

ABSTRACTS

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2. LBP

Capsaicinid cream helps

J Pain Res. 2016 Dec 14;9:1221-1230. doi: 10.2147/JPR.S118329. eCollection 2016.

Nicoboxil/nonivamide cream effectively and safely reduces acute nonspecific low back pain - a randomized, placebo-controlled trial.

Blahova Z¹, Holm JC¹, Weiser T², Richter E², Trampisch M², Akarachkova E³.

Author information

Abstract

BACKGROUND/OBJECTIVE:

Low back pain affects many patients and has a high socioeconomic impact. Topical capsaicinoids have been used for decades to treat musculoskeletal pain. This study investigated the effects of the fixed dose combination (FDC) of nonivamide (a capsaicinoid) and nicoboxil (a nicotinic acid ester) cream in the treatment of acute nonspecific low back pain.

MATERIALS AND METHODS:

This phase III randomized, double-blind, placebo-controlled, multinational, multi-center trial investigated efficacy, safety, and tolerability of topical nicoboxil 1.08%/nonivamide 0.17% (Finalgon[®] cream) in treatment of acute nonspecific low back pain with the endpoints: pain intensity (PI) difference between pre-dose baseline and 8 hours after first application and the end of treatment, mobility score, and efficacy score.

RESULTS:

Patients (n=138), 21-65 years of age, were treated for up to 4 days with FDC or placebo cream. Mean baseline PI was 6.8 on a 0-10 point numerical rating scale. After 8 hours, pain was more reduced with the FDC than with placebo (adjusted means: 2.824 vs. 0.975 points; $p < 0.0001$). On the last treatment day, mean pain reduction by the FDC was stronger than with placebo (adjusted means: 5.132 vs. 2.174 points; $p < 0.0001$). Mobility on Day 1 was in favor of the FDC when compared to placebo (odds ratio [95% confidence interval {CI}]: 7.200 [3.609, 14.363], $p < 0.0001$). At the end of treatment, patients treated with the FDC rated efficacy significantly higher than placebo (odds ratio [95% CI]: 11.370 [5.342, 24.199], $p < 0.0001$). Both treatments were tolerated well. No serious adverse events were reported.

CONCLUSION:

Nicoboxil/nonivamide cream is an effective and safe treatment for acute nonspecific low back pain, adding a promising treatment option.

Neuropathic pain questionnaires

Usefulness of four commonly used neuropathic pain screening questionnaires in patients with chronic low back pain: A cross-sectional study

The Korean Journal of Pain, 01/05/2017

Gudala K, et al.

In patients with chronic low back pain (CLBP), self-completed douleur neuropathique 4 (S-DN4), the ID Pain, the painDETECT questionnaire (PDQ), but not Self-completed Leeds Assessment of neuropathic Symptoms and Signs (S-LANSS), have good discriminant validity to screen for neuropathic pain component (NePC). 20-30% of patients with an NePC were missed despite using all the tests. Therefore, these questionnaires can only be used as an initial clue in screening for NePCs, but do not replace clinical judgment.

Methods

- The authors included patients with CLBP, with or without leg pain in this single-center cross-sectional study.
- They initially screened participants for NePC presence by a physician according to the regular practice, and later assessed using screening questionnaires.
- They compared the diagnostic accuracy of these questionnaires assuming the physician-made diagnosis as the gold standard.

Results

- The authors included 215 patients with CLBP of which 164 (76.3%, 95% CI, 70.2-81.5) had a NePC.
- In this study, S-DN4, ID Pain, and PDQ have an area under the curve (AUC) > 0.8 demonstrating excellent discrimination.
- But, S-LANSS has an AUC of 0.69 (0.62-0.75), demonstrating low discrimination.
- S-DN4 has a significantly higher AUC when contrasted with ID Pain ($d(\text{AUC}) = 0.063$, $P < 0.01$) and S-LANSS ($d(\text{AUC}) = 0.197$, $P < 0.01$).
- However, the AUC of S-DN4 does not fundamentally differ from that of PDQ ($d(\text{AUC}) = 0.013$, $P = 0.62$).

Kinesio tape did not help

Medium term effects of kinesio taping in patients with chronic non-specific low back pain: A randomized controlled trial

Physiotherapy, 01/04/2017
Araujo AC, et al.

Researchers aim to examine the effectiveness of kinesio taping in patients with chronic low back pain after 6 months from randomization. At 6 months follow-up, 4 weeks of kinesio taping treatment was not better than sham taping for patients with chronic low back pain.

Methods

- The researchers performed a randomized controlled trial with a 6 months follow up.
- They randomly assigned 148 participants to the experimental (kinesio taping with skin convolutions) or control (kinesio taping without convolutions - Sham Taping) group.
- For 4 weeks, participants from both groups had the tape reapplied twice a week.
- The outcomes were pain, disability and global impression of recovery after 6 months.

Results

- In the experimental group (n = 73, response rate 98.6%) 1 participant was lost to follow up and 2 in the control group (n = 72, response rate 97.3%).
- There were no statistically significant between-group differences in pain intensity after 6 months (between- group difference -0.8 points, 95% CI -1.7 to 0.2), global impression of recovery (0.4, -0.7 to 1.5)], or disability (-1.1, -3.0 to 0.7).

Genetic factors

BMC Musculoskelet Disord. 2016 Dec 13;17(1):500.

Genes associated with persistent lumbar radicular pain; a systematic review.

Bjorland S^{1,2}, Moen A^{3,4}, Schistad E³, Gjerstad J^{4,5}, Røe C^{6,3}.

BACKGROUND:

The aim of the present study was to provide an overview of the literature addressing the role of genetic factors and biomarkers predicting pain recovery in newly diagnosed lumbar radicular pain (LRP) patients.

METHODS:

The search was performed in Medline OVID, Embase, PsycInfo and Web of Science (2004 to 2015). Only prospective studies of patients with LRP addressing the role of genetic factors (genetic susceptibility) and pain biomarkers (proteins in serum) were included. Two independent reviewers extracted the data and assessed methodological quality.

