

ABSTRACTS

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2. LBP

Mindfulness training and LBP

Pain. 2016 Nov;157(11):2434-2444.

Mindfulness-based stress reduction and cognitive behavioral therapy for chronic low back pain: similar effects on mindfulness, catastrophizing, self-efficacy, and acceptance in a randomized controlled trial.

Turner JA¹, Anderson ML, Balderson BH, Cook AJ, Sherman KJ, Cherkin DC.
Author information

Abstract

Cognitive behavioral therapy (CBT) is believed to improve chronic pain problems by decreasing patient catastrophizing and increasing patient self-efficacy for managing pain.

Mindfulness-based stress reduction (MBSR) is believed to benefit patients with chronic pain by increasing mindfulness and pain acceptance. However, little is known about how these therapeutic mechanism variables relate to each other or whether they are differentially impacted by MBSR vs CBT. In a randomized controlled trial comparing MBSR, CBT, and usual care (UC) for adults aged 20 to 70 years with chronic low back pain (N = 342), we examined (1) baseline relationships among measures of catastrophizing, self-efficacy, acceptance, and mindfulness and (2) changes on these measures in the 3 treatment groups. At baseline, catastrophizing was associated negatively with self-efficacy, acceptance, and 3 aspects of mindfulness (nonreactivity, nonjudging, and acting with awareness; all P values <0.01). Acceptance was associated positively with self-efficacy (P < 0.01) and mindfulness (P values <0.05) measures. Catastrophizing decreased slightly more posttreatment with MBSR than with CBT or UC (omnibus P = 0.002). Both treatments were effective compared with UC in decreasing catastrophizing at 52 weeks (omnibus P = 0.001). In both the entire randomized sample and the subsample of participants who attended ≥ 6 of the 8 MBSR or CBT sessions, differences between MBSR and CBT at up to 52 weeks were few, small in size, and of questionable clinical meaningfulness.

The results indicate overlap across measures of catastrophizing, self-efficacy, acceptance, and mindfulness and similar effects of MBSR and CBT on these measures among individuals with chronic low back pain.

Total knee and LBP

Arch Orthop Trauma Surg. 2016 Oct 3.

Concomitant low back pain impairs outcomes after primary total knee arthroplasty in patients over 65 years: a prospective, matched cohort study.

Collados-Maestre I¹, Lizaur-Utrilla A^{2,3}, Martinez-Mendez D¹, Marco-Gomez L¹, Lopez-Prats FA⁴.

Author information

Abstract

INTRODUCTION:

Knee osteoarthritis and low back pain (LBP) are two conditions with relatively high prevalence in patients over 65 years. The objective was to determine the effect of symptomatic LBP on the patient-reported outcome after primary TKA.

MATERIAL AND METHOD:

A cohort of 48 patients with concomitant LBP was prospectively matched 1:2 with patients without LBP for gender, age, body mass index and preoperative knee function. LBP severity was measured with the Oswestry Disability Index (ODI). Patient-reported outcomes were assessed with reduced Short-Form (SF12), Western Ontario and McMaster Universities score (WOMAC), and visual analogue scale (VAS) for satisfaction. Functional outcome was assessed with the Knee Society Scores (KSS).

RESULTS:

The mean postoperative follow-up was 3.2 years. At last follow-up, LBP cohort had significantly worse SF12, WOMAC, KSS and VAS scores than those patients without LBP. Preoperative ODI score was significantly correlated with outcomes.

CONCLUSION:

Worse functional and patient-reported outcomes were obtained in patients over 65 years with concomitant LBP, and this was related to the intensity of preoperative LBP. Despite successful outcome in the knee, the LBP usually remains after TKA and this may impair satisfaction and patient-reported outcomes. These patients should be properly informed about their potential outcomes.

BMI and LBP

Spine (Phila Pa 1976). 2016 Oct 15;41(20):E1237-E1243.

The Association Between Body Mass Index (BMI) and Back or Leg Pain in Patients With Spinal Conditions: Results from the Genodisc Study.

Segar AH¹, Urban JP, Fairbank JC, Judge A; Genodisc Consortium.
Author information

Abstract

STUDY DESIGN:

A prospective observational study.

OBJECTIVE:

The aim of this study was to identify the relationship between obesity, quantified by body mass index (BMI), and both back and leg pain in spinal patients.

SUMMARY OF BACKGROUND DATA:

Obesity and back pain are massive public health problems. Given the poor correlation between pain and a pathological change in the spine, further investigation is required into other, nonpathological predictors such as obesity.

METHODS:

The Genodisc Study was one of the largest cross-sectional studies of patients presenting to tertiary spinal units and recruited from six centers in four European countries. In total, 2636 patients were recruited over a 5-year period between 2008 and 2013. Both back and leg pain were scored by patients in the range of 0 to 10. Linear regression was used to model the relationship between BMI and pain. Potential confounders included in the model were age, Zung Depression score, episodes of sport, gender, disability benefit, family history, previous surgery, smoking status, work type, clinical diagnosis, and relevant comorbidities. Back and leg pain outcomes were modeled separately.

RESULTS:

The study included 1160 men and 1349 women with a mean age of 50.9 years and mean BMI of 27.2 kg/m. In our fully adjusted model, a 5-point increase in BMI was associated with greater leg [0.19 units (95% confidence interval 0.08-0.31)] but not back [0.10 units (95% CI -0.02 to 0.22)] pain scores. Although this relationship was statically significant, given the small magnitude of the relationship, the clinical significance is limited. Similarly, female gender, heavy workload, rheumatoid arthritis, previous spine surgery, and depression were associated with higher back and leg pain.

CONCLUSION:

In this large observational study of spine patients presenting to tertiary European centers, obesity, as measured by increased BMI, was associated with greater leg pain.

LEVEL OF EVIDENCE:

2.

4. INJECTIONS

Facet injections

Eur J Pain. 2016 Oct 10. doi: 10.1002/ejp.963.

Systematic review of patient history and physical examination to diagnose chronic low back pain originating from the facet joints.

Maas ET¹, Juch JN², Ostelo RW^{3,4}, Groeneweg JG², Kallewaard JW⁵, Koes BW⁶, Verhagen AP⁶, Huygen FJ², van Tulder MW³.

Author information

Abstract

Patient history and physical examination are frequently used procedures to diagnose chronic low back pain (CLBP) originating from the facet joints, although the diagnostic accuracy is controversial. The aim of this systematic review is to determine the diagnostic accuracy of patient history and/or physical examination to identify CLBP originating from the facet joints using diagnostic blocks as reference standard. We searched MEDLINE, EMBASE, CINAHL, Web of Science and the Cochrane Collaboration database from inception until June 2016. Two review authors independently selected studies for inclusion, extracted data and assessed the risk of bias. We calculated sensitivity and specificity values, with 95% confidence intervals (95% CI). Twelve studies were included, in which 129 combinations of index tests and reference standards were presented. Most of these index tests have only been evaluated in single studies with a high risk of bias. Four studies evaluated the diagnostic accuracy of the Revel's criteria combination. Because of the clinical heterogeneity, results were not pooled. The published sensitivities ranged from 0.11 (95% CI 0.02-0.29) to 1.00 (95% CI 0.75-1.00), and the specificities ranged from 0.66 (95% CI 0.46-0.82) to 0.91 (95% CI 0.83-0.96). Due to clinical heterogeneity, the evidence for the diagnostic accuracy of patient history and/or physical examination to identify facet joint pain is inconclusive. Patient history and physical examination cannot be used to limit the need of a diagnostic block. The validity of the diagnostic facet joint block should be studied, and high quality studies are required to confirm the results of single studies.

SIGNIFICANCE:

Patient history and physical examination cannot be used to limit the need of a diagnostic block. The validity of the diagnostic facet joint block should be studied, and high quality studies are required to confirm the results of single studies.

6. PELVIC GIRDLE

MRI assessment

Arthritis Res Ther. 2016 Oct 13;18(1):237.

Identification of subgroups of inflammatory and degenerative MRI findings in the spine and sacroiliac joints: a latent class analysis of 1037 patients with persistent low back pain.

Arnbak B^{1,2}, Jensen RK^{3,4}, Manniche C^{3,4}, Hendricks O^{4,5}, Kent P^{6,7}, Jurik AG^{3,4,8}, Jensen TS^{3,4,9}.
Author information

Abstract

BACKGROUND:

The aim of this study was to investigate subgroups of magnetic resonance imaging (MRI) findings for the spine and sacroiliac joints (SIJs) using latent class analysis (LCA), and to investigate whether these subgroups differ in their demographic and clinical characteristics.

METHODS:

The sample included 1037 patients aged 18-40 years with persistent low back pain (LBP). LCA was applied to MRI findings of the spine and SIJs. The resulting subgroups were tested for differences in self-reported demographic and clinical characteristics.

RESULTS:

A five-class model was identified: Subgroup 1, 'No or few findings' (n = 116); Subgroup 2, 'Mild spinal degeneration' (n = 540); Subgroup 3, 'Moderate to severe spinal degeneration' (n = 229); Subgroup 4, 'Moderate to severe spinal degeneration with mild SIJ findings' (n = 68); and Subgroup 5, 'Mild spinal degeneration with moderate to severe SIJ findings' (n = 84). The two SIJ subgroups (Subgroups 4 and 5) had a higher median activity limitation score (Roland Morris Disability Questionnaire calculated as a proportional score: 65 (IQR 48-78)/65 (48-78)) compared with Subgroups 1-3 (48 (35-74)/57 (39-74)/57 (39-74)), a higher prevalence of women (68 % (95 % CI 56-79)/68 % (58-78)) compared with Subgroups 2 and 3 (51 % (47-55)/40 % (33-46)), a higher prevalence of being overweight (67 % (95 % CI 55-79)/53 % (41-65)) compared with Subgroup 1 (36 % (26-46)) and a higher prevalence of previous LBP episodes (yes/no: 81 % (95 % CI 71-91)/79 % (70-89)) compared with Subgroup 1 (58 % (48-67)). Subgroup 5 was younger than Subgroup 4 (median age 29 years (IQR 25-33) versus 34 years (30-37)) and had a higher prevalence of HLA-B27 (40 % (95 % CI 29-50)) compared with the other subgroups (Subgroups 1-4: 12 % (6-18)/7 % (5-10)/6 % (3-9)/12 % (4-20)). Across the subgroups with predominantly spinal findings (Subgroups 1-3), median age, prevalence of men, being overweight and previous LBP episodes were statistically significantly lower in Subgroup 1, higher in Subgroup 2 and highest in Subgroup 3.

CONCLUSIONS:

Five distinct subgroups of MRI findings in the spine and SIJs were identified. The results indicate that SIJ MRI findings not only can be seen as a part of the spondyloarthritis disease entity, but also are associated with age, gender and being overweight. Furthermore, the results indicate that LBP patients with SIJ MRI findings are more disabled compared with patients without SIJ MRI findings, and that moderate to severe spinal degeneration and/or SIJ MRI findings may be associated with recurrent pain.

7. PELVIC ORGANS/WOMAN'S HEALTH**Vaginal probiotics**

Fetal Diagn Ther. 2016 Oct 15.

Vaginal Probiotic Administration in the Management of Preterm Premature Rupture of Membranes.

Daskalakis GJ¹, Karambelas AK.
Author information

Abstract

OBJECTIVE:

To examine the influence of vaginal probiotic administration as an adjunct to standard antibiotic treatment on perinatal outcome in women with preterm premature rupture of membranes (PPROM).

MATERIALS AND METHODS:

This was a prospective randomized trial of cases with PPRM (24-34 weeks) that were admitted to our department between 2011 and 2015. Forty-nine cases received vaginal probiotics for 10 days in combination with antibiotic prophylaxis and were compared to 57 others that received only antibiotics for the same time period.

RESULTS:

The mean gestational age at birth (35.49 vs. 32.53 weeks), the mean duration of the latency period (5.60 vs. 2.48 weeks), and the mean birth weight (2,439.08 vs. 2,004.81 g) were significantly higher in the study group in comparison to the controls. Moreover, the neonates of the study group had a lower chance to enter the neonatal intensive care unit or the neonatal special care unit, shorter total hospitalization time, and lower need for oxygen administration and mechanical ventilation, as well as lower length of oxygen administration.

CONCLUSIONS:

Vaginal probiotics as an adjunct to antibiotic prophylaxis in women with PPRM prolonged the latency period and improved the perinatal outcome.

Fish consumption and breast CA

Cancer Epidemiol Biomarkers Prev. 2016 Oct 10. pii: cebp.0473.2016.

Early life residence, fish consumption and risk of breast cancer.

Haraldsdottir A¹, Steingrimsdottir L², Valdimarsdottir U³, Aspelund T³, Tryggvadottir L⁴, Harris TB⁵, Launer L⁶, Mucci LA⁷, Giovannucci EL⁸, Adami HO⁹, Gudnason V¹⁰, Torfadottir JE³.

Author information

Abstract

BACKGROUND:

Little is known about fish intake throughout the life course and the risk of breast cancer.

METHODS:

We used data on the first residence of 9,340 women born 1908-1935 in the Reykjavik Study as well as food frequency data for different periods of life from a subgroup of the cohort entering the AGES-Reykjavik Study (n = 2,882).

