (CPM) facilitation observed in fibromyalgia patients
- Smaller periaqueductal gray (PAG) volume observed in fibromyalgia patients
- PAG resting connectivity with cortical areas associated with pain inhibition
- PAG-to-brainstem connectivity helps explain CPM facilitation in fibromyalgia
- Consistent with pathological pain-facilitative brainstem mechanisms found in animals

Abstract

Conditioned pain modulation (CPM), a psychophysical paradigm that is commonly used to infer the integrity of endogenous pain-altering systems by observation of the effect of one noxious stimulus on another, has previously identified deficient endogenous analgesia in fibromyalgia (FM) and other chronic pain conditions. The mechanisms underlying this deficiency, be they insufficient inhibition and/or active facilitation, are largely unknown. The present cross sectional study used a combination of behavioral CPM testing, voxel based morphometry (VBM), and resting state functional connectivity to identify neural correlates of CPM in healthy controls (HC; n=14) and FM patients (n=15), and to probe for differences that could explain the pain-facilitative CPM that was observed in our patient sample. VBM identified a cluster encompassing the periaqueductal gray (PAG) that contained significantly less gray matter volume in FM patients. Higher resting connectivity between this cluster and cortical pain processing regions was associated with more efficient inhibitory CPM in both groups, whereas PAG connectivity with the dorsal pons was associated with greater CPM inhibition only in HC. Greater PAG connectivity to the caudal pons/rostral medulla, which was pain-inhibitory in HC, was associated with pain facilitation in FM.

Perspective

These findings indicate that variation in the strength of the PAG's resting functional connectivity can explain some of the normal variability in CPM. In addition, pain-facilitative CPM observed in FM patients likely involves both attenuation of pain inhibitory and amplification of pain facilitative processes in the central nervous system.

Bracing after fusion did not help

Early impact of postoperative bracing on pain and quality of life after posterior instrumented fusion for lumbar degenerative conditions: A randomized trial

Spine — | January 25, 2018

Soliman HAG, et al.

In a population of patients who underwent posterior spinal instrumented fusion (PSIF) for lumbar degenerative conditions, researchers assessed the impact of postoperative bracing on pain and quality of life (QoL) 6 weeks and 3 months postoperatively. They found that postoperative bracing did not result in better improvement in QoL or pain relief up to 3 months after PSIF.

7. PELVIC ORGANS/WOMAN'S HEALTH

Vaginal birth after C section

Archives of Gynecology and Obstetrics

January 2018, Volume 297, Issue 1, pp 85–91| Cite as

Prediction of vaginal birth after one cesarean delivery for non-progressive labor

- Yossi Mizrachi Elad Barber Michal Kovo Jacob Bar Samuel Lurie

Purpose

A model exists that predicts the probability of vaginal birth after cesarean (VBAC). That model is not stratified by indication at first cesarean. The aim of the study was to identify factors that may predict successful VBAC in patients operated for arrest of dilatation or descent at their first cesarean.

Methods

Retrospective analysis of all women with trials of labor after one cesarean (TOLAC) for non-progressive labor between November 2008 and October 2015 was performed ($n = 231$). A multivariate logistic regression analysis was carried out to generate a prediction model for VBAC at hospital admission for planned TOLAC.

Results

During the study period, we had 231 parturient women who chose to undergo TOLAC following one previous cesarean delivery for non-progressive labor. Successful VBAC occurred in 155 (67.0%) parturient women. A model consisting of previous successful VBAC, lower head station on decision at previous cesarean delivery, lower newborn weight at previous cesarean delivery and larger cervical effacement on admission at delivery planned for TOLAC correctly classified 75.3% of cases ($R^2 = 0.324$, AUC 0.80, 95% CI 0.70–0.89, $p < 0.001$).

Conclusion

A predictive model, which incorporates four variables available at hospital admission for the planned TOLAC, has been developed that allows the determination of likelihood of successful VBAC following one cesarean delivery for non-progressive labor.

C-section and small bowel obstruction

Obstet Gynecol. 2018 Feb;131(2):354-359. doi: 10.1097/AOG.0000000000002440.

Effect of Cesarean Delivery on Long-term Risk of Small Bowel Obstruction.

Abenhaim HA¹, Tulandi T, Wilchesky M, Platt R, Spence AR, Czuzoj-Shulman N, Suissa S.

OBJECTIVE:

To evaluate the association of cesarean deliveries on the incidence of small bowel obstruction.

METHODS:

We formed a population-based cohort of all women with a first live birth between 1998 and 2007 using the U.K. Clinical Practice Research Datalink. Women were followed until 2015, the occurrence of a small bowel obstruction, or loss to follow-up. Cesarean delivery was identified from the Hospital Episode Statistics and small bowel obstruction events were identified using the Classification of Interventions and Procedures and International Classification of Diseases, 10th Revision codes. Cox proportional hazard models, with cesarean delivery defined as a time-dependent exposure, estimated the adjusted hazard ratios and 95% CIs of small bowel obstruction associated with cesarean delivery.

RESULTS:

The cohort included 81,480 women with a median follow-up of 8.0 years (range 6 months to 16.6 years), during which 575 new small bowel obstructions occurred (incidence 9.1/10,000 person-years). Risk of small bowel obstruction was higher among women with a cesarean delivery compared with women without (16.3 vs 6.4 patients/10,000 person-years, odds ratio [OR] 2.54, 95% CI 2.15-3.00). Increasing number of cesarean deliveries was associated with an increasing risk of small bowel obstruction (OR 1.61, 95% CI 1.46-1.78, per additional cesarean delivery). Repeated small bowel obstructions were more common among women with a cesarean delivery and the association remained when restricting to small bowel obstruction requiring surgical management.

CONCLUSION:

Although rare, small bowel obstructions are increased among women who have undergone a cesarean delivery. With increasing rates of cesarean deliveries worldwide, small bowel obstructions and related morbidities may become a more prevalent women's health concern.

PMID: 29324607 OI: 10.1097/AOG.0000000000002440

Smoking in pregnancy

Menopause. 2010 May–Jun; 17(3): 571–576. doi: 10.1097/gme.0b013e3181c7deba
PMCID: PMC2866786

The impact of smoking on antimüllerian hormone levels in women aged 38 to 50 years

Beth J. Plante, MD,^{1,2} Glinda S. Cooper, PhD,^{3,4} Donna D. Baird, PhD,³ and Anne Z. Steiner, MD, MPH²

Cigarette smoke contains compounds that are suspected to cause reproductive damage and possibly affect hormone activity; therefore, we examined hormone metabolite patterns in relation to validated smoking status. We previously conducted a prospective study of women of reproductive age ($n = 403$) recruited from a large health maintenance organization, who collected urine daily during an average of three to four menstrual cycles. Data on covariates and daily smoking habits were obtained from a baseline interview and daily diary, and smoking status was validated by cotinine assay. Urinary metabolite levels of estrogen and progesterone were measured daily throughout the cycles. For the present study, we measured urinary levels of the pituitary hormone follicle-stimulating hormone (FSH) in a subset of about 300 menstrual cycles, selected by smoking status, with the time of transition between two cycles being of primary interest. Compared with nonsmokers, moderate to heavy smokers (≥ 10 cigarettes/day) had baseline levels (e.g., early follicular phase) of both steroid metabolites that were 25–35% higher, and heavy smokers (≥ 20 cigarettes/day) had lower luteal-phase progesterone metabolite levels. The mean daily urinary FSH levels around the cycle transition were increased at least 30–35% with moderate smoking, even after adjustment.