RESULTS:

The search identified 880 citations of which 15 fulfilled the inclusion criteria. Five genetic variants; i.e., OPRM1 rs1799971 G allele, COMT rs4680 G allele, MMP1 rs1799750 2G allele, IL1 α rs1800587 T allele, IL1RN rs2234677 A allele, were associated with reduced recovery of LRP. Three biomarkers; i.e., TNF α , IL6 and IFN α , were associated with persistent LRP.

CONCLUSION:

The present results indicate that several genetic factors and biomarkers may predict slow recovery in LRP. Still, there is a need for replication of the findings. A stricter use of nomenclature is also highly necessary.

6. PELVIC GIRDLE

Coccyx pain

J Pain Res. 2016 Dec 7;9:1173-1177. eCollection 2016.

Transsacrococcygeal approach to ganglion impar: radiofrequency application for the treatment of chronic intractable coccydynia.

Adas C¹, Ozdemir U², Toman H³, Luleci N⁴, Luleci E⁵, Adas H⁶.

OBJECTIVE:

Coccydynia is defined as pain in the coccygeal region. Among the many causes of coccydynia, the most common cause is trauma as a result of falling on the buttocks, repetitive microtrauma, or childbirth. Several methods are currently used for the treatment of coccydynia, including nonsteroidal anti-inflammatory drugs, intrarectal manipulation, epidural injections, ganglion impar blocks, and radiofrequency treatment (RFT). Wemm and Saberski used the transsacrococcygeal methods to reduce tissue trauma. RFT is a percutaneous minimally invasive procedure. In this study, we aimed to assess the effect of the transsacrococcygeal approach on ganglion impar RFT in patients with chronic coccydynia.

METHODS:

We retrospectively examined the data of 41 patients at the Department of Anesthesiology and Reanimation, Faculty of Medicine, Maltepe University (Pain Clinic), between January 1, 2010, and December 31, 2012.

RESULTS:

The mean age of the patients was 46.68 ± 11.00 years (range 28-67 [46] years). The average pain duration was 3.10 ± 1.37 years. The difference between visual analog scale scores of the pre-and postprocedure was statistically significant. In the examinations carried out in the sixth month of the treatment, 90.2% of patients had a successful outcome, whereas treatment failed in 9.8% of patients. According to our patients' data, most of them had pain due to a trauma, were female, and overweight. Visual analog scale difference between preprocedure and early postprocedure, preprocedure and first month, preprocedure and sixth month were statistically significant ($P=0.001$).

CONCLUSION:

Based on the lower pain scores and low complication rates after the operations, the results suggest that application of RFT on ganglion impar by the transsacrococcygeal approach is an effective and safe method for the treatment of chronic coccydynia. Patient selection, technique, and experience are the most important factors affecting the success of this method.

7. PELVIC ORGANS/WOMAN'S HEALTH

Menses and cortisol

Cortisol awakening response is blunted and pain perception is increased during menses in cyclic women

Tuba Ozgocer Cihat Ucar Sedat Yildiz

Background and aims

The incidence of menstrual symptoms is reported to be as high as 90% in cyclic women. These symptoms, including anxiety and pain, might be associated with cortisol, as its receptors are widely distributed in the brain areas associated with behavior. Therefore, the current study aimed to assess the cortisol awakening response (CAR) throughout the menstrual cycle and correlate it with pain perception and trait anxiety.

Materials and methods

CAR was assessed by measuring salivary cortisol at 0, 15, 30, and 60 min following awakening in the same women ($n = 59$, age 22.2 ± 0.37 years) at various stages of the menstrual cycle (menses, midcycle, luteal and premenstrual phases). Progesterone and estradiol concentrations were also determined in saliva samples to assess cyclic changes. Self-reported pain, trait anxiety, and menstrual symptoms were assessed by visual analog scale (VAS), state-trait anxiety inventory (STAI-T), and the Daily Record of Severity of Problems (DRSP), respectively.

Results

Estradiol was significantly elevated during the midcycle period and remained high during the early luteal phase ($p < 0.05$). Progesterone was increased during the luteal phase ($p < 0.05$). Post-awakening cortisol values increased during midcycle, luteal phase, and premenstrual phase ($p < 0.05$, classical CAR), but not during the menses ($p > 0.05$, blunted or flat CAR). Positive and significant correlations were found between cortisol and estradiol ($R^2 = 0.322$; $p = 0.000$), cortisol and progesterone ($R^2 = 0.156$; $p = 0.000$), and estradiol and progesterone ($R^2 = 0.349$; $p = 0.001$). Premenstrual symptom scores were higher in the menses and premenstrual phases than in the midcycle and luteal phases ($p < 0.001$). Pain perception was the highest during the menses followed by the premenstrual phase ($p < 0.01$).

Conclusions

CAR was blunted during the menses, suggesting that cortisol might play a phase-specific role in the regulation of the cycle. Additionally, premenstrual symptoms, including pain, were more severe when ovarian steroid levels reduced (i.e., menses and the premenstrual phase).

Yoga and delivery pain

Yoga during pregnancy: The effects on labor pain and delivery outcomes (A randomized controlled trial)

Complementary Therapies in Clinical Practice , 01/03/2017

Jahdi F, et al.

The purpose of the study here was to examine the impacts of an antenatal yoga program on perceived maternal labor pain and delivery outcomes. The results demonstrate that yoga during pregnancy may contribute to a reduction pain of labor and enhanced adequacy of childbirth.

Methods

- It was a randomized control trial.
- 60 primiparous women, aged 18–35 years old, who were randomly assigned to either an antenatal yoga program or control groups were enrolled in this study.
- Labor pain and discomfort level of the members were measured utilizing a Visual Analogue Scale at cervical dilatation of 3–4 cm and at 2 and 4 h after the initial measurement.
- Demographic and obstetrical information were gathered.
- The antenatal yoga program consisted of a 1-h supervised yoga class, 3 times a weekly, beginning at 26 weeks gestation.