RESULTS:

During a mean follow-up of 27.3 years, 744 women were diagnosed with breast cancer in the Reykjavik Study. An inverse association of breast cancer was observed among women who lived through the puberty period in coastal villages, compared with women residing in the capital area (HR = 0.78, 95% CI: 0.61, 0.99). In the subgroup analysis of this Icelandic population, generally characterized by high fish intake, we found an indication of lower risk of breast cancer among women with high fish consumption (more than 4 portions per week) in adolescence (HR 0.71, 95% CI, 0.44, 1.13) and midlife (HR 0.46, 95% CI, 0.22, 0.97), compared with low consumers (2 portions per week or less). No association was found for fish liver oil consumption in any time period which could be due to lack of a reference group with low omega-3 fatty acids intake in the study group.

CONCLUSION:

Our findings suggest that very high fish consumption in early to midlife may be associated with a reduced risk of breast cancer.

IMPACT:

Very high fish consumption in early adulthood to midlife may be associated with decreased risk of breast cancer.

Micro changes in endometriosis

J Minim Invasive Gynecol. 2016 Sep 29. pii: S1553-4650(16)31075-5. doi: 10.1016/j.jmig.2016.09.013.

Ultrastructural Investigation of Pelvic Peritoneum in Patients with Chronic Pelvic Pain and Subtle Endometriosis in Association with Chromoendoscopy.

Mehdizadehkashi A¹, Tahermanesh K², Fazel Anvari-Yazdi A³, Chaichian S⁴, Azarpira N⁵, Nobakht M⁶, Abed SM⁷, Hashemi N⁸.

Author information

Abstract

STUDY OBJECTIVE:

In general, in the context of chronic pelvic pain (CPP) and endometriosis, there is no established relationship between the severity of pain and stage of endometriosis. The aim of this study was to evaluate the pelvic peritoneum under chromoendoscopy by Scanning Electron Microscopy (SEM) as well as light microscopy with H&E staining and immunohistochemical assay in patients of CPP associated with subtle endometriosis.

DESIGN:

Case series study.

DESIGN:

classification: Canadian Task Force classification II.

SETTING:

This study was carried out in one referral academic community tertiary medical center.

PATIENTS:

Three women aged 29-37 years old were referred to OB-GYN clinic of tertiary university hospital with chronic pelvic pain; they were suspicious with endometriosis, were not responding to medical treatments, and had undergone a pelvic laparoscopy to determine the stage of endometriosis and preparation of peritoneal samples under the guide of methylene blue in 0.25% dilution.

INTERVENTIONS:

Comparison of stained and un-stained pelvic peritoneal samples after pouring of 0.25% methylene blue into the pelvic cavity.

MEASUREMENTS AND MAIN RESULTS:

In three patients, laparoscopic examination showed minimal endometriosis. In total, 18 (9 stained and 9 un-stained) samples from the three patients were prepared for SEM; In 10 (55.6%) samples we found microstructural peritoneal destruction (in 7 out of 9 stained specimens (77.7%) and 3 out of 9 (33.4%) were un-stained). In total, 18 (9 stained and 9 un-stained) blocks from three patients were prepared for IHC study; 6 (33.3%) samples showed S-100 positive (in 4 out of 9 (44.4%) stained specimens and 2 out of 9 (22.2%) un-stained samples).

CONCLUSIONS:

In pathophysiology of CPP associated with endometriosis, ultrastructural changes can play a significant role. Under the guide of methylene blue, some destroyed areas were detected, but stained areas do not necessarily mean more microstructural peritoneal destruction.

8. VISCERA

Famine exposure

Int J Cancer. 2016 Oct 25. doi: 10.1002/ijc.30485.

A Possible Link between Famine Exposure in Early Life and Future Risk of Gastrointestinal Cancers: Implications from Age-Period-Cohort Analysis.

Xie SH¹, Lagergren J^{2,3}.

Author information

Abstract

The Chinese famine in 1958-1962 was one of the worst in human history, but its potential influence on cancer risks is uncertain. Using cancer incidence data in Shanghai, China, during 1983-2007, we calculated age-specific incidence rates of gastrointestinal cancers in birth cohorts exposed to the Chinese famine in different periods of life and a non-exposed reference cohort. Age-period-cohort regressions estimated the overall relative risks of gastrointestinal cancers in each birth cohort. A total of 212,098 new cases of gastrointestinal cancer were identified during the study period (129,233 males and 82,865 females), among whom 18,146 had esophageal cancer, 71,011 gastric cancer, 55,864 colorectal cancer, 42,751 liver cancer, 9,382 gallbladder cancer, and 14,944 had pancreatic cancer. The risk of esophageal, gastric, colorectal, and liver cancers was higher in cohorts exposed to the Chinese famine in early life than in the reference cohort, except for esophageal cancer in women. The risk of esophageal, liver, and colorectal cancers was particularly high in men exposed to famine during early childhood (0-9 years). There were no clear associations between famine exposure and the risk of pancreatic or gallbladder cancer. This study suggests an increased risk of esophageal, gastric, liver, and colorectal cancers associated with childhood exposure to the Chinese famine. These findings indicate a need for further investigations confirming the results and identifying the underlying mechanisms. The fetal origin hypothesis, also known as "Barker's hypothesis" or "thrifty phenotype hypothesis", postulates that fetal undernutrition leads to restricted fetal growth metabolic adaptations, which may result in increased risk of chronic diseases later in life^{1,2}. Famines can be seen as natural experiments that can provide unique opportunities to investigate the long-term health effects of nutritional deprivation during fetal life and early childhood. Previous famine studies have examined associations between famine exposure in early life and risks of a variety of common diseases during adulthood, including hypertension³, obesity⁴, type 2 diabetes and other metabolic disorders⁵⁻⁷, and respiratory diseases⁸. However, only a limited number of studies, mostly from Europe, have addressed the risk of cancer in adulthood associated with famine exposure in early life, and these provided inconsistent results⁹⁻¹⁵. This article is protected by copyright. All rights reserved.

IBS and carb diet

Dig Dis Sci. 2016 Nov;61(11):3255-3260. Epub 2016 Sep 16.

Patients Perceive Clinical Benefit with the Specific Carbohydrate Diet for Inflammatory Bowel Disease.

Suskind DL¹, Wahbeh G², Cohen SA³, Damman CJ⁴, Klein J², Braly K², Shaffer M^{2,5}, Lee D².
Author information

Abstract

BACKGROUND:

Recent studies suggest that dietary therapy may be effective for patients with inflammatory bowel disease (IBD), but limited published data exist on the usage and efficacy of dietary therapy.

AIM:

To evaluate the perspective of IBD patients using the specific carbohydrate diet (SCD).

METHODS:

An anonymous online survey was conducted using REDCap, a Web-based survey tool. Survey links were sent to known Web sites as well as support groups in an attempt to characterize patient utilization of the SCD and perception of efficacy of the SCD.

RESULTS:

There were 417 respondents of the online survey on the SCD with IBD. Mean age for individuals on the SCD was 34.9 ± 16.4 years. Seventy percent were female. Forty-seven percent had Crohn's disease, 43 % had ulcerative colitis, and 10 % had indeterminate colitis. Individuals perceived clinical improvement on the SCD. Four percent reported clinical remission prior to the SCD, while 33 % reported remission at 2 months after initiation of the SCD, and 42 % at both 6 and 12 months. For those reporting clinical remission, 13 % reported time to achieve remission of less than 2 weeks, 17 % reported 2 weeks to a month, 36 % reported 1-3 months, and 34 % reported greater than 3 months. For individuals who reported reaching remission, 47 % of individuals reported associated improvement in abnormal laboratory values.

CONCLUSIONS:

The SCD is utilized by many patients as a primary and adjunct therapy for IBD. Most patients perceive clinical benefit to use of the SCD.

Manipulation and diarrhea

Therapeutic effect observation on Nie-pinching the spine manipulation for infantile diarrhea due to spleen deficiency

Journal of Acupuncture and Tuina Science, 10/24/2016 Tang YL, et al. –

With the aim to observe the influence of Nie-pinching the spine manipulation on the excretory rate of urine D-xylose in the infants with diarrhea due to spleen deficiency, and to evaluate the clinical effects. In the infants with diarrhea due to spleen deficiency, chiropractics can reduce the integrals of spleen deficiency symptoms and elevate the excretory rate of urine D-xylose in order to improve the therapeutic effects by alleviating the symptoms of spleen deficiency and the absorptive function of the small intestine.

Methods

- The authors randomly divided 60 infants in conformity with the diagnostic criteria of diarrhea due to spleen deficiency into a treatment group and a control group by the random digital table, 30 cases in each group.
- In the treatment group, the infants were treated by Nie-pinching the spine manipulation and traditional infantile tuina in addition to the routine basic treatment.
- In the control group, the infants were treated by the same traditional infantile tuina in addition to the routine basic treatment.
- In the 2 groups, the infants were treated once every day, 4 weeks as a course.
- Totally, the treatment was given for a course.
- They used the symptom integrals of spleen deficiency to evaluate the improvement in the symptoms.
- To determine the excretory rate of urine D-xylose they used colorimetry.

Results

- The differences in the global score of spleen deficiency symptoms and the excretory rate of urine D-xylose in the two groups were statistically significant (all $P < 0.01$) in the comparison of the same group before and after the treatment.
- The differences in the global score of spleen deficiency symptoms and the excretory rate of urine D-xylose between the two groups were all statistically significant (both $P < 0.01$) after the treatment.

Diastolic BP

J Am Coll Cardiol. 2016 Oct 18;68(16):1713-1722. doi: 10.1016/j.jacc.2016.07.754. Epub 2016 Aug 30.

Diastolic Blood Pressure, Subclinical Myocardial Damage, and Cardiac Events: Implications for Blood Pressure Control.

McEvoy JW¹, Chen Y², Rawlings A², Hoogeveen RC³, Ballantyne CM³, Blumenthal RS⁴, Coresh J², Selvin E².

Author information

Abstract

BACKGROUND:

The optimal systolic blood pressure (SBP) treatment goal is in question, with SPRINT (Systolic Blood Pressure Intervention Trial) suggesting benefit for 120 mm Hg. However, achieving an SBP this low may reduce diastolic blood pressure (DBP) to levels that could compromise myocardial perfusion.

OBJECTIVES:

This study sought to examine the independent association of DBP with myocardial damage (using high-sensitivity cardiac troponin-T [hs-cTnT]) and with coronary heart disease (CHD), stroke, or death over 21 years.

METHODS:

The authors studied 11,565 adults from the ARIC (Atherosclerosis Risk In Communities) cohort, analyzing DBP and hs-cTnT associations as well as prospective associations between DBP and events.

RESULTS:

Mean baseline age was 57 years, 57% of patients were female, and 25% were black. Compared with persons who had DBP between 80 to 89 mm Hg at baseline (ARIC visit 2), the adjusted odds ratio of having hs-cTnT ≥ 14 ng/l at that visit was 2.2 and 1.5 in those with DBP < 60 mm Hg and 60 to 69 mm Hg, respectively. Low DBP at baseline was also independently associated with progressive myocardial damage on the basis of estimated annual change in hs-cTnT over the 6 years between ARIC visits 2 and 4. In addition, compared with a DBP of 80 to 89 mm Hg, a DBP < 60 mm Hg was associated with incident CHD and mortality, but not with stroke. The DBP and incident CHD association was strongest with baseline hs-cTnT ≥ 14 ng/l (p value for interaction < 0.001). Associations of low DBP with prevalent hs-cTnT and incident CHD were most pronounced among patients with baseline SBP ≥ 120 mm Hg.

CONCLUSIONS:

Particularly among adults with an SBP ≥ 120 mm Hg, and thus elevated pulse pressure, low DBP was associated with subclinical myocardial damage and CHD events. When titrating treatment to SBP < 140 mm Hg, it may be prudent to ensure that DBP levels do not fall below 70 mm Hg, and particularly not below 60 mm Hg.

Gastric cancer risk and fruits

Int J Cancer. 2016 Oct 19. doi: 10.1002/ijc.30477.

Fruit and Vegetable Consumption, Helicobacter pylori Antibodies, and Gastric Cancer Risk: A Pooled Analysis of Prospective Studies in China, Japan and Korea.

Wang T^{1,2}, Cai H², Sasazuki S³, Tsugane S³, Zheng W², Rin Cho E⁴, Ha Jee S⁴, Michel A⁵, Pawlita M⁵, Xiang YB⁶, Gao YT⁶, Shu XO², You WC¹, Epplein M⁷.