These patterns suggest that chemicals in tobacco smoke alter endocrine function, perhaps at the level of the ovary, which in turn effects release of the pituitary hormones. This endocrine disruption likely contributes to the reported associations of smoking with adverse reproductive outcomes, including menstrual dysfunction, infertility, and earlier menopause.

8. VISCERA

COPD and chronic pain

Reporting of pain by people with chronic obstructive pulmonary disease (COPD): comparative results from the HUNT3 population-based survey

- Randi Andenæs Astrid Momyr and Idunn Brekke

BMC Public Health BMC series – open, inclusive and trusted 2018 **18**:181

<https://doi.org/10.1186/s12889-018-5094-5>

Background

Chronic obstructive pulmonary disease (COPD) is often associated with chronic pain, but pain in COPD remains poorly understood, particularly in comparison to pain in other groups. We compared the pain reported by people with COPD with that reported by arthritis, heart disease, diabetes, and those not reporting any disease, while adjusting for the effects of selected sociodemographic and lifestyle factors, comorbidities, anxiety, and depression.

Methods

Using cross-sectional data from a population-based health survey in Norway (HUNT3; $n = 50,807$), we included participants with COPD ($n = 1199$), participants without COPD, but with arthritis ($n = 8582$), heart disease ($n = 4109$), or diabetes ($n = 1254$), and participants without any disease ($n = 18,811$). Logistic and linear regression analyses were performed to estimate the probability of reporting chronic pain and the level of pain intensity in the different groups adjusting for other relevant factors.

Results

Approximately half (51.8%) of people with COPD reported chronic pain, which was a significantly higher rate than in the diabetes and non-disease groups, and similar to the heart disease group. People with arthritis had a chronic pain rate of 75.4%, which was higher than all other groups, including COPD. Analyses of pain intensity yielded similar findings, with the COPD group having higher pain intensity than the diabetes and non-disease groups, similar pain intensity as the heart disease group, and less pain intensity than the arthritis group. The likelihood of chronic pain and the intensity of pain were generally higher among women, people employed in occupations with low educational requirements, smokers, and those with comorbidity. Chronic pain rates and pain intensity increased with age and higher anxiety and depression scores, and were inversely related to physical activity.

Conclusions

People with COPD are at increased risk for chronic pain and higher pain intensity, second only to those with arthritis among the disease groups included in this study. The findings indicate a close relationship between pain and anxiety and depression. The relationships between pain and socioeconomic and lifestyle factors (e.g., smoking and exercise) suggest the need for efforts at the societal level to reduce inequality in health.

Visceral parasites and inflammation

Original Article

Intestinal parasites: associations with intestinal and systemic inflammation

Authors

- Gerardo A Zavala, Olga P García, Mariela Camacho, Dolores Ronquillo, Jorge L Rosado
DOI: 10.1111/pim.12518 View/save citation

Abstract

Aims

Evaluate associations between intestinal parasitic infection with intestinal and systemic inflammatory markers in school-aged children with high rates of obesity.

Methods and results

Plasma concentrations of CRP, leptin, TNF- α , IL-6 and IL-10 were measured as systemic inflammation markers and count of stool leukocytes as marker of intestinal inflammation in 291 children (6-10y). Intestinal parasitic infection was measured by stool examination. Logistic regression analyses were performed to determine the odds of having high inflammatory markers for each parasite or group of parasites as compared to parasite-free children while adjusting for sex, age, mother educational level and % of body fat. The prevalence of soil transmitted helminths and intestinal protozoa infections was 12% and 36%, respectively. Parasitic infection was not associated with CRP, IL-6, IL-10 or TNF- α . Children infected with *Ascaris lumbricoides* (aOR: 5.91, 95%CI: 1.97-17.70) and *Entamoeba coli* (aOR: 8.46, 95%CI: 2.85-25.14) were more likely to have higher stool leucocytes than parasite-free children. Children with multiple-infections (aOR: 10.60, 95%CI: 2.85-25.14) were more likely to have higher leptin concentrations than parasite-free children.

Conclusion

Intestinal parasitic infection was not associated with systemic inflammation, but was associated with intestinal inflammation. Having multiple-infections were associated with higher leptin concentrations.

Vit D and colitis

Cytokine Volume 103, March 2018, Pages 38-45

Higher serum vitamin D levels are associated with protective serum cytokine profiles in patients with ulcerative colitis

<https://doi.org/10.1016/j.cyto.2017.12.023> Get rights and content

Highlights

- Positive correlation between serum vitamin D (25(OH)D) levels and anti-inflammatory serum cytokine profiles.
- Serum cytokine profile IL-4 + IL-10/IL-17A + TNF- α is associated with presence of histologic mucosal healing among ulcerative colitis patients in clinical remission.
- Baseline serum cytokine profile IL-4 + IL-10/IL-6 + TNF- α during periods of clinical remission predicts longitudinal risk of relapse in ulcerative colitis patients.

Abstract

Background & Aims Vitamin D has immune modulating effects on cytokines. Serum vitamin D levels are associated with the risk of relapse in patients with ulcerative colitis (UC), through unknown mechanisms. We tested the hypothesis that this beneficial role of vitamin D on UC is mediated through anti-inflammatory serum cytokine profiles.

Methods Serum samples from a prospective cohort of seventy UC patients in clinical remission were collected and baseline histological and endoscopic scores were recorded at enrollment. Clinical relapse events were recorded over the 12-month follow-up period. Serum vitamin D and cytokines levels (IL-6, IL-8, IL-17A, TNF- α , IFN- γ , IL-4, IL-10) were quantified using ELISA. Linear regression was used to determine correlation between vitamin D and cytokine profiles. Logistic regression models were used to determine the association between serum cytokine profiles and baseline histologic mucosal healing and clinical relapse.

Results Higher serum vitamin D levels positively correlated with higher ratios of IL-4 + IL-10/IL-17A + TNF- α ($r = 0.37$, $P < .01$), and IL-4 + IL-10/IL-6 + TNF- α ($r = 0.32$, $P < .01$). In multivariate analysis, IL-4 + IL-10/IL-17A + TNF- α ratios at baseline were associated with the presence of histologic mucosal healing (O.R. 1.29, 95% CI 1.02–1.62, $P = .03$). A higher ratio of serum IL-4 + IL-10 to IL-6 + TNF- α was associated with a reduced risk of clinical relapse (O.R. 0.72, 95% CI 0.58–0.89, $P = .003$), and longer time to relapse ($p = .03$), over the 12-month follow-up period. This ratio during remission had an AUC of 0.7 in predicting later clinical relapse.

Conclusions Vitamin D is associated with anti-inflammatory serum cytokine profiles. Anti-inflammatory cytokine patterns may mediate the protective effects of higher serum vitamin D levels in patients with ulcerative colitis.

Exercise helps IBS
IBS and aerobic exercise

Cytokine. 2017 Dec 20;102:18-25. doi: 10.1016/j.cyto.2017.12.016. [Epub ahead of print]

Low-to-moderate intensity aerobic exercise training modulates irritable bowel syndrome through antioxidative and inflammatory mechanisms in women: Results of a randomized controlled trial.