Results

- The results of this study showed that members in control group reported higher pain intensity compared to experimental group at 3–4 cm of dilatation ($p = 0.01$) and at 2 h after the first and the second measurements ($p = 0.000$).
- Findings revealed that mothers in the antenatal intervention group that finished the yoga class required a diminished frequency of labor induction in comparison with control group ($p = 0.008$).
- Moreover, mode of delivery of the intervention group resulted in a lower percentage of cesarean section than control group ($p = 0.002$).
- Finally, the intervention group experienced a shorter duration of the second and third stages of labor.
- Interval level data was analyzed by utilizing an independent t-test and chi-square.

Smoking and fetus health

Maternal smoking during pregnancy is associated with offspring's musculoskeletal pain in adolescence: Structural equation modeling

1. Anni-Julia Määttä, BM¹, Markus Paananen, MD, PhD^{1,2}, Riikka Marttila, MSc^{1,2}, Juha Auvinen, MD, PhD^{1,2,3}, Jouko Miettunen, PhD^{1,2,4} and Jaro Karppinen, MD, PhD^{1,2,5}

Introduction: Smoking and behavioral problems are related to musculoskeletal (MS) pain in adolescence. Maternal smoking during pregnancy (MSDP) is associated with offspring's behavioral problems but its relation to MS pain in adolescence is unknown. Our purpose was to investigate whether there is an association between MSDP, the number of pain sites in adolescence, and the factors that potentially mediate this relationship.

Methods: We evaluated the association of MSDP with offspring's MS pain at 16 years among participants of the Northern Finland Birth Cohort 1986 (n=6436, 3360 girls, 68% of all births) using Chi-square test and independent samples t-test. We used structural equation modeling (SEM) to assess the mediating factors stratified by gender.

Results: MSDP was frequent (22%) associating with paternal smoking ($p<0.001$), externalization problems at 8 years ($p=0.009$ boys, $p=0.002$ girls), offspring's smoking at 16 years ($p<0.001$), externalizing problems at 16 years ($p<0.001$), family's social class ($p<0.001$) and intactness of the family status ($p<0.001$). The mean number of offspring's MS pain sites was higher among adolescents whose mothers had smoked during pregnancy than among those whose mothers were non-smokers ($p=0.002$ boys, $p=0.012$ girls). The association between MSDP and MS pain at 16 years was mediated by externalizing problems at 8 years ($p<0.001$) and 16 years ($p<0.001$).

Conclusions: MSDP increased the risk of offspring's MS pain in adolescence, and the association was mediated by offspring's externalizing problems during childhood and early adolescence.

IMPLICATIONS This study indicate that maternal smoking during pregnancy (MSDP) increases the risk of musculoskeletal pain in adolescence and the effect is mediated by externalizing problems. Our results add to the evidence on harmfulness of MSDP for offspring, and can be used as additional information in interventions aiming to influence MSDP.

8. VISCERA

Opioid use and constipation

Neurogastroenterol Motil. 2016 Dec 25. doi: 10.1111/nmo.13000.

Opioid analgesic use among patients presenting with acute abdominal pain and factors associated with surgical diagnoses.

Khemani D¹, Camilleri M¹, Roldan A¹, Nelson AD¹, Park SY¹, Acosta A¹, Zinsmeister AR².

BACKGROUND:

The prevalence of chronic opioid use among non-cancer patients presenting with acute abdominal pain (AAP) is unknown. The aim was to characterize opioid use, constipation, diagnoses, and risk factors for surgical diagnoses among non-cancer patients presenting with AAP to an emergency department (ED).

METHODS:

We performed a retrospective, observational cohort study of all (n=16,121) adult patients (88% from MN, IA and WI) presenting during 2014 with AAP. We used electronic medical records, and focused on 2352 adults with AAP who underwent abdominal CT scan within 24 hours of presentation. We determined odds ratios of association with constipation and features predicting conditions that may require surgery (surgical diagnosis).

KEY RESULTS:

There were 2352 eligible patients; 18.8% were opioid users. Constipation was more frequent in opioid (35.1%) compared to non-opioid users [OR 2.88 (95% CI 2.28, 3.62)]. Prevalence of surgical diagnosis in the opioid and non-opioid users was 35.3% and 41.7% respectively (P=.019). By univariate analysis, age and neutrophil count independently predicted increased risk, and chronic opioid use decreased risk of surgical diagnosis. Internal validation of logistic models using a randomly selected validation subset (25% of entire cohort, 587/2352) showed receiver operating characteristic (ROC) curves for the validation and full cohorts were similar.

CONCLUSIONS AND INFERENCES:

Approximately 19% of adults presenting with AAP were opioid users; constipation is almost three times as likely in opioid users compared to non-opioid users presenting with AAP. Factors significantly associated with altered risk of surgical diagnoses were age, opioid use, and neutrophil count.

Reflux

Original Article - Gastroenterology (Clinical)**Quality of life, patient satisfaction, and disease burden in patients with gastroesophageal reflux disease with or without laryngopharyngeal reflux symptoms****Authors**

Eun Jeong Gong, Kee Don Choi, Hye-Kyung Jung, Oung Hoon Youn, Byung-Hoon Min, Kyung Ho Song, Kyu Chan Huh

Background and Aim

Patients with gastroesophageal reflux disease (GERD) have decreased health-related quality of life (HRQL). The quality of life in patients with laryngopharyngeal reflux (LPR) symptoms is also significantly impaired. However, the impact of LPR symptoms on HRQL in GERD patients has not been studied.

Methods

A nationwide, random-sample, and face-to-face survey of 300 Korean patients with GERD was conducted from January to March 2013. Gastroesophageal reflux symptoms were assessed using the Rome III questionnaire, LPR symptoms using the reflux symptom index, and HRQL using the EuroQol-5 dimensions (EQ-5D) questionnaire. A structured questionnaire on patient satisfaction, sickness-related absences, and health-related work productivity were also used.

Results

Among 300 patients with GERD, 150 had LPR symptoms. The mean EQ-5D index was lower in patients with GERD and LPR symptoms than in those without LPR (0.88 vs. 0.91, $p = 0.002$). A linear regression model showed that the severity of LPR symptoms was related to decreased HRQL and was independent of age, marital status, body mass index or household income. The overall satisfaction rate regarding treatment was lower in patients with GERD and LPR (40.0% vs. 69.1%, $p = 0.040$). GERD patients with LPR symptoms reported greater sickness-related absent hours per week (0.36 h vs. 0.02 h, $p = 0.016$) and greater percentages of overall work impairment than those without LPR (31.1% vs. 20.8%, $p < 0.001$).