Author information

Abstract

Epidemiological findings on the association between fruit and vegetable consumption and gastric cancer risk remain inconsistent. The present analysis included 810 prospectively ascertained non-cardia gastric cancer cases and 1,160 matched controls from the Helicobacter pylori Biomarker Cohort Consortium, which collected blood samples, demographic, lifestyle, and dietary data at baseline. Conditional logistic regression adjusting for total energy intake, smoking, and H. pylori status, was applied to calculate odds ratios (ORs) and 95% confidence intervals (CIs) for gastric cancer risk across cohort- and sex-specific quartiles of fruit and vegetable intake. Increasing fruit intake was associated with decreasing risk of non-cardia gastric cancer (OR=0.71, 95% CI: 0.52-0.95, p-trend =0.02). Compared to low-fruit consumers infected with CagA-positive H. pylori, high-fruit consumers without evidence of H. pylori antibodies had the lowest odds for gastric cancer incidence (OR=0.12, 95% CI: 0.06-0.25), whereby the inverse association with high-fruit consumption was attenuated among individuals infected with CagA-positive H. pylori (OR=0.82, 95% CI: 0.66-1.03). To note, the small number of H. pylori negative individuals does influence this finding. We observed a weaker, non-dose-response suggestion of an inverse association of vegetable intake with non-cardia gastric cancer risk. High fruit intake may play a role in decreasing risk of non-cardia gastric cancer in Asia. This article is protected by copyright. All rights reserved.

Ulcerative colitis and skeletal muscles

Skeletal muscle depletion correlates with disease activity in ulcerative colitis and is reversed after colectomy

Clinical Nutrition, 10/21/2016 Zhang T, et al.

In this present study, the researchers intended to evaluate body composition in adult patients with ulcerative colitis (UC) and the associations of body composition with disease activity and surgical intervention. In UC patients, sarcopenia is associated with high disease activity and poor clinical outcome. Medical treatment and colectomy have positive effects on sarcopenia and skeletal muscle depletion.

Methods

- In this study, the researchers included 99 patients with UC, 105 with Crohn's disease (CD) and 60 controls.
- They evaluated skeletal muscle area (SMA), visceral fat area (VFA) and subcutaneous fat area (SFA) of the third lumbar vertebrae by abdominal computed tomography.
- In UC patients, the effects of medical therapy and surgery on body composition were determined.

Results

- In UC patients, sarcopenia was more frequent (27.3%) than in controls (8.3%) but less frequent than in CD patients (59.0%).
- In UC patients with high (≥ 6) than low (< 6) Mayo score, the prevalence of sarcopenia was significantly higher (33.8% vs. 4.5%, $p < 0.001$), and SMA (144.26 vs. 182.32 cm^2 , $p < 0.001$), skeletal muscle index (SMI) (52.22 vs. 65.52 cm^2/m^2 , $p < 0.001$) significantly lower, but SFA and VFA were similar.
- Following medical treatment or surgery, the prevalence of sarcopenia and alterations in body composition were reversed along with UC disease activity.
- In UC patients, SMA and SMI correlated significantly with disease activity.
- Multivariate analysis demonstrated that sarcopenia (odds ratio, 8.49; 95% confidence interval, 1.80-40.10; $p = 0.007$) was a negative predictor of high Mayo score in UC patients.
- As per the outcomes, sarcopenic patients with UC had high probability of need for colectomy in Kaplan-Meier survival curves.

IBS and restless leg syndrome**Impact of restless legs syndrome in patients with inflammatory bowel disease on sleep, fatigue, and quality of life**

International Journal of Colorectal Disease, 10/20/2016 Schindlbeck KA, et al.

In this study, the authors intended to investigate the effect of restless legs syndrome in patients with inflammatory bowel disease on sleep, fatigue, mood, cognition, and quality of life. In inflammatory bowel disease patients, sleep disorders including longer sleep latency, shorter sleep duration, and fatigue are characteristic symptoms of restless legs syndrome resulting in worse health-related quality of life. Hence, clinicians treating patients with inflammatory bowel disease ought to be alert for restless legs syndrome.

Methods

- The authors prospectively evaluated 2 groups of inflammatory bowel disease patients, with and without restless legs syndrome for sleep disorders, fatigue, daytime sleepiness, depression, anxiety, and health-related quality of life.
- Also, assessed global cognitive function, executive function, attention, and concentration in both groups.
- They evaluated disease activity and duration of inflammatory bowel disease as well as current medication by interview.
- They matched inflammatory bowel disease patients with and without restless legs syndrome for age, education, severity, and duration of their inflammatory bowel disease.

Results

- As compared to inflammatory bowel disease patients without restless legs syndrome, patients with inflammatory bowel disease and clinically relevant restless leg syndrome suffered significantly more frequent from sleep disturbances including sleep latency and duration, more fatigue, and worse health-related quality of life.
- Among groups, affect and cognitive function including cognitive flexibility, attention, and concentration demonstrated no significant differences indicating to be not related to restless legs syndrome

Oral microbes different in HA sufferers**Migraine sufferers have more nitrate-reducing microbes in their mouths**

UC San Diego News, 10/20/2016

Researchers at University of California San Diego School of Medicine have found that the mouths of migraine sufferers harbor significantly more microbes with the ability to modify nitrates than people who do not get migraine headaches. The study was published October 18 by the journal *mSystems*.

“There is this idea out there that certain foods trigger migraines — chocolate, wine and especially foods containing nitrates,” said first author Antonio Gonzalez, a programmer analyst in the laboratory of Rob Knight, PhD, professor and director of the Center for Microbiome Innovation at UC San Diego and senior author on the study. “We thought that perhaps there are connections between what people are eating, their microbiomes and their experiences with migraines.”

Using publicly available data from the American Gut Project, a crowd-funded citizen science effort managed by the Knight lab, Gonzalez and colleague Embriette Hyde, PhD, sequenced bacteria found in 172 oral samples and 1,996 fecal samples from healthy participants. The participants had previously filled out surveys indicating whether they suffered from migraines.

The bacterial gene sequencing found that bacterial species were found in different abundances between migraineurs and non-migraineurs. In terms of bacterial community composition, the team did not find huge differences in either fecal or oral samples from migraineurs compared to non-migraineurs.

The team then used a bioinformatic tool called PICRUSt to analyze which genes were likely to be present in the two different sets of samples, given the bacterial species present. In fecal samples, they found a slight but statistically significant increase in the abundance of genes that encode nitrate, nitrite and nitric oxide-related enzymes in migraineurs. In oral samples, these genes were significantly more abundant in migraineurs.

“We know for a fact that nitrate-reducing bacteria are found in the oral cavity,” said Hyde, project manager for the American Gut Project and assistant project scientist in the Knight lab. “We definitely think this pathway is advantageous to cardiovascular health. We now also have a potential connection to migraines, though it remains to be seen whether these bacteria are a cause or result of migraines, or are indirectly linked in some other way.”

Gonzalez and Hyde said the next steps will be to look at more defined groups of patients, separated into the handful of different types of migraines. Researchers can then determine if their oral microbes really do express those nitrate-reducing genes, measure their levels of circulating nitric oxide and see how they correlate with migraine status

10 A. CERVICAL SPINE**Changes in idiopathic neck pain**

Arch Phys Med Rehabil. 2016 Oct 19. pii: S0003-9993(16)31157-1. doi: 10.1016/j.apmr.2016.09.121.

Sensorimotor control in individuals with idiopathic neck pain and healthy individuals: A systematic review and meta-analysis.

de Zoete RM¹, Osmotherly PG², Rivett DA², Farrell SF³, Snodgrass SJ².
Author information

Abstract

OBJECTIVE:

To (1) identify reported tests used to assess sensorimotor control in individuals with idiopathic neck pain and (2) investigate whether these test can quantify differences between individuals with idiopathic neck pain and healthy individuals.

DATA SOURCES:

Databases AMED, CINAHL, Cochrane Central Register of Controlled Trials, EMBASE, MEDLINE, PEDro, SCOPUS and SportDiscus.

STUDY SELECTION:

Studies reporting sensorimotor outcomes in individuals with idiopathic neck pain or healthy individuals were identified. 1677 records were screened independently by two researchers for eligibility: 43 studies were included in the review with 30 of these studies included in the meta-analysis.

DATA EXTRACTION:

Methodological quality was determined using the Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies. Data were extracted using a standardised extraction table.

DATA SYNTHESIS:

Sensorimotor control was most commonly assessed by joint position error and postural sway. Pooled means for joint position error following cervical rotation in individuals with neck pain (range 2.2-9.8°) differed significantly ($p=0.04$) compared to healthy individuals (range 1.66-5.1°). Postural sway, eyes open, ranged from 4.85-10.5cm² (neck pain) and 3.5-6.6cm² (healthy) ($p=0.16$), and for eyes closed, 2.51-16.6cm² (neck pain) and 2.74-10.9cm² (healthy) ($p=0.30$). Individual studies, but not meta-analysis, demonstrated differences between neck pain and healthy groups for postural sway. Other test conditions and other tests were not sufficiently investigated to enable pooling of data.

CONCLUSION:

The findings from this review suggest sensorimotor control testing may be clinically useful in individuals with idiopathic neck pain. However, results should be interpreted with caution because clinical differences were small and therefore further cross-sectional research with larger samples is needed to determine the magnitude of the relationship between sensorimotor control and pain and assess any potential clinical significance.

13. CRANIUM/TMJ

Opioids and sleep disorders

Chest. 2016 Oct;150(4):934-944. doi: 10.1016/j.chest.2016.05.022. Epub 2016 Jun 1.

Opioids and Sleep-Disordered Breathing.

Van Ryswyk E¹, Antic NA².

Author information

Abstract

Opioid use for chronic pain analgesia, particularly chronic noncancer pain, has increased greatly since the late 1990s, resulting in an increase in opioid-associated morbidity and mortality.

A clear link between opioid use and sleep-disordered breathing (SDB) has been established, with the majority of chronic opioid users being affected by the condition, and dose-dependent severity apparent for some opioids. More evidence is currently needed on how to effectively manage opioid-induced SDB.

This review summarizes the current state of knowledge relating to management of patients undergoing chronic opioid therapy who have SDB. Initial management of these patients requires a thorough biopsychosocial assessment of their need for opioid therapy, consideration of reduction or cessation of the opioid if possible, and analysis of alternative therapies for treatment of their pain. If opioid therapy must be continued, then management of the associated SDB may be important. Several small- to medium-scale studies have examined the efficacy of noninvasive ventilation, particularly adaptive servo-ventilation (ASV) for the treatment of opioid-associated SDB.

This research is particularly important because opioids predispose predominantly to central sleep apnea and also, to a lesser extent, OSA. Generally, these studies have found positive results in treating opioid-associated SDB with ASV in terms of improving outcome measures such as central apnea index and the apnea-hypopnea index. Larger studies that measure longer term health outcomes, patient sleepiness, and compliance are needed, however. Registries of health outcomes of ASV-treated patients may assist with future treatment planning.

Oral health

Int J Cancer. 2016 Oct 25. doi: 10.1002/ijc.30486.

Periodontal disease, tooth loss, and colorectal cancer risk: Results from the Nurses' Health Study.

Momen-Heravi F1,2,3, Babic A2,4, Tworoger SS1,2, Zhang L5, Wu K6, Smith-Warner SA1,6, Ogino S1,4,7, Chan AT8,9, Meyerhardt J4, Giovannucci E1,2,6, Fuchs C4, Cho E1,10,11, Michaud DS11,12, Stampfer MJ1,2,6, Yu YH13, Kim D13, Zhang X14.
Author information

Abstract

Periodontal diseases including tooth loss might increase systemic inflammation, lead to immune dysregulation, and alter gut microbiota, thereby possibly influencing colorectal carcinogenesis. Few epidemiological studies have examined the association between periodontal diseases and colorectal cancer (CRC) risk. We collected information on the periodontal disease (defined as history of periodontal bone loss) and number of natural teeth in the Nurses' Health Study. A total of 77,443 women were followed since 1992. We used Cox proportional hazard models to calculate multivariable hazard ratios (HRs) and 95% confidence intervals (95% CIs) after adjustment for smoking and other known risk factors for CRC. We documented 1,165 incident CRC through 2010. Compared to women with 25-32 teeth, the multivariable HR (95% CI) for CRC for women with < 17 teeth was 1.20 (1.04-1.39). With regard to tumor site, the HRs (95% CIs) for the same comparison were 1.23 (1.01-1.51) for proximal colon cancer, 1.03 (0.76-1.38) for distal colon cancer, and 1.48 (1.07-2.05) for rectal cancer. Additionally, compared to those without periodontal disease, HRs for CRC were 0.91 (95% CI 0.74-1.12) for periodontal disease, and 1.22 (95% CI 0.91-1.63) when limited to moderate to severe periodontal disease. The results were not modified by smoking status, body mass index, or alcohol consumption. Women with fewer teeth, possibly moderate or severe periodontal disease, might be at a modest increased risk of developing CRC, suggesting a potential role of oral health in colorectal carcinogenesis.

TMJ exercise

Clin Rehabil. 2016 Oct 3. pii: 0269215516672275.

The effectiveness of exercise therapy for temporomandibular dysfunction: A systematic review and meta-analysis.

Dickerson SM¹, Weaver JM¹, Boyson AN¹, Thacker JA¹, Junak AA¹, Ritzline PD¹, Donaldson MB².

Author information

Abstract

OBJECTIVE:

To investigate the effectiveness of exercise therapy on pain, function, and mobility outcomes in patients with temporomandibular joint dysfunction.

STUDY DESIGN:

Systematic review with meta-analysis.