Hajizadeh Maleki B¹, Tartibian B², Mooren FC³, FitzGerald LZ⁴, Krüger K⁵, Chehrazi M⁶, Malandish A⁷.

Our aim was to explore the putative beneficial effects of low-to-moderate intensity exercise training program in patients with irritable bowel syndrome (IBS). This study evaluated the changes in blood oxidative stress status, inflammatory biomarkers and IBS severity symptoms following 24 weeks of moderate aerobic exercise in sedentary IBS patients. A total of 109 female volunteers (aged 18-41 yrs) who fulfilled Rome III criteria for the diagnosis of IBS were screened and 60 were randomized to exercise (EX, n = 30) and non-exercise (NON-EX, n = 30) groups. Exercise intervention favorably attenuated inflammation as indicated by plasma cytokines (IL-1 β , IL-6, IL-8, IL-10 and TNF- α), adenosine deaminase, oxidative stress (XO, MDA and NO) and enhanced antioxidants (SOD, CAT and GSH-Px) ($P < .05$), and these alterations correlate with promising improvements in IBS symptoms ($P < .05$). Taken together, low-to-moderate intensity exercise training program attenuates symptoms in IBS.

Symptom improvement was associated with a reversal of the ratio of anti- to pro-inflammatory cytokines as well as facilitating blood redox homeostasis, suggesting an immune- and redox modulating function for exercise training.

Vit D helps UC

Cytokine. 2018 Jan 8;103:38-45. doi: 10.1016/j.cyto.2017.12.023.

Higher serum vitamin D levels are associated with protective serum cytokine profiles in patients with ulcerative colitis.

Gubatan J¹, Mitsuhashi S², Longhi MS², Zenlea T², Rosenberg L², Robson S², Moss AC².

BACKGROUND & AIMS:

Vitamin D has immune modulating effects on cytokines. Serum vitamin D levels are associated with the risk of relapse in patients with ulcerative colitis (UC), through unknown mechanisms. We tested the hypothesis that this beneficial role of vitamin D on UC is mediated through anti-inflammatory serum cytokine profiles.

METHODS:

Serum samples from a prospective cohort of seventy UC patients in clinical remission were collected and baseline histological and endoscopic scores were recorded at enrollment. Clinical relapse events were recorded over the 12-month follow-up period. Serum vitamin D and cytokines levels (IL-6, IL-8, IL-17A, TNF- α , IFN- γ , IL-4, IL-10) were quantified using ELISA. Linear regression was used to determine correlation between vitamin D and cytokine profiles. Logistic regression models were used to determine the association between serum cytokine profiles and baseline histologic mucosal healing and clinical relapse.

RESULTS:

Higher serum vitamin D levels positively correlated with higher ratios of IL-4 + IL-10/IL-17A + TNF- α ($r = 0.37$, $P < .01$), and IL-4 + IL-10/IL-6 + TNF- α ($r = 0.32$, $P < .01$). In multivariate analysis, IL-4 + IL-10/IL-17A + TNF- α ratios at baseline were associated with the presence of histologic mucosal healing (O.R. 1.29, 95% CI 1.02-1.62, $P = .03$). A higher ratio of serum IL-4 + IL-10 to IL-6 + TNF- α was associated with a reduced risk of clinical relapse (O.R. 0.72, 95% CI 0.58-0.89, $P = .003$), and longer time to relapse ($p = .03$), over the 12-month follow-up period. This ratio during remission had an AUC of 0.7 in predicting later clinical relapse.

CONCLUSIONS:

Vitamin D is associated with anti-inflammatory serum cytokine profiles. Anti-inflammatory cytokine patterns may mediate the protective effects of higher serum vitamin D levels in patients with ulcerative colitis.

Allergic proctocolitis

Allergic proctocolitis is a risk factor for functional gastrointestinal disorders in children

The Journal of Pediatrics — | January 22, 2018

Di Nardo G, et al.

The clinicians aimed to examine whether allergic proctocolitis (a cause of self-limiting rectal bleeding in infants) could predispose to the development of functional gastrointestinal disorders (FGIDs) later in childhood. For the development of FGIDs in children, allergic proctocolitis was identified as a new risk factor. The data suggested that infection, as well as a transient early-life allergic inflammatory trigger, could induce persistent digestive symptoms, supporting the existence of “postinflammatory” FGIDs.

Chronic pain and CV disease

Pain. 2017 Sep 25. doi: 10.1097/j.pain.0000000000001070.

Chronic pain-related changes in cardiovascular regulation and impact on comorbid hypertension in a general population: the Tromsø study.

Bruehl S¹, Olsen RB, Tronstad C, Sevre K, Burns JW, Schirmer H, Nielsen CS, Stubhaug A, Rosseland LA.

Heart rate variability (HRV) and baroreflex sensitivity (BRS) are indexes reflecting the ability to maintain cardiovascular homeostasis amidst changing conditions.

Evidence primarily from small studies suggests that both HRV and BRS may be reduced in individuals with chronic pain (CP), with potential implications for cardiovascular risk. We compared HRV and BRS between individuals with CP (broadly defined) and pain-free controls in a large unselected population sample. Participants were 1143 individuals reporting clinically meaningful CP and 5640 pain-free controls who completed a 106-second cold pressor test (CPT). Participants self-reported hypertension status. Resting HRV and BRS were derived from continuous beat-to-beat blood pressure recordings obtained before and after the CPT. Hierarchical regressions for the pre-CPT period indicated that beyond effects of age, sex, and body mass index, the CP group displayed significantly lower HRV in both the time domain (SDNN and rMSSD) and frequency domain (high-frequency HRV power), as well as lower BRS. Results were somewhat weaker for the post-CPT period. Mediation analyses indicated that for 6 of 7 HRV and BRS measures tested, there were significant indirect (mediated) effects of CP status on the presence of comorbid hypertension via reduced HRV or BRS.

Results confirm in the largest and broadest sample tested to date that the presence of CP is linked to impaired cardiovascular regulation and for the first time provide support for the hypothesis that links between CP and comorbid hypertension reported in previous population studies may be due in part to CP-related decrements in cardiovascular regulation.

Inflammatory diet and CA

JAMA Oncol. 2018 Jan 18. doi: 10.1001/jamaoncol.2017.4844.

Association of Dietary Inflammatory Potential With Colorectal Cancer Risk in Men and Women.

Tabung FK^{1,2}, Liu L^{1,2,3,4,5}, Wang W^{1,2}, Fung TT^{1,6}, Wu K¹, Smith-Warner SA^{1,2}, Cao Y^{1,7}, Hu FB^{1,2,8}, Ogino S^{2,4,9}, Fuchs CS^{4,8,10}, Giovannucci EL^{1,2,8}.

IMPORTANCE:

Inflammation is important in colorectal cancer development. Diet modulates inflammation and may thus be a crucial modifiable factor in colorectal cancer prevention.

OBJECTIVE: To examine whether proinflammatory diets are associated with increased colorectal cancer risk by using an empirical dietary inflammatory pattern (EDIP) score based on a weighted sum of 18 food groups that characterizes dietary inflammatory potential based on circulating levels of inflammation biomarkers.