Conclusions

GERD patients with LPR symptoms have a poorer HRQL, a lower satisfaction rate, and a greater disease burden than those without LPR.

Acupuncture helps constipation

Clinical observation on acupuncture treatment for constipation due to intestinal qi stagnation

Journal of Acupuncture and Tuina Science, 01/03/2017

Xu MH, et al.

The goal of this study was to compare the different therapeutic impacts of acupuncture and Phenolphthalein for constipation because of intestinal qi stagnation. Acupuncture and medication are useful in the treatment of constipation because of intestinal qi stagnation. Their short-term therapeutic impact is similar, however, the long-term therapeutic impact is better in the acupuncture group than in the medication group.

Methods

- A sum of 50 patients with constipation because of intestinal qi stagnation were arbitrarily divided into an acupuncture group and a medication group by the random digital table, 25 cases in every gathering.
- The patients in the acupuncture group were treated by puncturing Gongsun (SP 4), Sanyinjiao (SP 6), Taichong (LR 3), Zusanli (ST 36), Shangjuxu (ST 37), Hegu (LI 4), Lieque (LU 7), and Tianshu (ST 25), once every day, and 7 d as one course, for continuous 3 courses; while the patients in the medication group were given Phenolphthalein, 7 d as one course, for continuous 3 courses.
- Compared the Cleveland clinic constipation score (CCS) between the two groups after one course, 3 courses and 3 months after the treatment, as well as the frequency of defecation within 7 days.

Results

- After 7 days of treatment, CCS scores and frequency of defecation per week were much changed in both groups gatherings contrasted and those before treatment ($P < 0.05$), and CCS scores and frequency of defecation per week were enhanced more significantly in the patients of the medication group than in those of the acupuncture group ($P < 0.01$).
- After 3 weeks of treatment, CCS scores and frequency of defecation per week were significantly changed in both gatherings contrasted and those before treatment ($P < 0.05$), and CCS scores and frequency of defecation per week were enhanced more significant in the patients of the acupuncture group than in those of the medication group ($P < 0.05$).
- 3 months after the end of treatment, CCS scores and frequency of defecation per week were significantly changed in both gatherings contrasted and those before treatment ($P < 0.05$), and CCS scores and frequency of defecation per week were enhanced more significantly in the patients of the acupuncture group than in those of the medication group ($P < 0.05$).

Vit D levels**Vitamin D status and circulating biomarkers of endothelial dysfunction and inflammation in non-diabetic obese individuals: A pilot study**

Archives of Medical Science, 01/02/2017

Ilincic B, et al.

The results obtained from the pilot study indicate that vitamin D levels might be related to expanded levels of biomarkers of endothelial dysfunction and inflammation in obese non-diabetic individuals.

Methods

- For the purpose of this study, 50 obese (body mass index (BMI) ≥ 30 kg/m²) non-diabetic adults (mean age: 36.2 ± 5.4 years) without pre-existing cardiovascular abnormalities and 25 clinically healthy, normal weight and age-matched individuals were incorporated.
- After that, anthropometric parameters, markers of glucose and lipid metabolism, and serum levels of inflammatory and endothelial dysfunction biomarkers were evaluated in all subjects.

Results

- The results of this study showed that the mean serum 25(OH)D level was significantly lower in the obese group than in controls (33.5 ± 15.2 vs. 60.1 ± 23.1 nmol/l; $p < 0.001$).
- In the obese group, sE-selectin (36.4 (32.1 – 47.2) vs. 32.4 (24.6 – 35.5) ng/ml, $p < 0.05$) and hsCRP (6.0 ± 3.4 vs. 3.5 ± 1.0 mg/l, $p < 0.05$) were significantly higher in individuals with lower than median vitamin D levels (i.e. 31 nmol/l) compared with those with higher vitamin D levels.
- In multivariable linear regression analysis, hsCRP ($\beta = -0.43$; $p < 0.001$) and sE-selectin ($\beta = -0.30$; $p = 0.03$) were independently and significantly connected with serum 25(OH)D levels in the obese group.

Adipose and depression

Int J Obes (Lond). 2016 Dec 20. doi: 10.1038/ijo.2016.214.

Depressive symptoms, body composition and bone mass in young adults: a prospective cohort study.

Zhu K^{1,2}, Allen K^{3,4,5}, Mountain J⁶, Lye S⁷, Pennell C⁸, Walsh JP^{1,2}.

BACKGROUND:

An association between depression and obesity is well recognised, but longitudinal studies of depressive symptoms in adolescents as a predictor of body composition are lacking.

OBJECTIVE:

We examined depressive symptoms at age 14, 17 and 20 years as predictors of lean, fat and bone mass at age 20 years in a birth cohort.

SUBJECTS/METHODS:

In 1161 participants (569 females) in the Western Australia Pregnancy Cohort (Raine) Study, depressive symptoms were assessed using the Beck Depression Inventory for Youth at age 14 and 17 years, and the Depression, Anxiety and Stress Scale 21 at age 20 years. Participants were further classified into two trajectories using latent class analysis: no/transient and persistent/recurrent depression. At age 20 years, lean body mass (LBM), fat body mass (FBM) and total body bone mass were measured by dual-energy X-ray absorptiometry.

RESULTS:

In females, accounting for age and lifestyle factors, depression scores at age 14 and 20 years were positively associated with body weight, body mass index (BMI), FBM and % FBM ($r=0.110-0.184$, $P<0.05$) but negatively correlated with % LBM ($r=-0.120$, $P<0.05$) at age 20 years. Females in the persistent/recurrent depression trajectory ($n=99$) had significantly higher body weight (+5.1 kg), BMI (+1.8 kg m⁻²), FBM (+3.9 kg) and % FBM (+2.2%) and significantly lower % LBM (-2.2%) at age 20 years than those with no/transient depression ($n=470$; all $P<0.05$). In males, depression scores at age 17 and 20 years were negatively associated with LBM but not weight or BMI, and depression trajectory was not a predictor of body composition at age 20 years. Depression scores and trajectories did not predict bone mass in either males or females.