METHODS:

A systematic review and meta-analysis undertaken following Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Studies that met the inclusion criteria: (1) randomized controlled trials; (2) a population with the diagnosis of temporomandibular joint dysfunction; and (3) interventions that included exercise therapy were considered for review. When studies demonstrated homogeneity on outcome measures, the mean differences or standardized mean differences with 95% confidence interval were calculated and pooled in a meta-analysis for pooled synthesis.

RESULTS:

Six articles with a total of 419 participants were included in the review and only four studies were included in the meta-analysis. Mobility and mixed exercise therapy approaches appear to be the most common exercise approaches utilized for management of temporomandibular joint dysfunction. Exercise therapy and the associated dosage provide moderate short-term and varying long-term benefits in reduction of pain and improvement of range of motion of the in patients with temporomandibular joint dysfunction.

CONCLUSION:

Included studies suggest a mobility or a mixed approach to exercise therapies have impact on reducing pain, significant impact for increasing range of motion, but lack a significant impact for functional improvement.

LEVEL OF EVIDENCE:

Therapy, level 1a-

Periodontal disease

J Periodontal Res. 2016 Oct 13. doi: 10.1111/jre.12419.

Association of peripheral arterial disease with periodontal disease: analysis of inflammatory cytokines and an acute phase protein in gingival crevicular fluid and serum.

Çalapkorur MU¹, Alkan BA², Tasdemir Z¹, Akcali Y³, Saatçi E⁴.

Author information

Abstract

BACKGROUND AND OBJECTIVE:

Inflammation is a common feature of both peripheral arterial disease (PAD) and periodontal disease. The aim of this study was to evaluate the relationship between PAD and periodontal disease by examining the levels of inflammatory cytokines (pentraxin 3 and interleukin 1 β) and high sensitive C-reactive protein from gingival crevicular fluid and serum.

MATERIAL AND METHODS:

A total of 60 patients were included in this cross-sectional study. Patients were divided into two groups based on ankle-brachial index values: with PAD (test group) and non-PAD (control group). Demographic evaluations, clinical periodontal examinations and biochemical analysis for pentraxin 3, interleukin 1 β and high sensitive C-reactive protein were performed to compare the two groups.

RESULTS:

There were no significant differences with respect to gender, age, body mass index, or smoking history (duration, amount) between the two groups ($p > 0.05$). There were no significant differences between the two groups in terms of clinical periodontal parameters ($p > 0.05$). Neither gingival crevicular fluid nor serum levels of the cytokines showed differences between the two groups. Logistic regression analysis revealed that, after adjusting for confounding factors (age, gender, diabetes, hypertension and body mass index), periodontitis raised the odds ratio for having PAD to 5.842 (95% confidence interval: 1.558-21.909).

CONCLUSION:

Although there were no significant differences with respect to clinical periodontal parameters and biochemical analyses between the study group and control, periodontitis did raise the odds ratio for having PAD. To clarify this possible relationship, future prospective studies are needed.

Gum inflammation

J Dent Res. 2016 Jul 28. pii: 0022034516661142.

Prediction of Periodontal Inflammation via Metabolic Profiling of Saliva.

Kuboniwa M1, Sakanaka A2, Hashino E3, Bamba T4, Fukusaki E5, Amano A2.

Author information

Abstract

Periodontal disease is characterized by chronic inflammation in subgingival areas, where a vast array of inflammation-associated metabolites are likely produced from tissue breakdown, increased vascular permeability, and microbial metabolism and then eventually show a steady flow into saliva. Thus, prolonged periodontal inflammation is a key feature of disease activity. Although salivary metabolomics has drawn attention for its potential use in diagnosis of periodontal disease, few authors have used that to investigate periodontal inflammation detection. In this pilot study, the authors explored the use of salivary metabolites to reflect periodontal inflammation severity with a recently proposed parameter-periodontal inflamed surface area (PISA)-used to quantify the periodontal inflammatory burden of individual patients with high accuracy. Following PISA determination, whole saliva samples were collected from 19 subjects before and after removal of supragingival plaque and calculus (debridement) with an ultrasonic scaler to assess the influence of the procedure on salivary metabolic profiles. Metabolic profiling of saliva was performed with gas chromatography coupled to time-of-flight mass spectrometry, followed by multivariate regression analysis with orthogonal projections to latent structures (OPLS) to investigate the relationship between PISA and salivary metabolic profiles. Sixty-three metabolites were identified. OPLS analysis showed that postdebridement saliva provided a more refined model for prediction of PISA than did predebridement samples, which indicated that debridement may improve detection of metabolites eluted from subgingival areas in saliva, thus more accurately reflecting the pathophysiology of periodontitis. Based on the variable importance in the projection values obtained via OPLS, 8 metabolites were identified as potential indicators of periodontal inflammation, of which the combination of cadaverine, 5-oxoproline, and histidine yielded satisfactory accuracy (area under the curve = 0.881) for diagnosis of periodontitis. The authors' findings identified potential biomarkers that may be useful for reflecting the severity of periodontal inflammation as part of monitoring disease activity in periodontitis patients.

Maxillary expander

Am J Orthod Dentofacial Orthop. 2016 Oct;150(4):564-574. doi: 10.1016/j.ajodo.2016.05.006.

Dentoskeletal outcomes of a rapid maxillary expander with differential opening in patients with bilateral cleft lip and palate: A prospective clinical trial.

Garib D1, Lauris RC2, Calil LR3, Alves AC3, Janson G4, De Almeida AM2, Cevidanes LH5, Lauris JR6.

Author information

Abstract

INTRODUCTION: The purpose of this 2-arm parallel study was to evaluate the dentoskeletal effects of rapid maxillary expansion with differential opening (EDO) compared with the hyrax expander in patients with complete bilateral cleft lip and palate.

METHODS: A sample of patients with complete bilateral cleft lip and palate was prospectively and consecutively recruited. Eligibility criteria included participants in the mixed dentition with lip and palate repair performed during early childhood and maxillary arch constriction with a need for maxillary expansion before the alveolar bone graft procedure. The participants were consecutively divided into 2 study groups. The experimental and control groups comprised patients treated with rapid maxillary expansion using EDO and the hyrax expander, respectively. Cone-beam computed tomography examinations and digital dental models of the maxillary dental arches were obtained before expansion and 6 months postexpansion. Standardized cone-beam computed tomography coronal sections were used for measuring maxillary transverse dimensions and posterior tooth inclinations. Digital dental models were used for assessing maxillary dental arch widths, arch perimeters, arch lengths, palatal depths, and posterior tooth inclinations. Blinding was used only during outcome assessment. The chi-square test was used to compare the sex ratios between groups ($P < 0.05$). Intergroup comparisons were performed using independent t tests with the Bonferroni correction for multiple tests.

RESULTS: Fifty patients were recruited and analyzed in their respective groups. The experimental group comprised 25 patients (mean age, 8.8 years), and the control group comprised 25 patients (mean age, 8.6 years). No intergroup significant differences were found for age, sex ratio, and dentoskeletal variables before expansion. No significant differences were found between the EDO and the hyrax expander groups regarding skeletal changes. The EDO promoted significantly greater increases of intercanine width (difference, 3.63 mm) and smaller increases in canine buccal tipping than the conventional hyrax expander. No serious harm was observed other than transitory variable pressure sensations on the maxillary alveolar process in both groups.

CONCLUSIONS: The EDO produced skeletal changes similar to the conventional hyrax expander. The differential expander is an adequate alternative to conventional rapid maxillary expanders when there is need for greater expansion in the maxillary dental arch anterior region.

REGISTRATION: This trial was not registered.

PROTOCOL: The protocol was not published before trial commencement.

FUNDING: This study received financial support from FAPESP (process number 2009/17622-9). As a possible conflict of interest, a patent with an EDO was submitted in March 2011 to the National Institute of Industry Property and is still in process. However, we believe that this is a natural step of translational research (bench-to-bedside), and we guarantee that the scientific results are true.

Prog Orthod. 2016 Dec;17(1):32. Epub 2016 Oct 17.

Facial dimensions

Prog Orthod. 2016 Dec;17(1):32. Epub 2016 Oct 17.

Three-dimensional mapping of cortical bone thickness in subjects with different vertical facial dimensions.

Sadek MM¹, Sabet NE², Hassan IT².

Author information

Abstract

BACKGROUND:

The purpose of this study was to determine differences in cortical bone thickness among subjects with different vertical facial dimensions using cone beam computed tomography (CBCT).

METHODS:

From 114 pre-treatment CBCT scans, 48 scans were selected to be included in the study. CBCT-synthesized lateral cephalograms were used to categorize subjects into three groups based on their vertical skeletal pattern. Cortical bone thickness (CBT) at two vertical levels (4 and 7 mm) from the alveolar crest were measured in the entire tooth-bearing region in the maxilla and mandible.

RESULTS:

Significant group differences were detected with high-angle subjects having significantly narrower inter-radicular CBT at some sites as compared to average- and low-angle subjects.

CONCLUSIONS:

Inter-radicular cortical bone is thinner in high-angle than in average- or low-angle subjects in few selected sites at the vertical height in which mini-implants are commonly inserted for orthodontic anchorage

14. HEADACHES

Trigeminal nerve

Cephalalgia. 2016 Oct 5. pii: 0333102416673204.

Different processing of meningeal and cutaneous pain information in the spinal trigeminal nucleus caudalis.

Melin C¹, Jacquot F², Vitello N², Dallel R¹, Artola A³.

Author information

Abstract

INTRODUCTION:

Within superficial trigeminal nucleus caudalis (Sp5C) (laminae I/II), meningeal primary afferents project exclusively to lamina I, whereas nociceptive cutaneous ones distribute in both lamina I and outer lamina II. Whether such a relative absence of meningeal inputs to lamina II represents a fundamental difference from cutaneous pathways in the central processing of sensory information is still unknown.

METHODS:

We recorded extracellular field potentials in the superficial Sp5C of anaesthetised rats evoked by electrically stimulating the dura mater, to selectively assess the synaptic transmission between meningeal primary afferents and second-order Sp5C neurons, the first synapse in trigeminovascular pathways. We tested the effect of systemic morphine and local glycinergic and GABA_Aergic disinhibition.

RESULTS:

Meningeal stimulation evokes two negative field potentials in superficial Sp5C. The conduction velocities of the activated primary afferents are within the A δ - and C-fibre ranges. Systemic morphine specifically suppresses meningeal C-fibre-evoked field potentials, and this effect is reversed by systemic naloxone. Segmental glycinergic or GABA_Aergic disinhibition strongly potentiates meningeal C-fibre-evoked field potentials but not A δ -fibre ones. Interestingly, the same segmental disinhibition conversely potentiates cutaneous A δ -fibre-evoked field potentials and suppresses C-fibre ones.

CONCLUSION:

These findings reveal that the different anatomical organization of meningeal and cutaneous inputs into superficial Sp5C is associated with a different central processing of meningeal and cutaneous pain information within Sp5C. Moreover, they suggest that the potentiation upon local disinhibition of the first synapse in trigeminovascular pathways may contribute to the generation of headache pain.

Brain changes in HA's

Magn Reson Imaging. 2016 Oct 14. pii: S0730-725X(16)30162-X. doi: 10.1016/j.mri.2016.10.015.

Abnormal Dynamics of Cortical Resting State Functional Connectivity in Chronic Headache Patients.

Wang Z¹, Yang Q², Chen LM³.
Author information

Abstract

The goals of this study are to characterize the temporal dynamics of inter-regional connectivity of the brain in chronic headache (CH) patients versus their age/gender matched controls (CON_{CH}, n=28 pairs), and to determine whether dynamic measures reveal additional features to static functional connectivity and correlate with psychometric scores.

Cortical thickness and inter-regional resting state fMRI connectivity were quantified and compared between CH and CON_{CH} groups. Six cortical regions of interest (ROI) pairs that exhibited correlated cortical thickness and static functional connectivity abnormalities were selected for temporal dynamic analysis. Two methods were used: temporal sliding-window (SW) and wavelet transformation coherence (WTC). SW analyses using three temporal windows of 30, 60, 120s revealed that all six ROI pairs of CH exhibited higher percentage of strong connectivity (high r values), and smaller fast Fourier transform (FFT) amplitudes at a very low frequency range (i.e., 0.002-0.01Hz), compared to those of CON_{CH}. These features were particularly prevalent in the 120s window analysis. Less variable dynamic fluctuation (i.e., smaller standard deviation of r values) was identified in two out of six ROI pairs in CH. WTC analysis revealed that time-averaged coherence was generally greater in CH than CON_{CH} between wavelet decomposition scales 20 to 55 (0.018-0.05Hz), and was statistically significant in three out of six ROI pairs. Together, the most robust and significant differences in temporal dynamics between CH and CON_{CH} were detected in two ROI pairs: left medial-orbitofrontal - left posterior-cingulate and left medial-orbitofrontal - left inferior-temporal. The high degrees of sleep disturbance (high PSQI score), depression (high HRSD score) and fatigue (low SF-36 score) were associated with high degree of inter-regional temporal coherence in CH.

In summary, these dynamic functional connectivity (dFC) measures uncovered a temporal "lock-down" condition in a subset of ROI pairs, showing static functional connectivity changes in CH patients. This study provides important evidence for the presence of associated psychological wellbeing and abnormal temporal dynamics in between specific cortical regions in CH patients.