DESIGN, SETTINGS, AND PARTICIPANTS: Cohort study of 46 804 men (Health Professionals Follow-up Study: 1986-2012) and 74 246 women (Nurses' Health Study: 1984-2012) followed for 26 years to examine associations between EDIP scores and colorectal cancer risk using Cox regression. We also examined associations in categories of alcohol intake and body weight. Data analysis began January 17, 2017, and was completed August 9, 2017.

EXPOSURES: EDIP scores calculated from food frequency questionnaires administered every 4 years.

MAIN OUTCOMES AND MEASURES: Incident colorectal cancer.

RESULTS: We documented 2699 incident colorectal cancer cases over 2 571 831 person-years of follow-up. Compared with participants in the lowest EDIP quintile (Q) who had a colorectal cancer incidence rate (per 100 000 person-years) of 113 (men) and 80 (women), those in the highest Q had an incidence rate of 151 (men) and 92 (women), leading to an unadjusted rate difference of 38 and 12 more colorectal cancer cases, respectively, among those consuming highly proinflammatory diets. Comparing participants in the highest vs lowest EDIP Qs in multivariable-adjusted analyses, higher EDIP scores were associated with 44% (men: hazard ratio [HR], 1.44; 95% CI, 1.19-1.74; $P < .001$ for trend), 22% (women: HR, 1.22; 95% CI, 1.02-1.45; $P = .007$ for trend), and 32% (men and women: pooled HR, 1.32; 95% CI, 1.12-1.55; $P < .001$ for trend) higher risk of developing colorectal cancer. In both men and women, associations were observed in all anatomic subsites except for the rectum in women. In subgroups ($P \leq .02$ for all interactions), associations differed by alcohol intake level, with stronger associations among men (Q5 vs Q1 HR, 1.62; 95% CI, 1.05-2.49; $P = .002$ for trend) and women (Q5 vs Q1 HR, 1.33; 95% CI, 0.97-1.81; $P = .03$ for trend) not consuming alcohol; and by body weight, with stronger associations among overweight/obese men (Q5 vs Q1 HR, 1.48; 95% CI, 1.12-1.94; $P = .008$ for trend) and lean women (Q5 vs Q1 HR, 1.31; 95% CI, 0.99-1.74; $P = .01$ for trend).

CONCLUSIONS AND RELEVANCE:

Findings suggest that inflammation is a potential mechanism linking dietary patterns and colorectal cancer development. Interventions to reduce the adverse role of proinflammatory diets may be more effective among overweight/obese men and lean women or men and women who do not consume alcohol.

12 B. CERVICAL SURGERIES**Fusions help**

Spine (Phila Pa 1976). 2018 Feb 1;43(3):207-214. doi: 10.1097/BRS.0000000000002273.

Anterior Cervical Discectomy and Fusion Outcomes over 10 Years: A Prospective Study.

Buttermann GR¹.

STUDY DESIGN:

Prospective cohort study with >10-year follow-up.

OBJECTIVE:

To assess the long-term, >10-year clinical outcomes of anterior cervical discectomy and fusion (ACDF) and to compare outcomes based on primary diagnosis of disc herniation, stenosis or advanced degenerative disc disease (DDD), number of levels treated, and preexisting adjacent level degeneration.

SUMMARY OF BACKGROUND DATA:

ACDF is a proven treatment for patients with stenosis and disc herniation and results in significantly improved short- and intermediate-term outcomes. Motion preservation treatments may result in improved long-term outcomes but need to be compared to long-term ACDF outcomes reference.

METHODS:

Patients who had disc herniation, stenosis, and DDD and underwent ACDF with or without decompression were prospectively enrolled and followed for a minimum of 10 years with outcome assessment at various intervals. All 159 consecutive patients had autogenous tricortical iliac crest bone graft and plate instrumentation used. Outcomes included visual analog scale for neck and arm pain, pain drawing, Oswestry Disability Index, and self-assessment of procedure success. Preoperative adjacent-level disc degeneration, pseudarthrosis, and secondary operations were analyzed.

RESULTS:

For all diagnostic groups, significant outcomes improvement was seen at all follow-up periods for all scales relative to preoperative scores. Outcomes were not related to age, gender, number of levels treated, and minimally to preexisting degeneration at the adjacent level. The use of narcotic pain medication decreased substantially. Neurological deficits almost all resolved. Patient self-reported success ranged from 85% to 95%. Over the long term, additional surgery for pseudarthrosis (10%) occurred in the early follow-up period, and for adjacent segment degeneration (21%), which occurred linearly during the >10-year follow-up period.

CONCLUSION:

ACDF leads to significantly improved outcomes for all primary diagnoses and was sustained for >10 years' follow-up. Secondary surgeries were performed for pseudarthrosis repair and for symptomatic adjacent-level degeneration.

14. HEADACHES

Radiographs do not help in ID of HA's

Insights into radiographic investigations for headaches in general practice

Family Practice — | January 25, 2018

Ifediora CO

Key characteristics of headaches examined through head imaging were identified, in order to strengthen the existing guidelines. Imaging for headaches revealed that significant intracranial findings were uncommon and magnetic resonance imagings (MRIs) offered no advantages over computed tomographies (CTs). No clear benefits were offered by repeating head scans within 5 years. Given the lesser chance of findings, psycho-morbidities ought to be considered while deciding the imaging needs.

Methods

- In order to investigate headaches among patients aged ≥ 18 , this 7-year retrospective analysis of head imaging scans were performed in an Australian general practice setting.

Results

- One hundred and nine patients required head imaging among the 517 (21.1%) patients, although 14 (2.7%) of these had repeat scans.
- In this study, three-quarters were females, and most of the headaches were recurrent (56.9%), severe (62.4%) or had associated red flags (78.0%).
- The only scans adopted were CT and MRI (4:1 and 1:1 for first and repeat scans, respectively).
- With no difference in findings between diagnoses from CTs and MRIs ($P=0.41$), 12 (11.0%) scans had findings likely to explain the headaches after the initial scans.
- No additional benefits were noted with repeat scans, and roughly 1 in 3 patients were referred to third-party carers (mostly neurologists).
- Females were found to have more recurrent headaches (OR = 2.63; CI = 1.09-6.35; $P=0.03$).
- Patients with psycho-morbidities were less likely to have scan findings that explained their headaches (OR = 0.22; CI = 0.06–0.88; $P=0.03$).
- In addition, they were more likely to undergo imaging (OR = 1.47; CI 0.96–2.27; $P=0.08$), though not quite significant.

18. CLAVICLE**Operative vs non operative AC**

J Orthop Trauma. 2018 Jan;32(1):1-9. doi: 10.1097/BOT.0000000000001004.

Operative Versus Nonoperative Management of Acute High-Grade Acromioclavicular Dislocations: A Systematic Review and Meta-Analysis.

Chang N¹, Furey A, Kurdin A.

OBJECTIVES:

Management of high-grade acromioclavicular (AC) joint dislocations has been controversial. Recent studies suggest no difference in outcomes between operative and nonoperative management of Rockwood types III-V injuries. The objective of this meta-analysis is to compare outcomes between operative and nonoperative management of high-grade AC joint dislocations.

DATA SOURCES:

Search was conducted using PubMed, Embase, and Cochrane databases through October 2016. A broad search strategy was used to identify English, comparative studies of AC joint dislocations.

STUDY SELECTION:

Inclusion criteria included comparative studies of AC joint dislocations in adult patients with acute, high-grade AC dislocations.