CONCLUSIONS:

Depressive symptoms and persistent/recurrent depression in adolescence are predictors of greater adiposity at age 20 years in females, but not males, but do not predict bone mass in either gender. International Journal of Obesity advance online publication, 20 December 2016; doi:10.1038/ijo.2016.214.

Probiotics and H pylori

Turk J Gastroenterol. 2016 Dec 23. doi: 10.5152/tjg.2016.0278.

Use of probiotics as an adjuvant to sequential H. pylori eradication therapy: impact on eradication rates, treatment resistance, treatment-related side effects, and patient compliance.

Çekin AH¹, Şahintürk Y, Harmandar FA, Uyar S, Yolcular BO, Çekin Y.

Author information

Abstract**BACKGROUND/AIMS:**

To evaluate the effect of probiotics administered as an adjuvant to sequential *Helicobacter pylori* (*H. pylori*) eradication therapy on treatment outcome and patient compliance.

MATERIALS AND METHODS:

In total, 159 patients with *H. pylori* infection receiving sequential *H. pylori* eradication therapy were included in this randomized placebo-controlled study. Starting from day 0 of sequential eradication therapy (ERA), patients in the ERA+probiotic group [n=53, mean (SD) age: 47.7 (14.0) years, 54.7% were females] also received a probiotic supplement with *Bifidobacterium animalis* subsp. *lactis* B94 (1 capsule/day), patients in the ERA+placebo group [n=52, mean (SD) age: 46.4 (13.4) years, 51.9% were males] received placebo treatment (1 capsule/day), and patients in the ERA-only group [n=54, mean (SD) age: 46.3 (11.9) years, 55.6% were females] received no additional treatments. Eradication rates, patient compliance, and side effects of eradication therapy were recorded in each treatment group.

RESULTS:

Significantly higher eradication rates were noted in the ERA+probiotic group (86.8% vs. 70.8%, p=0.025) than in the combined ERA (ERA-only and ERA-placebo) group. Non-compliance with anti-*H. pylori* treatment was noted in 24 (15.1%) of 159 patients. Lower rates of first week treatment non-compliance due to diarrhea (1.88% vs. 12.26%, p=0.036) were noted in the ERA+probiotic group than in the combined ERA (ERA-only and ERA-placebo) group. Treatment resistance (p: 0.389) was similar between the groups, indicating pure antibiotic resistance without any compliance problems. The number needed to treat for an additional beneficial outcome (NNTB) was 6.2 (CI 95%, 3.5 to 28.9) for probiotic use.

CONCLUSION:

In conclusion, adjuvant administration of probiotic (*B. animalis* subsp. *lactis*) in 2-week sequential *H. pylori* eradication therapy is associated with a higher *H. pylori* eradication rate, lower first week diarrhea-related treatment discontinuation rates, less common self-reported side effects, and higher treatment compliance.

IBS genetics

Eur J Gastroenterol Hepatol. 2017 Feb;29(2):160-168. doi: 10.1097/MEG.0000000000000760.

The obestatin/ghrelin ratio and ghrelin genetics in adult celiac patients before and after a gluten-free diet, in irritable bowel syndrome patients and healthy individuals.

Russo F¹, Chimienti G, Linsalata M, Clemente C, Orlando A, Riezzo G.
Author information

Abstract

BACKGROUND:

Ghrelin levels and obestatin/ghrelin ratio have been proposed as activity markers in ulcerative colitis, but no data are available in celiac disease (CD) and irritable bowel syndrome (IBS). Our aims were as follows: (a) to assess obestatin and ghrelin concentrations in adult active CD patients, diarrhea-predominant IBS (IBS-d), and healthy controls (HC) in relation to intestinal permeability; (b) to evaluate the ghrelin-obestatin profile in CD patients after a 1-year gluten-free diet (GFD); and (c) to establish the impact of ghrelin genetics.

METHODS:

The study included 31 CD patients, 28 IBS-d patients, and 19 HC. Intestinal permeability, assayed by high-performance liquid chromatography determination of urinary lactulose (La)/mannitol (Ma), and circulating concentrations of obestatin, ghrelin, and their ratio were evaluated at enrollment and after GFD. The ghrelin single nucleotide polymorphisms Arg51Gln (rs34911341), Leu72Met (rs696217), and Gln90Leu (rs4684677) were analyzed.

RESULTS:

Intestinal permeability was impaired in CD patients and ameliorated after GFD. Ghrelin was significantly ($P=0.048$) higher and the obestatin/ghrelin ratio was significantly ($P=0.034$) lower in CD patients compared with both IBS-d and HC, and GFD reduced the peptide levels, but without reaching the concentrations in HC. Significant differences ($P<0.05$) were found in the Leu72Met polymorphism among groups, with the reduction of the GT genotype and the T allele in both CD and IBS-d patients compared with HC.

CONCLUSION:

Intestinal permeability is altered in CD, but not in IBS-d patients, and ghrelin levels increase in CD patients as observed in other inflammatory conditions. Moreover, a role for ghrelin genetics is hypothesized in sustaining the many pathogenetic components of these different pathologies, but with a similar symptom profile.

B2 and breast CA

Arch Gynecol Obstet. 2016 Dec 29. doi: 10.1007/s00404-016-4278-4.

Dietary vitamin B2 intake and breast cancer risk: a systematic review and meta-analysis.

Yu L¹, Tan Y², Zhu L³.

Author information

Abstract

BACKGROUND:

Epidemiological studies assessing the relationship between dietary vitamin B2 and the risk of breast cancer have produced inconsistent results. Thus, we conducted this meta-analysis of epidemiologic studies to evaluate this association.

METHODS:

We searched English-language MEDLINE publications and conducted a manual search to screen eligible articles. A random-effect model was used to pool study-specific risk estimates. Egger's linear regression test was also used to detect publication bias in meta-analysis.