HA's and oral microbes

Migraine sufferers have more nitrate-reducing microbes in their mouths

UC San Diego News, 10/20/2016

Researchers at University of California San Diego School of Medicine have found that the mouths of migraine sufferers harbor significantly more microbes with the ability to modify nitrates than people who do not get migraine headaches. The study was published October 18 by the journal *mSystems*.

“There is this idea out there that certain foods trigger migraines — chocolate, wine and especially foods containing nitrates,” said first author Antonio Gonzalez, a programmer analyst in the laboratory of Rob Knight, PhD, professor and director of the Center for Microbiome Innovation at UC San Diego and senior author on the study. “We thought that perhaps there are connections between what people are eating, their microbiomes and their experiences with migraines.”

Using publicly available data from the American Gut Project, a crowdfunded citizen science effort managed by the Knight lab, Gonzalez and colleague Embriette Hyde, PhD, sequenced bacteria found in 172 oral samples and 1,996 fecal samples from healthy participants. The participants had previously filled out surveys indicating whether they suffered from migraines.

The bacterial gene sequencing found that bacterial species were found in different abundances between migraineurs and non-migraineurs. In terms of bacterial community composition, the team did not find huge differences in either fecal or oral samples from migraineurs compared to non-migraineurs.

The team then used a bioinformatic tool called PICRUSt to analyze which genes were likely to be present in the two different sets of samples, given the bacterial species present. In fecal samples, they found a slight but statistically significant increase in the abundance of genes that encode nitrate, nitrite and nitric oxide-related enzymes in migraineurs. In oral samples, these genes were significantly more abundant in migraineurs.

“We know for a fact that nitrate-reducing bacteria are found in the oral cavity,” said Hyde, project manager for the American Gut Project and assistant project scientist in the Knight lab. “We definitely think this pathway is advantageous to cardiovascular health. We now also have a potential connection to migraines, though it remains to be seen whether these bacteria are a cause or result of migraines, or are indirectly linked in some other way.”

Gonzalez and Hyde said the next steps will be to look at more defined groups of patients, separated into the handful of different types of migraines. Researchers can then determine if their oral microbes really do express those nitrate-reducing genes, measure their levels of circulating nitric oxide and see how they correlate with migraine status

18. CLAVICLE

Resection of clavicle

J Shoulder Elbow Surg. 2016 Oct 7. pii: S1058-2746(16)30235-X. doi: 10.1016/j.jse.2016.07.008.

Minimum 2-year outcomes and return to sport following resection arthroplasty for the treatment of sternoclavicular osteoarthritis.

Katthagen JC¹, Tahal DS¹, Menge TJ¹, Horan MP¹, Millett PJ².
 Author information

Abstract

HYPOTHESIS:

The aim of this study was to assess the effect of open resection arthroplasty for osteoarthritis of the sternoclavicular (SC) joint on pain levels, functional outcomes, and return to sport.

METHODS:

Patients from a single surgeon's practice who underwent open resection arthroplasty (maximum 10-mm resection) for SC osteoarthritis or prearthritic changes between November 2006 and November 2013 were retrospectively reviewed. This was an outcomes study with prospectively collected data. Preoperative and postoperative American Shoulder and Elbow Surgeons score, Quick Disabilities of the Arm, Shoulder, and Hand score, Single Assessment Numeric Evaluation score, several pain scores, and level of sport intensity were assessed.

RESULTS:

Seventeen SC joints in 16 patients (9 female, 7 male) met inclusion criteria. Mean age at time of surgery was 41.1 years (range, 12-66 years). One patient refused participation in the study. Three SC joint resections (17.7%) required SC joint revision surgery. Minimum 2-year outcomes data were available for 11 of the remaining 13 SC joints (84.6%). The mean time to follow-up was 3.3 years (range, 2.0-8.8 years). Pain at its worst ($P = .026$), pain at competition ($P = .041$), the Quick Disabilities of the Arm, Shoulder, and Hand score ($P = .034$), and the ability to sleep on the affected shoulder ($P = .038$) showed significant improvement postoperatively. The average postoperative American Shoulder and Elbow Surgeons score was 83.3. The level of sports participation ($P = .042$) as well as strength and endurance when participating in sport ($P = .039$) significantly increased postoperatively.

CONCLUSION:

Resection arthroplasty of the medial end of the clavicle in patients with osteoarthritis of the SC joint without instability results in pain reduction, functional improvement, and a high rate of return to sport at midterm follow-up.

20 A. ROTATOR CUFF

Regeneration of muscle weakness

Bone Joint J. 2016 Oct;98-B(10):1389-1394.

Muscle regeneration following repair of the rotator cuff.

Butt U¹, Rashid MS², Temperley D³, Crank S³, Birch A³, Freemont AJ⁴, Trail IA³.

Author information

Abstract

AIMS:

The aim of this study was to analyse human muscle tissue before and after rotator cuff repair to look for evidence of regeneration, and to characterise the changes seen in the type of muscle fibre.

PATIENTS AND METHODS:

Patients were assessed pre-operatively and one year post-operatively using the Oxford Shoulder Score (OSS) and MRI. The cross-sectional area and distribution of the type of muscle fibre were assessed on biopsies, which were taken at surgery and one year post-operatively. Paired samples from eight patients were analysed. There were three men and five women with a mean age of 63 years (50 to 73).

RESULTS:

All but one patient showed improvement in OSS ($p = 0.004$). The mean increase in the cross-sectional area of the muscle was $1220 \mu\text{m}^2$ (-801 to 3712; $p = 0.03$). There was a reduction of type 2a fibres ($p = 0.02$). A clear relationship could not be seen between the MRI findings and the histological appearances.

CONCLUSION:

This is the first study to provide evidence that atrophy of the supraspinatus muscle is reversible. Changes in the types of fibre are discussed. MRI assessment of muscle atrophy may not be fully representative of myofibre atrophy. Cite this article: Bone Joint J 2016;98-B:1389-94.

21. ADHESIVE CAPSULITIS

Injections

Clinical efficacy of hydrodistention with joint manipulation under interscalene block compared with intra-articular corticosteroid injection for frozen shoulder: A prospective randomized controlled study

Journal of Shoulder and Elbow Surgery, 10/20/2016Mun SW, et al.

ABSTRACTS

Researchers held the comparison between the clinical efficacy of hydrodistention with joint manipulation under an interscalene block with that of intra-articular corticosteroid injection. Results suggest the efficacy of combined hydrodistention and joint manipulation under an interscalene block in earlier pain relief and restoration of shoulder range of motion and function compared with single intra-articular corticosteroid injection in patients with primary frozen shoulder.

32 A. KNEE/ACL

Need surgery?

Int Orthop. 2016 Oct 3.

Long-term outcome of anterior cruciate ligament tear without reconstruction: a longitudinal prospective study.

Konrads C¹, Reppenhagen S², Belder D², Goebel S², Rudert M², Barthel T².
 Author information

Abstract

PURPOSE:

To analyse subjective and objective long-term outcomes of patients with anterior cruciate ligament (ACL)-deficient knees and limited demands regarding sportive activities. This subgroup of patients might be well-treated without ligament reconstruction.

METHODS:

We included 303 patients with unilateral tears of the ACL and conservative treatment into a prospective study. Mean age at injury was 33.8 (min. 18, max. 66) years. Follow-up was 27.1 (min. 21.3, max. 31.5) years. Follow-up examinations were conducted 12 and 27 years after injury. At the last follow-up we analysed 50 patients completely. To evaluate clinical and radiological outcomes we used the Lysholm score, Tegner activity scale, visual analogue scale for pain (VAS-pain), KOOS and Sherman score.

RESULTS:

Subjective outcome (Lysholm score and VAS-pain scale) improved between the 12th and 27th year after anterior cruciate ligament tear. At the same time activity level (Tegner activity scale) decreased. Also, arthritis (Sherman score) worsened over time. Twenty-seven years after injury, 90 % of the patients rated their ACL-deficient knee as normal or almost normal; 10 % of the patients rated it as abnormal. The findings of this study show that there is a subgroup of patients with ACL tears who are well treated with physiotherapy alone, not reconstructing the ligament. Also, other authors found this correlation between activity level reduction and better subjective outcome.

CONCLUSIONS:

Conservative treatment of an ACL tear is a good treatment option for patients with limited demands regarding activity. Patient age, sportive activities and foremost subjective instability symptoms in daily life should be considered when deciding for or against ACL reconstruction.

Female soccer and reinjury rate

Am J Sports Med. 2016 Oct;44(10):2492-2498. Epub 2016 Jun 3.

Are Female Soccer Players at an Increased Risk of Second Anterior Cruciate Ligament Injury Compared With Their Athletic Peers?

Allen MM¹, Pareek A¹, Krych AJ¹, Hewett TE¹, Levy BA¹, Stuart MJ¹, Dahm DL².
Author information

Abstract

BACKGROUND:

Female soccer players have a well-known risk for anterior cruciate ligament (ACL) injury, but few studies have reported on second ACL injuries in this population.

PURPOSE:

To (1) report the rates of subsequent ACL injury (ipsilateral graft rupture or contralateral tear) in competitive female soccer players, (2) compare these rates with those of other female athletes of similar competitive level, (3) determine risk factors for second ACL injury, and (4) report clinical outcome scores in this population.

STUDY DESIGN:

Cohort study; Level of evidence, 3.

METHODS:

The medical records at a single institution were reviewed for female patients who were injured during a competitive athletic event and treated with primary ACL reconstruction (ACLR) between 1998 and 2013. Patients were followed for a mean of 68.8 months postoperatively (range, 24-115.2 months). Clinical outcome was obtained via Lysholm and International Knee Documentation Committee (IKDC) scores. Soccer players were matched 1:1 to non-soccer athletes for age, activity level, and graft type.

RESULTS:

A total of 180 female ACLR patients with a mean \pm SD age of 19.6 ± 6.9 years met the study inclusion and exclusion criteria (90 soccer players and 90 non-soccer players). Soccer players sustained more second ACL injuries, including both graft failures (11% vs 1%; $P < .01$) and contralateral ACL tears (17% vs 4%; $P < .01$), compared with non-soccer players. Of the 67 patients who returned to soccer after ACLR (mean age, 17.5 years; range, 13-27 years), significantly more had graft tears compared with those who did not return to soccer (15% vs 0%, respectively; $P = .04$); however, the difference in contralateral ACL tears (19% for returning players vs 9% for those who did not return; $P = .34$) was not significant. Relatively older age (odds ratio, 1.5 per year; $P = .03$) was a significant risk factor for ACL graft tear but not for contralateral ACL injury. Both groups had similar mean Lysholm (96 vs 95) and IKDC scores (95 vs 96) at final follow-up.

CONCLUSION:

Twenty-eight percent of all female soccer players and 34% of those players who returned to soccer had a second ACL tear. Soccer players had an increased rate of both graft tear and contralateral ACL injury compared with similar non-soccer athletes. Older age and return to soccer were significant risk factors for graft rupture.

33. MENISCUS

X-ray analysis of cartilage

Valgus stress radiographs predict lateral compartment cartilage thickness but not cartilage degeneration in varus osteoarthritis

Wenzel Waldstein Tom Schmidt-Braeking Giorgio Perino Maximilian Kasperek Reinhard Windhager Friedrich Boettner

Background

Intact cartilage in the lateral compartment is an important requirement for medial unicompartmental knee arthroplasty. This study sought to determine how measurements of joint space width in the lateral compartment on valgus stress radiographs compare to cartilage thickness as measured with a precise needle test, and whether cartilage thickness is a predictor of cartilage degeneration.

Methods

A consecutive series of 100 knees undergoing total knee replacement for end-stage varus osteoarthritis was studied. Twenty-eight knees were retrospectively excluded because not all data was available, leaving 72 knees (61 patients; mean age 67 years (49–87)). On calibrated valgus stress radiographs, lateral-compartment joint space width was measured. During surgery, osteochondral samples of the distal lateral femur and the lateral tibia plateau were harvested. Cartilage thickness and histology was assessed. Cartilage thickness of tibia and femur was defined as lateral-compartment cartilage thickness.

Results

Lateral-compartment joint space width on valgus stress radiographs and lateral-compartment cartilage thickness correlated well ($r_s=0.671$, $p<0.001$). However, no correlation of cartilage histology according to the osteoarthritis cartilage histopathology assessment system, and cartilage thickness on the lateral tibia plateau ($r_s=-0.060$, $p=0.614$) and cartilage thickness on the distal lateral femur ($r_s=-0.128$, $p=0.282$) was observed.

Conclusion

Valgus stress radiographs can assess combined cartilage thickness in the lateral compartment of the knee. Cartilage thickness, however, is a poor predictor of cartilage degeneration.

Keywords: valgus stress radiograph, cartilage, preoperative assessment, unicompartmental knee arthroplasty

Polyurethane scaffold to repair defects

Am J Sports Med. 2016 Oct;44(10):2615-2621. Epub 2016 Jul 18.

Treatment of Painful, Irreparable Partial Meniscal Defects With a Polyurethane Scaffold: Midterm Clinical Outcomes and Survival Analysis.