DATA EXTRACTION:

Two authors independently reviewed and assessed for bias according to the U.S. Preventative Task Force Quality Rating Criteria. Data were extracted for validated functional scores, clinical and radiographic outcomes, and complications.

DATA SYNTHESIS:

Nineteen studies (n = 954) were included in the meta-analysis. Operative group had better cosmetic outcome (odds ratio [OR] = 0.05; P < 0.00001) and radiographic reduction (OR = 24.94; P < 0.0001). Constant scores favored the operative group, although the difference may not be clinically significant (MD = 3.14; P = 0.03). Nonoperative treatment was associated with faster return to work (MD = 4.17, P < 0.0001), lower implant complications (OR = 7.19, P < 0.0001), and reduced infection rate (OR = 3.65, P = 0.007). No difference was found for DASH Score, return to sport, radiologic evidence of osteoarthritis, and need for surgery after failed management.

CONCLUSIONS:

No clinical difference in functional outcome scores was detected between operative and nonoperative management of high-grade AC joint dislocations. Patients in the nonoperative cohort had a more rapid return to work, but were associated with a poorer cosmetic outcome.

28. REPLACEMENTS

Psoas tendon

Muscles Ligaments Tendons J. 2016 Jul-Sep; 6(3): 378–383. Published online 2016 Dec 21. doi: 10.11138/mltj/2016.6.3.378 PMID: PMC5193529

Arthroscopic release of iliopsoas tendon in patients with femoro-acetabular impingement: clinical results at mid-term follow-up

Rodrigo Mardones, Alessio Giai Via, Alexander Tomic, Claudio Rodriguez, Matias Salineros, and Marcelo Somarriva

Background

The iliopsoas tendon is a recognized cause of extra-articular hip pain, and tenotomy has been described as an effective treatment in patients who do not respond to conservative treatments. Endoscopic release showed higher success rate, lower recurrence, fewer complications compared to open surgery. The aim of the study is to report the results at a mean of 4 years follow-up of a series of patients affected by femoroacetabular impingement (FAI) and an associated iliopsoas tendinopathy, treated with hip arthroscopy and transcapsular tendon release.

Methods

Fifteen patients were retrospectively reviewed. Assessment of radiographic signs of FAI was performed, the alpha angle, the femoral head-neck offset and the lateral center edge angle (LCEA) were collected. Osteoarthritis was assessed from the AP pelvic and graded according to the Tönnis classification. Modified Harris Hip Score (mHHS), VAIL score and VAS score were administered to all patients before surgery, at follow-up at 1 year (T1) and final follow-up (T2).

Results

We found a statistical significant improvement in functional scores (mHHS and VAIL score) from the baseline to T2. According to VAS score, a statistical significant improvement was also found from T0 to T2, from a median of 5.5 (range 3–7) to 0 (range 0–5) ($P < 0.001$). Two patients referred a recurrence of pain one year after surgery who were treated conservatively. No other complications have been reported.

Conclusion

Iliopsoas tendinopathy can be associated to FAI in some patients, and failure in diagnosing and treating may be the reason of poor results and a revision surgery. Arthroscopic iliopsoas tendon release seems to produce good clinical outcome, reducing pain and the rate of a revision surgeries. Level of evidence: IV case series.

35. KNEE/TOTAL**Racial disparity**

J Clin Rheumatol. 2018 Jan;24(1):1-5. doi: 10.1097/RHU.0000000000000613.

Racial Variation in Total Knee Replacement in a Diverse Nationwide Clinical Trial.

MacFarlane LA, Kim E, Cook NR, Lee IM, Iversen MD, Katz JN, Costenbader KH.

Abstract

OBJECTIVE:

Racial variation in total knee replacement (TKR) utilization in the United States has been reported in administrative database studies. We investigated racial variation in TKR procedures in a diverse cohort with severe knee pain followed in an ongoing clinical trial.

METHODS:

VITAL (VITamin D and OmegA-3 TriaL) is a nationwide, randomized controlled trial of 25,874 adults, 20% of whom are black. We identified a subgroup highly likely to have knee osteoarthritis based on severity of knee pain, physician-diagnosed knee osteoarthritis, and inability to walk 2 to 3 blocks without pain. Participants completed a modified Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) at baseline and self-reported incident TKR annually in follow-up. Using Cox regression, we analyzed the association of black versus white race with TKR, adjusting for demographic and socioeconomic characteristics, comorbidities, and WOMAC pain and function.

RESULTS:

Among 1070 participants who met the inclusion criteria, black participants reported worse baseline WOMAC pain (45 vs. 32, $P < 0.001$) and worse function (45 vs. 32, $P < 0.001$). During a median of 3.6 years (interquartile range, 3.2, 3.8 years) of follow-up, TKRs were reported by 180 participants. Black participants were less likely to undergo TKR (11% vs. 19%). After adjustment, the hazard ratio for TKR for black versus white participants was 0.51 (95% confidence interval, 0.32-0.81). Lower use of TKR among black participants was observed across all levels of income and education.

CONCLUSIONS:

Despite worse baseline knee pain and function, black participants had much lower adjusted risk of having TKR than white participants, demonstrating persistent racial disparity in TKR utilization.

37. OSTEOARTHRITIS/KNEE**Low load ex helps****The effect of low-load exercise on joint pain, function, and activities of daily living in patients with knee osteoarthritis**

Jason Peeler Jacquie Ripat\

DOI: <http://dx.doi.org/10.1016/j.knee.2017.12.003>

Background Knee osteoarthritis has a lifetime risk of nearly one in two, with obese individuals being most susceptible. While exercise is universally recognized as a critical component for management, unsafe or ineffective exercise frequently leads to exacerbation of joint symptoms. **Aim** Evaluate the effect of a 12 week lower body positive pressure (LBPP) supported low-load treadmill walking program on knee pain, joint function, and performance of daily activities in patients with knee osteoarthritis (OA).

Design Prospective, observational, repeated measures investigation.

Setting Community based, multidisciplinary musculoskeletal medicine clinic.

Patients Thirty-one patients, aged 50–75, with a BMI ≥ 25 kg/m² and radiographic confirmed mild to moderate knee OA.

Intervention Twelve week LBPP treadmill walking exercise regimen.

Outcome measures

The Knee Injury and Osteoarthritis Outcome Score (KOOS) and the Canadian Occupational Performance Measure (COPM) were used to quantify joint symptoms and patient function; isokinetic thigh muscle strength was evaluated; and a 10-point VAS was used to quantify acute knee pain while walking. Baseline and follow-up data were compared in order to examine the effect of the 12 week exercise intervention.

Results

There was a significant difference between baseline and follow-up data: KOOS and COPM scores both improved; thigh muscle strength increased; and acute knee pain during full weight bearing walking diminished significantly.

Conclusions

Participation in a 12 week LBPP supported treadmill walking exercise regimen significantly enhanced patient function and quality of life, as well as the ability to perform activities of daily living that patient's self-identified as being important, yet difficult to perform.