RESULTS:

In our meta-analysis, ten studies comprising totally 12,268 breast cancer patients were available in the analyses. Pooled relative risk (RR) comparing the highest to the lowest vitamin B2 intake and breast cancer incidence was 0.85 [95% confidence interval (CI) = 0.76-0.95]. No significant heterogeneity existed across the studies ($P = 0.086$, $I^2 = 40.7\%$). No publication bias was found. The results of dose-response analysis also showed that an increment of 1 mg/day was inversely related to the risk of breast cancer (RR = 0.94; 95% CI = 0.90-0.99).

CONCLUSIONS:

Results from our meta-analysis indicated that dietary vitamin B2 intake is weakly related to the reduced risk of breast cancer. Additional research is also necessary to further explore this association.

Vit D and polycystic ovarian syndrome

Arch Gynecol Obstet. 2016 Dec 9.

Effect of vitamin D on biochemical parameters in polycystic ovary syndrome women: a meta-analysis.

Xue Y¹, Xu P², Xue K¹, Duan X¹, Cao J¹, Luan T¹, Li Q³, Gu L⁴.

Author information

Abstract

AIM:

To investigate the therapeutical effect of vitamin D supplementation on the metabolism and endocrine parameters of PCOS patients.

MATERIALS AND METHODS:

Clinical studies investigating the therapeutic effect of vitamin D supplementation on PCOS patients were selected by searching PubMed, Embase, The Cochrane library and Web of Science until April 2016. The included articles were selected according to the inclusion criteria. Serum HOMA-IR, QUICKI, LDL, DHEAS, free testosterone (FT), total testosterone (TT), PTH, 25-hydroxy-vitamin D, and triglyceride of PCOS patients were enrolled for evaluating the therapeutic effects of vitamin D.

RESULTS:

16 studies were included in this study. There was no significant difference between the placebo group and vitamin D group in the concentration of serum 25-hydroxy-vitamin D in patients with PCOS ($P = 0.06$). After treated with vitamin D, the serum 25-hydroxy-vitamin D in PCOS patients was increased ($P < 0.00001$), while the serum PTH ($P = 0.003$) and triglyceride ($P = 0.006$) were decreased. In addition, the serum HOMA-IR, QUICKI, LDL, DHEAS, FT, and TT in PCOS patients did not change. Subgroup analysis showed that the serum triglyceride of PCOS patients was decreased by low dose of vitamin D supplementation ($<50,000$ IU) ($P = 0.03$), but no significantly changed by high-dose vitamin D supplementation ($\geq 50,000$ IU) ($P = 0.17$).

CONCLUSION:

Vitamin D supplementation significantly attenuates serum PTH and triglyceride in PCOS patients except for serum HOMA-IR, QUICKI, LDL, DHEAS, FT, and TT. Furthermore, less than 50,000 IU vitamin D supplementation is sufficient for decreasing serum triglyceride

Smoking and IBS

Smoking influences the need for surgery in patients with the inflammatory bowel diseases: A systematic review and meta-analysis incorporating disease duration

BMC Gastroenterology, 12/23/2016
Kuenzig ME, et al.

Physicians designed this study to explore the association between smoking status and time to first bowel resection in patients with Crohn's disease and ulcerative colitis. This meta-analysis concludes that current smokers with Crohn's disease are at increased risk of surgery, whereas former smokers with ulcerative colitis have increased risk of colectomy.

Methods

- MEDLINE and EMBASE were searched for these studies (n = 12) reporting on the association between smoking status (current, former, and never) and surgery in IBD, and incorporated disease duration in the analysis.
- By using random effects models, Hazard ratios (HR) with 95% confidence intervals (CI) were pooled across studies.

Results

- As compared to never smokers, current smokers with Crohn's disease were at increased risk of intestinal resection (HR 1.27, 95% CI 1.08 to 1.49).
- However, the study found no difference in the need for surgery when comparing former and never smokers (HR 1.11, 95% CI 0.95 to 1.30)
- There was no difference in the need for colectomy when comparing current smokers to never smokers (HR 0.98, 95% CI 0.67 to 1.44) in patients with ulcerative colitis.
- As compared to never smokers, former smokers with ulcerative colitis were at increased risk of colectomy (HR 1.38, 95% CI 1.04 to 1.83).

10 A. CERVICAL SPINE

Neuropathic pain classifications

Reg Anesth Pain Med. 2017 Jan/Feb;42(1):52-61. doi: 10.1097/AAP.0000000000000505.

Classification and Treatment of Chronic Neck Pain: A Longitudinal Cohort Study.

Liu R¹, Kurihara C, Tsai HT, Silvestri PJ, Bennett MI, Pasquina PF, Cohen SP.

Author information

Abstract

BACKGROUND AND OBJECTIVES:

Neck pain exerts a steep personal and socioeconomic toll, ranking as the fourth leading cause of disability. The principal determinant in treatment decisions is whether pain is neuropathic or nonneuropathic, as this affects treatment at all levels. Yet, no study has sought to classify neck pain in this manner.

METHODS:

One hundred participants referred to an urban, academic military treatment facility with a primary diagnosis of neck pain were enrolled and followed up for 6 months. Pain was classified as neuropathic, possible neuropathic, or nonneuropathic using painDETECT and as neuropathic, mixed, or nociceptive by s-LANSS (self-completed Leeds Assessment of Neuropathic Symptoms and Signs pain scale) and physician designation. Based on previous studies, the intermediate possible neuropathic pain category was considered to be a mixed condition. The final classification was based on a metric combining all 3 systems, slightly weighted toward physician's judgment, which is considered the reference standard.

RESULTS:

Fifty percent of participants were classified as having possible neuropathic pain, 43% as having nonneuropathic pain, and 7% with primarily neuropathic pain. Concordance was high between the various classification schemes, ranging from a low of 62% between painDETECT and physician designation for possible neuropathic pain, to 83% concordance between s-LANSS and the 2 other systems for neuropathic pain. Individuals with neuropathic pain reported higher levels of baseline disability, were more likely to have a coexisting psychiatric illness, and underwent surgery more frequently than other pain categories, but were also more likely to report greater reductions in disability after 6 months.