Dhollander A¹, Verdonk P², Verdonk R³.

Author information

Abstract

BACKGROUND:

A biodegradable polyurethane scaffold was designed to fulfill a challenging clinical need in the treatment of patients with painful, irreparable partial meniscal defects.

HYPOTHESIS:

The use of an acellular polyurethane scaffold for new tissue generation in irreparable, partial meniscal defects provides both midterm pain relief and improved functionality.

STUDY DESIGN:

Case series; Level of evidence, 4.

METHODS:

A total of 44 patients with irreparable, partial meniscal defects (29 medial and 15 lateral) were implanted with a polyurethane scaffold in a prospective, single-arm proof-of-principle study with a minimum 5-year follow-up. Clinical outcomes were measured with the visual analog scale (VAS) for pain, International Knee Documentation Committee (IKDC), and Knee injury and Osteoarthritis Outcome Score (KOOS) at baseline and at 2- and 5-year follow-up. Magnetic resonance imaging (MRI) was used to evaluate the meniscal implant and cartilage status of the index compartment. Kaplan-Meier time-to-treatment failure distributions were also performed. Removal of the scaffold, conversion to a meniscal transplant, or unicompartmental/total knee arthroplasty was used as endpoints.

RESULTS:

Seven patients were lost to follow-up (15.9%). The patients who participated in this study showed significant clinical improvement after surgery (mean [\pm SD] at baseline, 2 years, and 5 years: 56.2 \pm 21.6, 24.6 \pm 22.7, and 19.3 \pm 26.9, respectively [VAS]; 206.5 \pm 79.7, 329.8 \pm 108.9, and 333.6 \pm 112.2, respectively [total KOOS]). MRI of the scaffolds showed a smaller sized implant when compared with the native meniscus with an irregular surface at 2- and 5-year follow-up. A stable cartilage status of the index compartment at 5-year follow-up was demonstrated in 46.7% of patients compared with the baseline status. During the follow-up period, 62.2% of the implants survived. At final follow-up, 66.7% of the medial scaffolds were still functioning versus 53.8% of the lateral scaffolds.

CONCLUSION:

A polyurethane meniscal implant can improve knee joint function and significantly reduce pain in patients with segmental meniscus deficiency up to 5 years after implantation. A stable cartilage status of the index compartment at 5-year follow-up was demonstrated in 46.7% of patients, calling into question the chondroprotective ability of the implant. In addition, a relatively high failure rate was noticed. Long-term and randomized controlled studies are mandatory to confirm the initial results and the reliability of this procedure.

Cartilage repair

Nasal chondrocyte-based engineered autologous cartilage tissue for repair of articular cartilage defects: an observational first-in-human trial

Marcus Mumme, MD[†] Andrea Barbero, PhD[†] Sylvie Miot, PhD Anke Wixmerten, MSc Sandra Feliciano, BSc Francine Wolf, BSc Adelaide M Asnaghi, PhD Prof Daniel Baumhoer, MD Oliver Bieri, PhD Martin Kretzschmar, MD Geert Pagenstert, MD Martin Haug, MD Prof Dirk J Schaefer, MD Prof Ivan Martin, PhD Prof Marcel Jakob, MD
DOI: [http://dx.doi.org/10.1016/S0140-6736\(16\)31658-0](http://dx.doi.org/10.1016/S0140-6736(16)31658-0)

Background

Articular cartilage injuries have poor repair capacity, leading to progressive joint damage, and cannot be restored predictably by either conventional treatments or advanced therapies based on implantation of articular chondrocytes. Compared with articular chondrocytes, chondrocytes derived from the nasal septum have superior and more reproducible capacity to generate hyaline-like cartilage tissues, with the plasticity to adapt to a joint environment. We aimed to assess whether engineered autologous nasal chondrocyte-based cartilage grafts allow safe and functional restoration of knee cartilage defects.

Methods

In a first-in-human trial, ten patients with symptomatic, post-traumatic, full-thickness cartilage lesions (2–6 cm²) on the femoral condyle or trochlea were treated at University Hospital Basel in Switzerland. Chondrocytes isolated from a 6 mm nasal septum biopsy specimen were expanded and cultured onto collagen membranes to engineer cartilage grafts (30 × 40 × 2 mm). The engineered tissues were implanted into the femoral defects via mini-arthrotomy and assessed up to 24 months after surgery. Primary outcomes were feasibility and safety of the procedure. Secondary outcomes included self-assessed clinical scores and MRI-based estimation of morphological and compositional quality of the repair tissue. This study is registered with ClinicalTrials.gov, number NCT01605201. The study is ongoing, with an approved extension to 25 patients.

Findings

For every patient, it was feasible to manufacture cartilaginous grafts with nasal chondrocytes embedded in an extracellular matrix rich in glycosaminoglycan and type II collagen. Engineered tissues were stable through handling with forceps and could be secured in the injured joints. No adverse reactions were recorded and self-assessed clinical scores for pain, knee function, and quality of life were improved significantly from before surgery to 24 months after surgery. Radiological assessments indicated variable degrees of defect filling and development of repair tissue approaching the composition of native cartilage.

Interpretation

Hyaline-like cartilage tissues, engineered from autologous nasal chondrocytes, can be used clinically for repair of articular cartilage defects in the knee. Future studies are warranted to assess efficacy in large controlled trials and to investigate an extension of indications to early degenerative states or to other joints.

34. PATELLA

Resurfacing

Knee Surg Sports Traumatol Arthrosc. 2016 Oct 6.

High mid-term revision rate after treatment of large, full-thickness cartilage lesions and OA in the patellofemoral joint using a large inlay resurfacing prosthesis: HemiCAP-Wave®.

Laursen JO¹.

Author information

Abstract

PURPOSE:

The HemiCAP-Wave® implant for the patellofemoral resurfacing treatment of large cartilage lesions and osteoarthritis (OA) was introduced in 2009. The outcome of a prospective cohort study of 18 patients with large trochlea lesions or isolated OA treated with the HemiCAP-Wave® implant is presented with up to a 6-year survival rate, and hypothesised short-to mid-term reduced pain and improved function.

METHODS:

Indication for treatment with the HemiCAP-Wave® implant was a symptomatic, large cartilage lesion in trochlea demonstrated by MRI or arthroscopy, which was ICRS grades 3-4 and larger than 4 cm². Patients were followed for 2 years with American Knee Society Subjective outcome Scores (AKSS), pain scores and radiographic evaluations and for up to 6 years with complications and reoperations.

RESULTS:

At the 1- and 2-year follow-up mean AKSS clinical score, the mean AKSS function score and mean pain score improved significantly. Within 6 years, 28 % of the implants were revised to arthroplasty due to the progression of cartilage lesions, osteoarthritis or increased knee pain.

CONCLUSION:

The present study demonstrated an improved short- to mid-term clinical outcome and reduced pain but high mid-term revision rate after patellofemoral inlay resurfacing using the HemiCAP-Wave® implant. Patellofemoral resurfacing implantation treatment with a large inlay prosthesis can offer temporary treatment for large isolated patellofemoral cartilage lesions or OA in younger patients with almost healthy cartilage in the other compartments who are not yet eligible for arthroplasty treatment.

LEVEL OF EVIDENCE: IV.

35. KNEE/TOTAL

LBP and total knee

Arch Orthop Trauma Surg. 2016 Oct 3.

Concomitant low back pain impairs outcomes after primary total knee arthroplasty in patients over 65 years: a prospective, matched cohort study.

Collados-Maestre I¹, Lizaur-Utrilla A^{2,3}, Martinez-Mendez D¹, Marco-Gomez L¹, Lopez-Prats FA⁴.

Author information

Abstract

INTRODUCTION:

Knee osteoarthritis and low back pain (LBP) are two conditions with relatively high prevalence in patients over 65 years. The objective was to determine the effect of symptomatic LBP on the patient-reported outcome after primary TKA.

MATERIAL AND METHOD:

A cohort of 48 patients with concomitant LBP was prospectively matched 1:2 with patients without LBP for gender, age, body mass index and preoperative knee function. LBP severity was measured with the Oswestry Disability Index (ODI). Patient-reported outcomes were assessed with reduced Short-Form (SF12), Western Ontario and McMaster Universities score (WOMAC), and visual analogue scale (VAS) for satisfaction. Functional outcome was assessed with the Knee Society Scores (KSS).

RESULTS:

The mean postoperative follow-up was 3.2 years. At last follow-up, LBP cohort had significantly worse SF12, WOMAC, KSS and VAS scores than those patients without LBP. Preoperative ODI score was significantly correlated with outcomes.

CONCLUSION:

Worse functional and patient-reported outcomes were obtained in patients over 65 years with concomitant LBP, and this was related to the intensity of preoperative LBP. Despite successful outcome in the knee, the LBP usually remains after TKA and this may impair satisfaction and patient-reported outcomes. These patients should be properly informed about their potential outcomes.

36. KNEE/EXERCISE

Which exercise is best

Arch Gerontol Geriatr. 2016 Oct 11;68:106-112. doi: 10.1016/j.archger.2016.10.002.

Are resistance and aerobic exercise training equally effective at improving knee muscle strength and balance in older women?

Marques EA¹, Figueiredo P², Harris TB³, Wanderley FA⁴, Carvalho J⁵.

Author information

Abstract

This study aimed to compare the magnitude of knee muscle strength and static and dynamic balance change in response to 8 months of progressive RE and AE training in healthy community-dwelling older women. A secondary aim was to assess the relationship between muscle strength and balance changes (up and go test (UGT), one-leg stance test, and center of pressure measures). This study was a secondary analysis of longitudinal data from a randomized controlled trial, a three-arm intervention study in older women (n=71, mean age 69.0y). The results suggest that both interventions elicited likely to almost certain improvements (using magnitude-based inference) in balance performance. Leg strength was improved after RE whereas it was unclear following AE. Improvements in strength were almost certainly moderate after RE and possibly trivial after AE, with very likely greater improvements following RE compared to AE. A large and significant negative correlation ($r=-0.5$; CI 90%: -0.7 to -0.2) was found between Δ UGT and change in both knee extension and knee flexion strength after 8-month RE. In conclusion, our results showed that both types of training improve balance, but RE was also effective at improving leg strength. In addition, improvements in both knee extension and flexion strength after RE appear to make an important contribution to meaningful improvements in static and dynamic balance.

37. OSTEOARTHRITIS/KNEE

Topical helps

Musculoskeletal Care. 2016 Oct 24. doi: 10.1002/msc.1163.

Safety and efficacy of topical ketoprofen in transfersome gel in knee osteoarthritis: A systematic review.

Sardana V¹, Burzynski J², Zalzal P³.
Author information

Abstract

PURPOSE:

Topical ketoprofen in Transfersome gel has been used for the alleviation of symptoms in osteoarthritis. Non-steroidal anti-inflammatory drugs (NSAIDs) are associated with various side effects. Topical NSAIDs are known to have a lower side-effect profile when compared with systemic administration. The present systematic review aimed to determine the safety and efficacy of topical ketoprofen in Transfersome gel in knee osteoarthritis (OA).

METHODS:

A systematic literature review was performed. The electronic databases EMBASE, MEDLINE, HealthStar and PubMed were searched from 1946 to June 2016. A screen of the reference sections of the included studies was also performed. Two blinded reviewers searched, screened, abstracted and evaluated the data quality using the Jadad scale. Studies were included if they contained: at least 50% of participants with knee OA, topical ketoprofen, human subjects and participants from North America or Europe. Study outcomes had to include patient-reported functional outcome scores.

RESULTS:

Five studies were included, with a total of 3619 participants, and a mean Jadad score of 3.4/5. Western Ontario McMaster Universities (WOMAC) Osteoarthritis Index was the only outcome measure consistent across all of the randomized controlled trials included in the present review (four of the five included studies). All topical ketoprofen in Transfersome gel groups (25 mg, 50 mg and 100 mg) had improvements in pain that were superior to all other treatment arms, and the 50 mg topical ketoprofen in Transfersome gel group had functional gains that were superior to all other treatment arms. The majority of the adverse events were non-serious and related to skin and subcutaneous tissue disorders, with erythema being the most common. The average of all adverse events and gastrointestinal (GI) adverse events was highest in the oral celecoxib group (47.1% and 15.1%, respectively). The average frequency of GI adverse events in the topical ketoprofen groups was comparable with that in the topical placebo treatment arm. A meta-analysis was not feasible due to the heterogeneity among the studies.

CONCLUSIONS:

Topical ketoprofen in Transfersome gel is an effective means of treating symptoms of knee OA, and is superior to oral celecoxib, oral placebo and topical placebo. The most commonly reported adverse events associated with the use of topical ketoprofen in Transfersome gel were non-severe skin and subcutaneous tissue disorders. Furthermore, as topical ketoprofen in Transfersome gel was associated with fewer adverse events when compared with oral celecoxib, and had rates of GI adverse events comparable with those of topical placebo, it may be ideal for those who are unable to take oral NSAIDs.

Changes in flexion and surgery

Knee Surg Sports Traumatol Arthrosc. 2016 Oct 6.