Hyaluronic acid

Volume 45, Issue 4, Supplement, February 2016, Pages S28-S33

Efficacy and safety of hyaluronic acid in the management of osteoarthritis: Evidence from real-life setting trials and surveys

panel Emmanuel Maheu MD^a François Rannou MD, PhD^b Jean-Yves Reginster MD, PhD^c
<https://doi.org/10.1016/j.semarthrit.2015.11.008> Get rights and content

Abstract

The European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) treatment algorithm recommends intra-articular (IA) hyaluronic acid (HA) for management of knee osteoarthritis (OA) as second-line treatment in patients who remain symptomatic despite use of non-steroidal anti-inflammatory drugs (NSAIDs). This recommendation is based upon accumulating evidence that IA HA provides a significant benefit in knee OA. There is good evidence that IA HA injections reduce pain and increase function in knee OA, and the benefits are long-lasting as compared with IA corticosteroids. Evidence from real-life studies of repeat courses of IA HA demonstrates an improvement in pain or function lasting up to 40 months (12 months after the last injection cycle), a reduction in use of concomitant analgesia by up to 50%, and suggests that there may be a delay in the need for total knee replacement (TKR) of around 2 years. The clinical benefit of IA HA on knee OA may be 2-fold: (i) mechanical viscosupplementation of the joint (allowing lubrication and shock absorption) and (ii) the re-establishment of joint homeostasis through induction of endogenous HA production, which continues long after the exogenous injection has left the joint. The magnitude of the clinical effect may be different for different HA products, but this has not been proven so far and requires further investigation. IA HA injections are generally considered to be safe, although a slightly higher number of cases of local reactions and post-injection non-septic arthritis has been reported with high molecular weight cross-linked HAs.

The use of IA HA in knee OA patients with mild–moderate disease, and for more severe patients wishing to delay TKR surgery, is recommended by the ESCEO task force. Further investigation into the OA patient types most likely to benefit from IA HA is warranted. Viscosupplementation with IA HA is a safe and effective component of the multi-modal management of knee OA.

Omega's and pain

Clin J Pain. 2018 Feb;34(2):182-189. doi: 10.1097/AJP.0000000000000517.

Omega-6: Omega-3 PUFA Ratio, Pain, Functioning, and Distress in Adults With Knee Pain.

Sibille KT^{1,2}, King C³, Garrett TJ⁴, Glover TL^{2,5}, Zhang H⁶, Chen H⁶, Reddy D², Goodin BR⁷, Sotolongo A⁸, Petrov ME⁹, Cruz-Almeida Y^{1,2}, Herbert M¹⁰, Bartley EJ², Edberg JC⁸, Staud R¹¹, Redden DT¹², Bradley LA⁸, Fillingim RB².

OBJECTIVES:

Osteoarthritis (OA) is associated with inflammation, chronic pain, functional limitations, and psychosocial distress. High omega-3 (n-3) polyunsaturated fatty acids (PUFAs) are associated with lower levels of inflammatory mediators, anti-nociception, and adaptive cognitive/emotional functioning. High omega-6 (n-6) PUFAs are associated with inflammation, nociception, and psychological distress. While findings related to n-3 supplementation in knee OA are mixed, consideration of the n-6:n-3 ratio and additional outcome measures may provide improved understanding of the potential relevance of these fatty acids in OA. On the basis of recommended and typical ranges of the n-6:n-3 ratio, we hypothesized that in adults with knee pain, those with a high n-6:n-3 ratio would have greater pain/functional limitations, experimental pain sensitivity, and psychosocial distress compared with those with a low n-6:n-3 ratio.

MATERIALS AND METHODS:

A cross-sectional investigation of clinical and experimental pain and physical and psychosocial functioning was completed in 167 adults ages 45 to 85 meeting knee OA screening criteria. Blood samples were collected and the plasma n-6:n-3 PUFA ratio determined. Quartile splits were computed and low (n=42) and high (n=41) ratio groups were compared.

RESULTS:

The high ratio group reported greater pain and functional limitations, (all $P_s < 0.04$), mechanical temporal summation (hand and knee, $P < 0.05$), and perceived stress ($P = 0.008$) but not depressive symptoms.

DISCUSSION:

In adults with knee pain, a high n-6:n-3 ratio is associated with greater clinical pain/functional limitations, experimental pain sensitivity, and psychosocial distress compared with a low ratio group. Findings support consideration of the n-6:n-3 PUFA ratio and additional clinical endpoints in future research efforts.

PMID: 28542024

45 A. MANUAL THERAPY LUMBAR & GENERAL

Manipulation helps LBP and Neck pain

Spine J. 2004 May-Jun;4(3):335-56.

Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis.

Bronfort G¹, Haas M, Evans RL, Bouter LM.

BACKGROUND CONTEXT: Despite the many published randomized clinical trials (RCTs), a substantial number of reviews and several national clinical guidelines, much controversy still remains regarding the evidence for or against efficacy of spinal manipulation for low back pain and neck pain.

PURPOSE: To reassess the efficacy of spinal manipulative therapy (SMT) and mobilization (MOB) for the management of low back pain (LBP) and neck pain (NP), with special attention to applying more stringent criteria for study admissibility into evidence and for isolating the effect of SMT and/or MOB.

STUDY DESIGN: RCTs including 10 or more subjects per group receiving SMT or MOB and using patient-oriented primary outcome measures (eg, patient-rated pain, disability, global improvement and recovery time).

METHODS: Articles in English, Danish, Swedish, Norwegian and Dutch reporting on randomized trials were identified by a comprehensive search of computerized and bibliographic literature databases up to the end of 2002. Two reviewers independently abstracted data and assessed study quality according to eight explicit criteria. A best evidence synthesis incorporating explicit, detailed information about outcome measures and interventions was used to evaluate treatment efficacy. The strength of evidence was assessed by a classification system that incorporated study validity and statistical significance of study results. Sixty-nine RCTs met the study selection criteria and were reviewed and assigned validity scores varying from 6 to 81 on a scale of 0 to 100. Forty-three RCTs met the admissibility criteria for evidence.

RESULTS: Acute LBP: There is moderate evidence that SMT provides more short-term pain relief than MOB and detuned diathermy, and limited evidence of faster recovery than a commonly used physical therapy treatment strategy. Chronic LBP: There is moderate evidence that SMT has an effect similar to an efficacious prescription nonsteroidal anti-inflammatory drug, SMT/MOB is effective in the short term when compared with placebo and general practitioner care, and in the long term compared to physical therapy. There is limited to moderate evidence that SMT is better than physical therapy and home back exercise in both the short and long term. There is limited evidence that SMT is superior to sham SMT in the short term and superior to chemonucleolysis for disc herniation in the short term. However, there is also limited evidence that MOB is inferior to back exercise after disc herniation surgery. Mix of acute and chronic LBP: SMT/MOB provides either similar or better pain outcomes in the short and long term when compared with placebo and with other treatments, such as McKenzie therapy, medical care, management by physical therapists, soft tissue treatment and back school. Acute NP: There are few studies, and the evidence is currently inconclusive. Chronic NP: There is moderate evidence that SMT/MOB is superior to general practitioner management for short-term pain reduction but that SMT offers at most similar pain relief to high-technology rehabilitative exercise in the short and long term. Mix of acute and chronic NP: The overall evidence is not clear. There is moderate evidence that MOB is superior to physical therapy and family physician care, and similar to SMT in both the short and long term. There is limited evidence that SMT, in both the short and long term, is inferior to physical therapy.