CONCLUSIONS:

Although pure neuropathic pain comprised a small percentage of our cohort, 50% of our population consisted of mixed pain conditions containing a possible neuropathic component. There was significant overlap between the various classification schemes

12 B. CERVICAL SURGERIES

First rib vascular anomalies

A fourteen-year experience with vascular anomalies encountered during transaxillary rib resection for thoracic outlet syndrome

Annals of Vascular Surgery, 01/03/2017

Yi JA, et al.

In this retrospective review, the authors encountered arterial anomalies during transaxillary approach to first rib resection and scalenectomy (TAFRRS) in 11% of operations and may present with vessel locations in unusual areas within the operative field, or as abnormal vessels penetrating the ASM (anterior scalene muscle), thus making scalenectomy precarious. They recommend physicians to be careful towards possible abnormal locations of vessels in the thoracic outlet to avoid bleeding complications.

13. CRANIUM/TMJ

Trigeminal nerve testing

J Oral Rehabil. 2016 Dec 23. doi: 10.1111/joor.12477.

Test-retest reliability of quantitative sensory testing for mechanical somatosensory and pain modulation assessment of masticatory structures.

Costa YM¹, Morita-Neto O¹, de Araújo-Júnior EN¹, Sampaio FA², Conti PC², Bonjardim LR¹.
Author information

Abstract

BACKGROUND:

Assessing the reliability of medical measurements is a crucial step toward the elaboration of an applicable clinical instrument. There are few studies that evaluate the reliability of somatosensory assessment and pain modulation of masticatory structures.

OBJECTIVES:

To estimate the test-retest reliability, i.e., over time, of the mechanical somatosensory assessment of anterior temporalis, masseter and temporomandibular joint (TMJ) and the conditioned pain modulation (CPM) using the anterior temporalis as the test site.

METHODS:

Twenty healthy women were evaluated in two sessions by the same examiner one week apart. Mechanical detection threshold (MDT), mechanical pain threshold (MPT), wind-up ratio (WUR) and pressure pain threshold (PPT) were assessed on the skin overlying the anterior temporalis, masseter and TMJ of the dominant side. CPM was tested by comparing PPT before and during the hand's immersion in a hot water bath. ANOVA and Intraclass Correlation Coefficients (ICCs) were applied to the data ($\alpha=5\%$).

RESULTS:

The overall ICCs showed acceptable values for the test-retest reliability of mechanical somatosensory assessment of masticatory structures. The ICC values of 75% of all quantitative sensory measurements were considered fair to excellent (fair = 8.4%, good = 33.3% and excellent = 33.3%). However, the CPM paradigm presented poor reliability (ICC=0.25).

CONCLUSION:

The mechanical somatosensory assessment of the masticatory structures, but not the proposed CPM protocol, can be considered sufficiently reliable over time to evaluate the trigeminal sensory function. This article is protected by copyright. All rights reserved.

TMJ and emotions

J Oral Rehabil. 2016 Dec 30. doi: 10.1111/joor.12479.

Associations of pain intensity and pain-related disability with psychological and socio-demographic factors in patients with temporomandibular disorders: a cross-sectional study at a specialized dental clinic.

Su N^{1,2,3}, Lobbezoo F⁴, van Wijk A³, van der Heijden GJ³, Visscher CM⁴.

Author information

Abstract

The study assessed whether psychological and socio-demographic factors, including somatization, depression, stress, anxiety, daytime sleepiness, optimism, gender and age are associated with pain intensity and pain-related disability in patients with temporomandibular disorders (TMD).

In total, 320 TMD patients were involved in the study. The psychological status of each patient was assessed with questionnaires, including the Symptom Checklist-90 (SCL-90), Epworth Sleeping Scale (ESS), stress questionnaire, and Life Orientation Test-Revised (LOT-R). TMD pain, including pain intensity and pain-related disability, was assessed with characteristic pain intensity (CPI) and disability points scales. The associations of psychological and socio-demographic factors with pain intensity and pain-related disability were assessed through logistic regression analyses. Higher pain intensity was significantly associated with more severe anxiety ($P = 0.004$), more severe somatization ($P < 0.001$), more severe depression ($P < 0.001$), more severe stress ($P = 0.001$), and lower optimism ($P = 0.025$) in univariate regression analyses. However, multiple regression analysis showed that only somatization was significantly associated with pain intensity ($P < 0.001$). Higher pain-related disability was significantly associated with more severe anxiety ($P < 0.001$), more severe somatization ($P < 0.001$), more severe depression ($P < 0.001$), more severe stress ($P < 0.001$) and lower optimism ($P = 0.003$) in univariate regression analyses.

However, multiple regression analysis showed that only depression was significantly associated with pain-related disability ($P = 0.003$). Among the psychological and socio-demographic factors in the present study, somatization was the best predictor for pain intensity, while depression was the best predictor for pain-related disability. This article is protected by copyright. All rights reserved.

Mandibular arch

Instability of the mandibular dental arch? Look again!

Donald J. Ferguson, DMD, MSD (Professor & Dean L Makki MT Wilcko (Periodontist) WM Wilcko(Orthodontist)

Changes in mandibular dental arch parameters have been thoroughly investigated as a function of time after removal of orthodontic appliances and instability tenets have emerged.

To date, only permanent fixed retention as a posttreatment strategy has been demonstrated effective against changes in mandibular anterior alignment. No active orthodontic therapy has been shown to improve mandibular arch outcome stability except augmented corticotomy significantly reduced 5- and 10-year rate of change in mandibular irregularity index. The purposes of this study were, 1) to evaluate efficacy of augmented corticotomy in stabilizing posttreatment mandibular arch widths and length, and 2) to review mandibular dental arch instability data from the scholarly literature. Results demonstrated augmented corticotomy effective in the 5-year short term for stabilizing intercanine width and arch length but not 10-year long term. Data extracted from 76 separate publications representing 4250 subjects reaffirmed the consensus view that irregularity index will increase and there will be decreases in arch width and length as a function of time.