Dynamic knee behaviour: does the knee deformity change as it is flexed-an assessment and classification with computer navigation.

Deep K¹, Picard F², Baines J².
Author information

Abstract

PURPOSE:

The aim of this study was to assess the kinematics of arthritic knees prior to TKA. The hypothesis was that the arthritic knee follows distinct patterns with regard to deformity in coronal plane as it flexes from extended position.

METHOD:

Data from 585 consecutive arthritic knees that had undergone TKA using two non-image-based navigation systems were included in the study. Coronal plane alignment given by the femoro-tibial mechanical angle (FTMA) was recorded in extension, 30°, 60°, 90° and maximum flexion prior to making any bony cuts or ligamentous releases.

RESULTS:

Complete data were available for 512 (87.5 %) of arthritic knees. It was found that pre-implant arthritic knees behaved in different distinct patterns from full extension to 90° flexion. These patterns in FTMA from extension through to 90° of flexion were classified into 4 major types (1, 2, 3, and 4) and 8 subgroups (1A, 1B, 2A, 2B, 3, 4A, 4B, 4C) for varus and valgus knees. Beyond 90° of flexion, there were no distinct or consistent patterns. There were differences between varus and valgus knee deformities not only in overall numbers (73.8 % varus vs. 21.1 % valgus) but also in kinematic behaviour. Only 14.1 % of total knees had a consistent deformity (Type 1A) which remained the same throughout the range of flexion. 14.1 % knees actually become opposite deformity as the knee flexes; thus, varus becomes valgus and valgus becomes varus as the knee flexes (Type 3 and 4C).

CONCLUSION:

This study has observed and categorised distinct patterns which arthritic knees follow in the coronal plane as it flexes. This dynamic change during flexion will have bearing on collateral releases that are traditionally done based on deformity in extension or 90° flexion mainly. This may be the underlying cause of flexion instability especially for Types 3 and 4C knees if collateral soft tissue release is done based on deformity in extension. Full significance of this remains unknown and will need further investigation.

Minimal footwear

Journal of Sports Sciences. 2016 Aug;

Kinetic changes during a six-week minimal footwear and gait-retraining intervention in runners

Joe P. Warne, Barry P Smyth, John O’C Fagan, Michelle E. Hone, Chris Richter, Alan M. Nevill, Kieran A. Moran & Giles D. Warrington

An evaluation of a six-week Combined minimal footwear transition and gait-retraining combination vs. gait retraining only on impact characteristics and leg stiffness.

Twenty-four trained male runners were randomly assigned to either (1) Minimalist footwear transition Combined with gait-retraining over a six-week period (“Combined” group; $n = 12$) examined in both footwear, or (2) a gait-retraining group only with no minimalist footwear exposure (“Control”; $n = 12$). Participants were assessed for loading rate, impact peak, vertical, knee and ankle stiffness, and foot-strike using 3D and kinetic analysis. Loading rate was significantly higher in the Combined group in minimal shoes in pre-tests compared to a Control ($P \leq 0.001$), reduced significantly in the Combined group over time ($P \leq 0.001$), and was not different to the Control group in post-tests ($P = 0.16$).

The impact peak ($P = 0.056$) and ankle stiffness reduced in both groups ($P = 0.006$). Loading rate and vertical stiffness was higher in minimalist footwear than conventional running shoes both pre ($P \leq 0.001$) and post ($P = 0.046$) the intervention.

There has a higher tendency to non-rearfoot strike in both interventions, but more acute changes in the minimalist footwear. A Combined intervention can potentially reduce impact variables. However, higher loading rate initially in minimalist footwear may increase the risk of injury in this condition.

/abstract content

KEYWORDS: Minimalism, running footwear, running related injury, barefoot running, running technique,

44. RHUMATOID ARTHRITIS

AS linked to childhood infections

Arthritis Res Ther. 2016 Oct 22;18(1):240.

Childhood hospitalisation with infections and later development of ankylosing spondylitis: a national case-control study.

Lindström U¹, Exarchou S², Lie E³, Dehlin M⁴, Forsblad-d'Elia H⁵, Askling J⁶, Jacobsson L⁴.
Author information

Abstract

BACKGROUND:

The role of environmental exposures in the pathogenesis of ankylosing spondylitis (AS) remains unclear. In particular, two types of exposures have been suspected to play a role: mechanical stress and infections. The objective of this case-control study was to determine if childhood infections are associated with later development of AS.

METHODS:

The cases with AS were identified through the Swedish national outpatient specialised-care register, based on having been given at least one AS diagnosis in the register between 2001 and 2010. Five controls per case were identified in the Swedish population register, matched at the time-point of the index case's first spondyloarthritis diagnosis on sex, birth year, and county. All cases/controls matched prior to the age of 17 years were excluded, as well as all cases/controls given a diagnosis of reactive arthritis or juvenile arthritis at any time point, or any other diagnosis of a rheumatic disease, psoriasis, iridocyclitis, or inflammatory bowel disease before the time-point of matching. All events of hospitalisation with an infection before the age of 17 years were retrieved from the register, and categorised according to the focus of the infection. Odds ratios (ORs) and confidence intervals (CIs) were determined through conditional logistic regression analyses.

RESULTS:

Of the 2453 cases with AS and 10,257 controls, 17.4 % of the cases and 16.3 % of the controls had been hospitalised with an infection before the age of 17 years (OR 1.08, 95 % CI 0.96-1.22). Appendicitis (1.5 % cases; 2.5 % controls; OR 0.59, 95 % CI 0.41-0.83), respiratory tract infections (cases 11.2 %; controls 9.2 %; OR 1.24, 95 % CI 1.07-1.44) and, in particular, tonsillitis (cases 3.7 %; controls 2.8 %; OR 1.31, 95 % CI 1.03-1.67) were associated with AS. There were no associations between AS and any other type of infection, and the point estimates were similar in several sensitivity analyses.

CONCLUSIONS:

Childhood appendicitis was associated with a decreased risk, whereas respiratory tract infections were associated with an increased risk for later development of AS. These findings support a possible relationship between childhood infections and later development of AS, although the study is limited to infections resulting in inpatient care.

OA and exercise

Osteoarthritis Cartilage. 2016 Sep 30. pii: S1063-4584(16)30301-6. doi: 10.1016/j.joca.2016.09.018.

Tribological rehydration of cartilage and its potential role in preserving joint health.

Moore AC¹, Burris DL².
Author information

Abstract**OBJECTIVE:**

During exercise, cartilage recovers interstitial fluid lost during inactivity, which explains how tissue thickness and joint space are maintained over time. This recovery phenomenon is currently explained by a combination of osmotic swelling during intermittent bath exposure and sub-ambient pressurization during unloading. This paper tests an alternate hypothesis that cartilage can retain and recover interstitial fluid in the absence of bath exposure and unloading when physiological hydrodynamics are present.

METHOD:

Stationary cartilage-on-flat experiments were conducted to eliminate intermittent bath exposure as a potential contributor to fluid uptake. In situ compression measurements were used to monitor the loss, retention, and recovery of interstitial fluid during testing in saline. Samples were left larger than the contact area to preserve a convergence zone for hydrodynamic pressurization.

RESULTS:

Interstitial fluid lost during static loading was recovered during sliding in the absence of unloading and contact migration; fluid recovery in a stationary contact cannot be explained by biphasic theory and suggests a fundamentally new contributor to the recovery process. We call the phenomenon 'tribological rehydration' because recovery was induced by sliding rather than by unloading or migration. Sensitivities to sliding speed, surface permeability, and nature of the convergence wedge are consistent with the hypothesis that hydrodynamic effects underlie the tribological rehydration phenomenon.

CONCLUSIONS:

This study demonstrates that cartilage can retain and recover interstitial fluid without migration or unloading. The results suggest that hydrodynamic effects in the joint are not only important contributors to lubrication, they are likely equally important to the preservation of joint space.

45 A. MANUAL THERAPY LUMBAR & GENERAL**CD and surgery**

Dig Liver Dis. 2016 Sep 26. pii: S1590-8658(16)30742-3. doi: 10.1016/j.dld.2016.09.012.

Increased rate of abdominal surgery both before and after diagnosis of celiac disease.

Kurien M¹, Sanders DS¹, Ekbom A², Ciacci C³, Ludvigsson JF⁴.

Author information

Abstract

BACKGROUND:

The detection of celiac disease (CD) is suboptimal.

AIMS:

We hypothesized that misdiagnosis is leading to diagnostic delays, and examine this assertion by determining if patients have increased risk of abdominal surgery before CD diagnosis.

METHODS:

Through biopsy reports from Sweden's 28 pathology departments we identified all individuals with CD (Marsh stage 3; n=29,096). Using hospital-based data on inpatient and outpatient surgery recorded in the Swedish Patient Register, we compared abdominal surgery (appendectomy, laparotomy, biliary tract surgery, and uterine surgery) with that in 144,522 controls matched for age, sex, county and calendar year. Conditional logistic regression estimated odds ratios (ORs).

RESULTS:

4064 (14.0%) individuals with CD and 15,760 (10.9%) controls had a record of earlier abdominal surgery (OR=1.36, 95% CI=1.31-1.42). Risk estimates were highest in the first year after surgery (OR=2.00; 95% CI=1.79-2.22). Appendectomy, laparotomy, biliary tract surgery, and uterine surgery were all associated with having a later CD diagnosis. Of note, abdominal surgery was also more common after CD diagnosis (hazard ratio=1.34; 95% CI=1.29-1.39).

CONCLUSIONS:

There is an increased risk of abdominal surgery both before and after CD diagnosis. Surgical complications associated with CD may best explain these outcomes. Medical nihilism and lack of CD awareness may be contributing to outcomes.

Manipulation and diarrhea

Therapeutic effect observation on Nie-pinching the spine manipulation for infantile diarrhea due to spleen deficiency

Journal of Acupuncture and Tuina Science, 10/24/2016 Tang YL, et al. –

With the aim to observe the influence of Nie-pinching the spine manipulation on the excretory rate of urine D-xylose in the infants with diarrhea due to spleen deficiency, and to evaluate the clinical effects. In the infants with diarrhea due to spleen deficiency, chiropractics can reduce the integrals of spleen deficiency symptoms and elevate the excretory rate of urine D-xylose in order to improve the therapeutic effects by alleviating the symptoms of spleen deficiency and the absorptive function of the small intestine.

Methods

- The authors randomly divided 60 infants in conformity with the diagnostic criteria of diarrhea due to spleen deficiency into a treatment group and a control group by the random digital table, 30 cases in each group.
- In the treatment group, the infants were treated by Nie-pinching the spine manipulation and traditional infantile tuina in addition to the routine basic treatment.
- In the control group, the infants were treated by the same traditional infantile tuina in addition to the routine basic treatment.
- In the 2 groups, the infants were treated once every day, 4 weeks as a course.
- Totally, the treatment was given for a course.
- They used the symptom integrals of spleen deficiency to evaluate the improvement in the symptoms.
- To determine the excretory rate of urine D-xylose they used colorimetry.

Results

- The differences in the global score of spleen deficiency symptoms and the excretory rate of urine D-xylose in the two groups were statistically significant (all $P < 0.01$) in the comparison of the same group before and after the treatment.
- The differences in the global score of spleen deficiency symptoms and the excretory rate of urine D-xylose between the two groups were all statistically significant (both $P < 0.01$) after the treatment.

59. PAIN**Cold pressure helps decrease central pain responses**

Eur J Pain. 2016 Oct 20. doi: 10.1002/ejp.968.

Exploration of conditioned pain modulation effect on long-term potentiation-like pain amplification in humans.

Xia W^{1,2}, Mørch CD³, Matre D⁴, Andersen OK³.

Author information

Abstract

BACKGROUND:

This study aimed to explore conditioned pain modulation (CPM) effect on long-term potentiation (LTP)-like pain amplification induced by cutaneous 10-Hz conditioning electrical stimulation (CES).

METHODS:

Conditioned pain modulation was induced by cold pressor conditioning stimulus (CPCS) (4 °C) which was applied immediately before CES in the active session. In the control session, water with a temperature of 32 °C was used. Twenty subjects participated in two sessions in a randomized crossover design with at least 1-week interval. Perceptual intensity ratings to single electrical stimulation (SES) at the conditioned skin site and to pinprick and light-stroking stimuli in the immediate vicinity of the CES electrodes were measured. Superficial blood flow (SBF), skin temperature (ST) and heat pain threshold (HPT) were measured covering both homotopic and heterotopic skin. The pain intensities during CES process were measured and short-form McGill Pain Questionnaire (SF-MPQ) was used for assessing CES pain experience.

RESULTS:

Cold pressor conditioning stimulus reduced pain perception increments to weak pinprick and light-stroking stimuli after 10-Hz CES compared with the control session. Moreover, CPCS resulted in lower pain intensity ratings during CES process but without affecting the SF-MPQ scores between two sessions. The SBF and ST increased after CES and then gradually declined but without differences between CPCS and control sessions. CPM did not affect HPT and pain intensity increments to SES.

CONCLUSIONS:

The CPCS inhibited heterotopic perception amplification to weak mechanical stimuli after CES. The results indicate that endogenous descending inhibitory systems might play a role against development of non-nociceptive perception amplification states (e.g. allodynia).