CONCLUSIONS: Our data synthesis suggests that recommendations can be made with some confidence regarding the use of SMT and/or MOB as a viable option for the treatment of both low back pain and NP. There have been few high-quality trials distinguishing between acute and chronic patients, and most are limited to shorter-term follow-up. Future trials should examine well-defined subgroups of patients, further address the value of SMT and MOB for acute patients, establish optimal number of treatment visits and consider the cost-effectiveness of care.

53. CORE**Trunk activity increases with step tasks in LBP****Experimental Low Back Pain Decreased Trunk Muscle Activity in Currently Asymptomatic Recurrent Low Back Pain Patients during Step Tasks**

Lars Henrik Larsen Rogerio Pessoto Hirata Thomas Graven-Nielsen

DOI: <http://dx.doi.org/10.1016/j.jpain.2017.12.263>

Highlights

- Impact of experimental LBP studied in pain-free recurrent LBP patients and controls
- Higher baseline trunk muscle activity in patients than controls during step tasks
- Higher experimental pain intensity in patients than controls
- Pain-induced movement strategy changes in patients may increase LBP recurrence risk

Abstract

Low back pain (LBP) patients demonstrate reorganized trunk muscle activity but if similar changes are manifest in recurrent LBP patients (R-LBP) during asymptomatic periods remains unknown. In 26 healthy and 27 currently asymptomatic R-LBP participants electromyographic activity (EMG) was recorded from trunk and gluteal muscles during series of stepping up and down on a step bench before and during experimentally intramuscular induced unilateral and bilateral LBP. Pain intensity was assessed by numeric rating scale (NRS) scores. Root-mean-square EMG (RMS-EMG) normalized to maximal voluntary contraction EMG and pain-evoked differences from baseline (Delta-RMS-EMG) were analyzed. Step task duration was calculated from foot sensors. R-LBP compared with controls showed higher baseline RMS-EMG and NRS scores of experimental pain ($P < 0.05$). In both groups, bilateral compared with unilateral experimental NRS scores were higher ($P < 0.001$) and patients compared with controls reported higher NRS scores during both pain conditions ($P < 0.04$). In patients, unilateral pain decreased Delta-RMS-EMG in m. iliocostalis and bilateral pain decreased Delta-RMS-EMG in all back and gluteal muscles during step tasks ($P < 0.05$) compared with controls. In controls, bilateral versus unilateral experimental pain induced increased step task duration and trunk RMS-EMG while both pain conditions decreased step task duration and trunk RMS-EMG in R-LBP patients compared with controls ($P < 0.05$).

PERSPECTIVES

Task duration and trunk muscle activity increased in controls and decreased in R-LBP patients during experimental muscle LBP. These results indicate protective strategies in controls during acute pain while R-LBP patients showed higher pain intensity and altered strategies that may be caused by the higher pain intensity, but the long-term consequence remains unknown.

Induced LBP

Original Report

Experimental Low Back Pain Decreased Trunk Muscle Activity in Currently Asymptomatic Recurrent Low Back Pain Patients during Step Tasks

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<https://doi.org/10.1016/j.jpain.2017.12.263>Get rights and content**Highlights**

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Abstract

Low back pain (LBP) patients demonstrate reorganized trunk muscle activity but if similar changes are manifest in recurrent LBP patients (R-LBP) during asymptomatic periods remains unknown. In 26 healthy and 27 currently asymptomatic R-LBP participants electromyographic activity (EMG) was recorded from trunk and gluteal muscles during series of stepping up and down on a step bench before and during experimentally intramuscular induced unilateral and bilateral LBP. Pain intensity was assessed by numeric rating scale (NRS) scores. Root-mean-square EMG (RMS-EMG) normalized to maximal voluntary contraction EMG and pain-evoked differences from baseline (Delta-RMS-EMG) were analyzed. Step task duration was calculated from foot sensors. R-LBP *compared with controls showed higher baseline RMS-EMG and NRS scores of experimental pain ($P < 0.05$)*. In both groups, bilateral compared with unilateral experimental NRS scores were higher ($P < 0.001$) and patients compared with controls reported higher NRS scores during both pain conditions ($P < 0.04$). In patients, unilateral pain decreased Delta-RMS-EMG in m. iliocostalis and bilateral pain decreased Delta-RMS-EMG in all back and gluteal muscles during step tasks ($P < 0.05$) compared with controls. In controls, bilateral versus unilateral experimental pain induced increased step task duration and trunk RMS-EMG while both pain conditions decreased step task duration and *trunk RMS-EMG in R-LBP patients compared with controls ($P < 0.05$)*.

PERSPECTIVES

Task duration and trunk muscle activity increased in controls and decreased in R-LBP patients during experimental muscle LBP. These results indicate protective strategies in controls during acute pain while R-LBP patients showed higher pain intensity and altered strategies that may be caused by the higher pain intensity, but the long-term consequence remains unknown.

59. PAIN**Chronic pain in families**

Pain. 2017 Sep 28. doi: 10.1097/j.pain.0000000000001062.

Chronic pain in families: a cross-sectional study of shared social, behavioural, and environmental influences.

Campbell P¹, Jordan KP, Smith BH, Scotland G, Dunn KM.

Chronic pain is common and creates a significant burden to the individual and society. Emerging research has shown the influence of the family environment on pain outcomes. However, it is not clear what shared factors between family members associate with chronic pain.

This study aimed to investigate the family-level contribution to an individual's chronic pain status. This was a cross-sectional study using the Generation Scotland: Scottish Family Health Study data set. This study focused on a nested cohort of dyads (only 2 relatives per family, n = 2714). Multi-level modelling was first performed to estimate the extent of variance in chronic pain at the family level. Then each member of the dyad was randomly assigned as either the exposure or outcome family member, and logistic regression was used to identify shared factors associated with the outcome of chronic pain status. Multi-level modelling showed just under 10% of variation in chronic pain status was at a family level. There was an increase in odds of chronic pain if exposure family member had chronic pain (odds ratio [OR]: 1.30, 95% confidence interval [CI]: 1.02-1.65), if both were women (OR: 1.39, 95% CI: 0.99-1.94), if both were older in age (OR: 1.80, 95% CI: 1.31-2.48), and if both had low household income (OR: 3.27, 95% CI: 1.72-6.21).

These findings show that most explanation for chronic pain is still at the individual level. However, some significant shared effects between family members associate with chronic pain, and this highlights the influence of the family context.

PMID: 28937576 PMCID: PMC5737454 DOI: 10.1097/j.pain.0000000000001062

60. COMPLEX REGIONAL PAIN**GMI**

Clin J Pain. 2018 Feb;34(2):145-154. doi: 10.1097/AJP.0000000000000522.

The Effectiveness of Transcranial Direct Current Stimulation as an Add-on Modality to Graded Motor Imagery for Treatment of Complex Regional Pain Syndrome: A Randomized Proof of Concept Study.

Lagueux É^{1,2}, Bernier M^{1,3}, Bourgault P^{1,4}, Whittingstall K^{1,3}, Mercier C^{5,6}, Léonard G^{2,7}, Laroche S², Tousignant-Laflamme Y^{1,2}.

BACKGROUND:

The efficacy of Graded Motor Imagery (GMI) for the management of Complex Regional Pain Syndrome (CRPS) is supported by evidence, but its treatment effect remains generally modest. Transcranial Direct Current Stimulation (tDCS) has been advocated as an adjunct intervention to enhance the effect of motor imagery approaches in pain populations.

OBJECTIVE:

The purpose of this study was to investigate the effectiveness of GMI+active tDCS compared with the GMI+sham tDCS in the treatment of CRPS type I.

METHODS:

A total of 22 patients (n=11/group) were randomly assigned to the experimental (GMI+tDCS) or placebo (GMI+sham tDCS) group. GMI treatments lasted 6 weeks; anodal tDCS was applied over the motor cortex for 5 consecutive days during the first 2 weeks and once a week thereafter. Changes in pain perception, quality of life, kinesiophobia, pain catastrophizing, anxiety and mood were monitored after 6 weeks of treatment (T1) and 1-month posttreatment (T2).

RESULTS:

GMI+tDCS induced no statistically significant reduction in pain compared with GMI+sham tDCS. Although we observed significant group differences in kinesiophobia (P=0.012), pain catastrophizing (P=0.049), and anxiety (P=0.046) at T1, these improvements were not maintained at T2 and did not reach a clinically significant difference.

DISCUSSION:

We found no added value of tDCS combined with GMI treatments for reducing pain in patients with chronic CRPS. However, given that GMI+sham tDCS induced no significant change, further studies comparing GMI+tDCS and tDCS alone are needed to further document tDCS's effect in CRPS.

61. FIBROMYALGIA**Periaqueductal gray****Resting Functional Connectivity of the Periaqueductal Gray is Associated with Normal Inhibition and Pathological Facilitation in Conditioned Pain Modulation**

Daniel E. Harper Eric Ichesco

DOI: <http://dx.doi.org/10.1016/j.jpain.2018.01.001>

- Conditioned pain modulation (CPM) facilitation observed in fibromyalgia patients
- Smaller periaqueductal gray (PAG) volume observed in fibromyalgia patients
- PAG resting connectivity with cortical areas associated with pain inhibition
- PAG-to-brainstem connectivity helps explain CPM facilitation in fibromyalgia
- Consistent with pathological pain-facilitative brainstem mechanisms found in animals

Abstract

Conditioned pain modulation (CPM), a psychophysical paradigm that is commonly used to infer the integrity of endogenous pain-altering systems by observation of the effect of one noxious stimulus on another, has previously identified deficient endogenous analgesia in fibromyalgia (FM) and other chronic pain conditions. The mechanisms underlying this deficiency, be they insufficient inhibition and/or active facilitation, are largely unknown. The present cross sectional study used a combination of behavioral CPM testing, voxel based morphometry (VBM), and resting state functional connectivity to identify neural correlates of CPM in healthy controls (HC; n=14) and FM patients (n=15), and to probe for differences that could explain the pain-facilitative CPM that was observed in our patient sample. VBM identified a cluster encompassing the periaqueductal gray (PAG) that contained significantly less gray matter volume in FM patients. Higher resting connectivity between this cluster and cortical pain processing regions was associated with more efficient inhibitory CPM in both groups, whereas PAG connectivity with the dorsal pons was associated with greater CPM inhibition only in HC. Greater PAG connectivity to the caudal pons/rostral medulla, which was pain-inhibitory in HC, was associated with pain facilitation in FM.

Perspective

: These findings indicate that variation in the strength of the PAG's resting functional connectivity can explain some of the normal variability in CPM. In addition, pain-facilitative CPM observed in FM patients likely involves both attenuation of pain inhibitory and amplification of pain facilitative processes in the central nervous system.

Course of disease

Clin Rheumatol. 2018 Jan 9. doi: 10.1007/s10067-017-3967-0.

Severity of symptoms persists for decades in fibromyalgia-a 26-year follow-up study.

Isomeri R¹, Mikkelsen M^{2,3}, Partinen M^{4,5}, Kauppi MJ^{2,3}.

The aim of this study is to find out the outcome of 28 patients who got the diagnosis of primary fibromyalgia (pFM) 26 years ago.

In 1986, 56 patients with widespread pain were examined and filled in a base questionnaire (BQ). Of them, 42 fulfilled the Yunus criteria for pFM. Twenty-six years later, addresses of 38 patients were found, and an extensive follow-up questionnaire (FupQ) was mailed to them. Of them, 28 (74%) answered the FupQ. This included nine identical questions with the BQ and questions concerning changes in their symptoms and quality of life (QoL). Three patients (11%) had healed from fibromyalgia (FM), and 23% reported having one or several symptomless periods lasting at least 1 year. In others (n = 25), all but pain and ache showed slight deterioration. Despite the aging and FM, the level of functional ability evaluated by Stanford Health Assessment Questionnaire (HAQ) remained at the same level (BQ 0.41 vs. Fup 0.44, p = 0.82). The sum score of reported symptoms (n = 21) did not change significantly (10.8 (SD 2.9) vs. 11.1 (SD 4.1), p = 0.75). Experienced sleeplessness increased most significantly (27 vs. 65%, p = 0.0034).

Exercising did not have a significant influence on the changes of the measured parameters. However, the three healed patients exercised regularly. Symptoms of FM have persisted in most patients for decades without significant deterioration of self-reported functional ability. About one fourth of patients had experienced long symptomless periods during their illness. Three patients (11%) reported that they have healed from FM.

62 A. NUTRITION/VITAMINS**Diets and mortality**

J Am Diet Assoc. 2011 Jan; 111(1): 84–91. doi: 10.1016/j.jada.2010.10.012

PMCID: PMC3699861 IHMSID: NIHMS483363

Dietary Patterns and Survival of Older Adults

AMY L. ANDERSON, PhD, Postdoctoral researcher, TAMARA B. HARRIS, MD, MS, Chief, FRANCES A. TYLAVSKY, DrPH, Professor, SARA E. PERRY, MA, MPH, PhD research assistant, DENISE K. HOUSTON, PhD, RD, Assistant professor, TRISHA F. HUE, MPH, Epidemiologist, ELSA S. STROTMAYER, PhD, MPH, Assistant professor, and NADINE R. SAHYOUN, PhD, RD, Associate professor, FOR THE HEALTH ABC STUDY

Background

Recent research has linked overall dietary patterns to survival in older adults.

Objectives

The objective of this study was to determine the dietary patterns of a cohort of older adults, and to explore associations of these dietary patterns with survival over a 10-year period. A secondary goal was to evaluate participants' quality of life and nutritional status according to their dietary patterns.

Design

The Health, Aging, and Body Composition Study is a prospective cohort study of 3,075 older adults. In this study, all-cause mortality was assessed from baseline through Year 10. Food intake was estimated with a modified Block food frequency questionnaire, and dietary patterns of 2,582 participants with complete data were derived by cluster analysis.

Results

Six dietary pattern clusters were identified, including a Healthy Foods cluster, characterized by higher intake of low-fat dairy products, fruit, whole grains, poultry, fish, and vegetables. Both the High-Fat Dairy Products and Sweets and Desserts clusters had a 1.4-fold higher risk of mortality than the Healthy Foods cluster after adjusting for potential confounders. The Healthy Foods cluster also had significantly more years of healthy life and more favorable levels of selected nutritional biomarkers than the other clusters.

Conclusions

A dietary pattern consistent with current guidelines to consume relatively high amounts of vegetables, fruit, whole grains, poultry, fish, and low-fat dairy products may be associated with superior nutritional status, quality of life and survival in older adults.