SIGNIFICANCE:

Conditioned pain modulation (CPM) may play a role in inhibiting the pain amplification process at the central nervous system and prompting central desensitization. CPM has a special inhibition effect for the development of perception amplification to non-painful mechanical stimuli.

Trigeminal neuropathic pain

Neuromodulation. 2016 Oct 14. doi: 10.1111/ner.12536.

Trigemino-Cervical Neuropathic Pain Relieved by Serially Repeated Peripheral Nerve Field Stimulation Without Tolerance: Case Report.

Simpson BA¹, Nannapaneni R².

Author information

Abstract**BACKGROUND:**

With its relative simplicity and safety, peripheral nerve field stimulation (PNFS; PENS) is contributing to the re-emergence of peripheral nerve stimulation as an effective therapy for neuropathic pain (NPP).

CASE PRESENTATION:

A 70-year-old woman had developed severe, medically refractory NPP unilaterally in the scalp and face 20 years earlier, following a maxillofacial surgical procedure. PNFS gave substantial relief of the pain and allodynia and was repeated successfully on a further 25 occasions over the subsequent five years. Tolerance did not develop.

CONCLUSION:

Serially repeated PNFS can provide sustained relief of NPP over long periods, without tolerance, where a permanent implant may be inappropriate, unavailable, or declined

Tonic muscle pain

Hum Brain Mapp. 2016 Oct 3. doi: 10.1002/hbm.23424.

Central circuitry responsible for the divergent sympathetic responses to tonic muscle pain in humans.

Kobuch S¹, Fazalbhoy A^{2,3}, Brown R^{1,2}, Henderson LA⁴, Macefield VG^{5,6}.

Author information

Abstract

Experimentally induced tonic muscle pain evokes divergent muscle vasoconstrictor responses, with some individuals exhibiting a sustained increase in muscle sympathetic nerve activity (MSNA), and others a sustained decrease.

These patterns cannot be predicted from an individual's baseline physiological or psychological measures. The aim of this study was to investigate whether the different muscle sympathetic responses to tonic muscle pain were associated with differential changes in regional brain activity.

Functional magnetic resonance imaging (fMRI) of the brain was performed concurrently with microelectrode recording of MSNA from the peroneal nerve during a 40-min infusion of hypertonic saline into the ipsilateral tibialis anterior muscle. MSNA increased in 26 and decreased in 11 of 37 subjects during tonic muscle pain. Within the prefrontal and cingulate cortices, precuneus, nucleus accumbens, caudate nucleus, and dorsomedial hypothalamus, blood oxygen level dependent (BOLD) signal intensity increased in the increasing-MSNA group and remained at baseline or decreased in the decreasing-MSNA group. Similar responses occurred in the dorsolateral pons and in the region of the rostral ventrolateral medulla. By contrast, within the region of the dorsolateral periaqueductal gray (dlPAG) signal intensity initially increased in both groups but returned to baseline levels only in the increasing-MSNA group.

These results suggest that the divergent sympathetic responses to muscle pain result from activation of a neural pathway that includes the dlPAG, an area thought to be responsible for the behavioral and cardiovascular responses to psychological rather than physical stressors. Hum Brain Mapp, 2016. © 2016 Wiley Periodicals, Inc.

CBT improves brain function

Cognitive behavioral therapy changes functional connectivity between medial prefrontal and anterior cingulate cortices

Journal of Affective Disorders, 10/20/2016

Yoshimura S, et al. – Based on the results observed in this study, it can be concluded that CBT for depression may disrupt MPFC-ACC connectivity, with related changes in depressive symptoms and dysfunctional cognition.

Methods

- 29 depressive patients and 15 healthy control participants were enrolled in this study.
- Functional Magnetic Resonance Imaging was utilized to investigate possible CBT-related functional connectivity changes associated with negative emotional self-referential processing.
- Depressed and healthy participants were incorporated.
- The authors characterized a seed region (medial prefrontal cortex) and coupled region (ACC) in light of the past study, and they inspected changes in MPFC-ACC functional connectivity from pretreatment to posttreatment.

Results

- Results revealed that CBT was associated with diminished functional connectivity between the MPFC and ACC.
- Mediation analysis results recommended that post-treatment dysfunctional cognition mediated the relationship between MPFC-ACC connectivity at pretreatment and posttreatment.

61. FIBROMYALGIA

Depression and exercise

Does frequency of physical exercise have an effect on depression in patients with fibromyalgia

Journal of Affective Disorders, 10/21/2016 Andrade A, et al.

For this study, researchers intended to research the relationship between physical exercise (PE) and depression in patients with Fibromyalgia Syndrome (FMS), and to assess the impact of the week by week volume of PE on depression. There was a relationship amongst PE and lower values of depression in patients with FMS, and the level of depression was positively and significantly connected with physical inactivity.

Methods

- A sum of 215 FMS patients with depression were assessed with the Beck Depression Inventory, and were additionally classified as inactive, insufficiently active, or active.
- They performed binary logistic regression, with PE as the dependent variable and the level of depression as an independent variable.
- They additionally utilized the Mann–Whitney Utest.
- An alpha value of 0.05 was determined to have significance ($p < 0.05$).

Results

- In this study inactive patients with FMS have a higher rate of moderate to severe depression (29.1%) and major depression (25%) when compared with active patients.
- In comparing the depression index between inactive, insufficiently active, and active FMS patients as per the reported week after week volume of PE, they found differences between inactive and active patients ($p = 0.035$).
- The level of depression was positively connected with physical inactivity in FMS, and FMS patients with severe depression had 3.45 (1.23 to 9.64) times the probability of being inactive than patients without depression or with minimal depression

62 A. NUTRITION/VITAMINS**Soy and cardiovascular risk**

Eur J Nutr. 2016 Oct 18.

Effect of soy on metabolic syndrome and cardiovascular risk factors: a randomized controlled trial.

Ruscica M¹, Pavanello C², Gandini S³, Gomaraschi M², Vitali C², Macchi C⁴, Morlotti B⁵, Aiello G⁶, Bosisio R⁵, Calabresi L², Arnoldi A⁶, Sirtori CR⁵, Magni P⁷.

Author information

Abstract

BACKGROUND:

Cardiovascular diseases are currently the commonest cause of death worldwide. Different strategies for their primary prevention have been planned, taking into account the main known risk factors, which include an atherogenic lipid profile and visceral fat excess.

METHODS:

The study was designed as a randomized, parallel, single-center study with a nutritional intervention duration of 12 weeks. Whole soy foods corresponding to 30 g/day soy protein were given in substitution of animal foods containing the same protein amount.

RESULTS:

Soy nutritional intervention resulted in a reduction in the number of MetS features in 13/26 subjects. Moreover, in the soy group we observed a significant improvement of median percentage changes for body weight (-1.5 %) and BMI (-1.5 %), as well as for atherogenic lipid markers, namely TC (-4.85 %), LDL-C (-5.25 %), non-HDL-C (-7.14 %) and apoB (-14.8 %). Since the majority of the studied variables were strongly correlated, three factors were identified which explained the majority (52 %) of the total variance in the whole data set. Among them, factor 1, which loaded lipid and adipose variables, explained the 22 % of total variance, showing a statistically significant difference between treatment arms ($p = 0.002$).

CONCLUSIONS:

The inclusion of whole soy foods (corresponding to 30 g/day protein) in a lipid-lowering diet significantly improved a relevant set of biomarkers associated with cardiovascular risk.

Energy drinks and performance

European Journal of Nutrition pp 1–15

Acute effects of caffeine-containing energy drinks on physical performance: a systematic review and meta-analysis

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DOI: 10.1007/s00394-016-1331-9

Purpose

Caffeine-containing energy drinks (EDs) are currently used as ergogenic aids to improve physical performance in a wide variety of sport disciplines. However, the outcomes of previous investigations on this topic are inconclusive due to methodological differences, especially, in the dosage of the active ingredients and the test used to assess performance.

Methods

We performed a systematic review and meta-analysis of published studies to evaluate the effects of acute ED intake on physical performance. The search for references was conducted in the databases PubMed, ISI Web of Knowledge and SPORTDiscus until December 2015.

Results

Thirty-four studies published between 1998 and 2015 were included in the analysis. Using a random-effects model, effect sizes (ES) were calculated as the standardized mean difference. Overall, ED ingestion improved physical performance in muscle strength and endurance (ES = 0.49; $p < 0.001$), endurance exercise tests (ES = 0.53; $p < 0.001$), jumping (ES = 0.29; $p = 0.01$) and sport-specific actions (ES = 0.51; $p < 0.001$), but not in sprinting (ES = 0.14; $p = 0.06$). The meta-regression demonstrated a significant association between taurine dosage (mg) and performance (slope = 0.0001; $p = 0.04$), but not between caffeine dosage (mg) and performance (slope = 0.0009; $p = 0.21$).

Conclusion

ED ingestion improved performance in muscle strength and endurance, endurance exercise tests, jumping and sport-specific actions. However, the improvement in performance was associated with taurine dosage.

63. PHARMACOLOGY

Opioids not that successful in treating LBP

Many back pain patients get limited relief from opioids and worry about taking them, survey shows

American Society of Anesthesiologists News, 10/26/2016

Millions of people take opioids for chronic back pain, but many of them get limited relief while experiencing side effects and worrying about the stigma associated with taking them, suggests research presented at the ANESTHESIOLOGY® 2016 annual meeting.

More than 100 million people in the United States suffer from chronic pain, and those with chronic low back pain are more likely than patients with other types of pain to be prescribed opioids. Unfortunately, these medications are addictive and can cause side effects, ranging from drowsiness to breathing problems.

“Patients are increasingly aware that opioids are problematic, but don’t know there are alternative treatment options,” said Asokumar Buvanendran, M.D., lead author of the study, director of orthopedic anesthesia and vice chair for research at Rush University, Chicago, and vice chair of the American Society of Anesthesiologists (ASA) Committee on Pain Medicine. “While some patients may benefit from opioids for severe pain for a few days after an injury, physicians need to wean their patients off them and use multi-modal therapies instead.”

In the study, 2,030 people with low back pain completed a survey about treatment. Nearly half (941) were currently taking opioids. When asked how successful the opioids were at relieving their pain, only 13 percent said “very successful.” The most common answer – given by 44 percent – was “somewhat successful” and 31 percent said “moderately successful.” Twelve percent said “not successful.”

Seventy-five percent said they experienced side effects including constipation (65 percent), sleepiness (37 percent), cognitive issues (32 percent) and dependence (29 percent).

Respondents also had concerns about the stigma associated with taking opioids. Forty-one percent said they felt judged by using opioids. While 68 percent of the patients had also been treated with antidepressants, only 19 percent felt a stigma from using those.

A major pharmaceutical company recently agreed to disclose in its promotional material that narcotic painkillers carry serious risk of addiction and not to promote opioids for unapproved, “off-label” uses such as long-term back pain. Researchers also note a lack of solid studies on the effectiveness of opioids in treating back pain beyond 12 weeks.

Patients with chronic low back pain, persistent pain lasting more than three months, should see a pain medicine specialist who uses an approach that combines a variety of treatments that may be more beneficial, said Dr. Buvanendran. These treatments include physical therapy, bracing, interventional procedures such as nerve blocks, nerve ablation techniques or implantable devices,

other medications such as anti-inflammatory and alternative therapies such as biofeedback and massage, he said.

Ibuprofen and the heart

Common anti-inflammatory painkillers increasing the risk of heart failure - expert comment

London School of Hygiene & Tropical Medicine News, 10/20/2016

Common painkillers such as ibuprofen and diclofenac that are used by millions of people in the UK have been linked to an increased risk of heart failure, according to new research published in the British Medical Journal.

Led by the University of Milano-Bicocca, the study analysed 10 million users of non-steroidal anti-inflammatory drugs (NSAIDs) from the UK, Italy, Germany and the Netherlands between 2000-2010. The researchers found that people who aged 77 on average, and had taken an NSAID in the previous 14 days, faced a 19% increased risk of being taken to hospital for heart failure.

The research showed the NSAIDs associated with this risk included ibuprofen, diclofenac and naproxen. The risk of heart failure actually doubled for diclofenac when taken at high doses, but the researchers urged this should be 'interpreted with caution.'

Stephen Evans, Professor of Pharmacoepidemiology at the London School of Hygiene & Tropical Medicine, explains: "This is a real, but for most patients, very small risk. The risk is shown in this paper to increase with dose. In general, this has been known for a long time and higher quality data from randomised trials have also shown these effects on heart failure and also on other cardiovascular effects.

"This study, well conducted, does show some evidence, generally consistent with randomised trials, that there are some differences between different drugs. It is possible that some of these differences are due to different effective doses for the different drugs.

"The absolute risk is suggested to be about 37.5 admissions for heart failure per 10,000 person years. Because of the study design, it is possible that this is an over-estimate but it is of the right order of magnitude. The rate of admission increases dramatically with age and it is important to remember the average age of the people studied here was 77 years.

"The consequence is that it is of very little relevance to most people below age 65 taking painkillers, but in the very elderly (say above 80) that the effects are of more relevance. For individuals it is a small increased risk."