It was concluded that alveolar decortication + augmentation bone grafting (PAOO) is the only active orthodontic treatment strategy that will stabilize mandibular irregularity index for at least a decade, and permanent fixed canine-to-canine retention is the only posttreatment orthodontic strategy that will preclude recrowding and intercanine width decrease in the mandibular anterior segment

Mandibular advancement

Int J Oral Maxillofac Surg. 2016 Dec 29. pii: S0901-5027(16)30326-5. doi: 10.1016/j.ijom.2016.11.017.

Maxillary advancement versus mandibular setback in class III dentofacial deformity: are there any differences in aesthetic outcomes?

Ghassemi M¹, Hilgers RD², Fritz U³, Modabber A⁴, Ghassemi A⁵.
Author information

Abstract

A retrospective evaluation of maxillary advancement and mandibular setback in class III patients was performed and their aesthetic outcomes compared. Patients with a sella-nasion-A-point angle (SNA) of 80-84° were selected. Pre- and postoperative lateral cephalograms were obtained for 34 class III patients; these were divided into two groups according to the surgical procedure performed: mandibular setback group (n=17) and maxillary advancement group (n=17). The pre- and postoperative cervical length, lip-chin-throat angle, lower/upper lip thickness, distance from the lower/upper lip to the aesthetic line, soft tissue angle, facial contour angle, and nasolabial angle of the two groups were compared. Significant differences were observed for cervical length (P=0.0003) and sex (P=0.003) when comparing maxillary advancement with mandibular setback. Although the preoperative cervical length was similar in the two groups, it increased significantly after maxillary advancement and decreased after mandibular setback.

In this study, the differences in aesthetic outcomes depending on the surgical procedure performed were considered. Some aesthetically important parameters proved to be superior after maxillary advancement when compared to mandibular setback, even with the maxilla in the normal position.

Retainers and bone loss

Am J Orthod Dentofacial Orthop. 2017 Jan;151(1):74-81. doi: 10.1016/j.ajodo.2016.06.029.

Cone-beam computed tomographic evaluation of the long-term effects of orthodontic retainers on marginal bone levels.

Westerlund A¹, Oikimoui C², Ransjö M³, Ekestubbe A⁴, Bresin A⁵, Lund H⁴.
Author information

Abstract

INTRODUCTION:

Fixed retainers are widely used after orthodontic treatment, sometimes for extended periods, despite insufficient knowledge of their possible long-term adverse effects on the periodontium. The aim of this study was to evaluate whether bonded orthodontic retainers have an adverse long-term effect on the marginal bone levels of the mandibular front teeth.

METHODS:

The study included 62 consecutive patients in 3 groups: (1) patients who underwent orthodontic treatment and wore a fixed retainer for 10 years, (2) patients who underwent orthodontic treatment but did not have a fixed retainer, and (3) untreated controls. The marginal bone levels were measured by cone-beam computed tomography 10 years after treatment. Additionally, multivariate data analysis was used to analyze possible correlations between the marginal bone levels at 10 years and the variables obtained from the study casts and profile radiographs.

RESULTS:

The results demonstrated a significantly lower marginal bone level on the buccal side of the mandibular front teeth in the orthodontically treated patients compared with the orthodontically untreated group. There was no difference in the marginal bone levels between the retainer group and the no-retainer group. Multivariate analysis indicated that a low marginal bone level was correlated with a basal open vertical relationship, posterior rotation of the mandible, pretreatment of the incisor protrusion, and extraction therapy.

CONCLUSIONS:

Within the limits of this research design, the long-term retention phase in general does not seem to cause any adverse effects on the marginal bone levels after 10 years

14. HEADACHES

Ped HA's and CBT

Headache. 2016 Dec 28. doi: 10.1111/head.13016.

A Systematic Review and Meta-Analysis of the Efficacy of Cognitive Behavioral Therapy for the Management of Pediatric Migraine.

Ng QX¹, Venkatanarayanan N², Kumar L¹.

Author information

Abstract

INTRODUCTION:

Migraine headaches are common in children and adolescents. Current pharmacologic treatment options are limited despite the prevalence and debilitating effects of pediatric migraine. Cognitive behavioral therapy (CBT) is an evidence-based practice that focuses on the development of coping strategies and cognitive restructuring to alter the pain experience. Till date, no meta-analysis has been done to examine the use of CBT in pediatric migraine.

METHODS:

Using the keywords (cognitive behavioral therapy OR cognitive behavior therapy OR cognitive behavioral therapy OR cognitive behavior therapy OR CBT) AND (headache OR migraine), a preliminary search on the PubMed and Ovid database yielded 3841 articles published in English between 1 Jan 1980 and 1 May 2016. Full articles were also reviewed for references of interest. After data extraction, 14 studies were included in the meta-analysis.

RESULTS:

The results of the meta-analysis well-support the clinical role of CBT in the management of pediatric migraine. The pooled odds ratios of clinically significant improvement, that is, 50% or greater headache activity reduction post-treatment and at follow-up (3 months or later) were OR 9.11 (95% CI: 5.01 to 16.58, $P < .001$) and OR 9.18 (95% CI: 5.69 to 14.81, $P < .001$) respectively, demonstrating significant clinical improvement with CBT as compared with wait-list control, placebo, or standard medication. Furthermore, the clinical improvement was stable, even at a 1-year follow-up as evident in some of the studies.

CONCLUSION:

There is good evidence that CBT is beneficial to children suffering from migraine, and may also augment the efficacy of standard medications such as amitriptyline.

19. GLENOHUMERAL/SHOULDER

Shoulder pain and optimism

RESEARCH REPORT

Optimism Moderates the Influence of Pain Catastrophizing on Shoulder Pain Outcome: A Longitudinal Analysis

Authors: Rogelio A. Coronado, PT, PhD¹, Corey B. Simon, DPT, PhD², Trevor A. Lentz, PT³, Charles W. Gay, DC, PhD⁴, Lauren N. Mackie, MS³, Steven Z. George, PT, PhD^{2,5}

Published: *Journal of Orthopaedic & Sports Physical Therapy*,
2016 **Volume:**47 **Issue:**1 **Pages:**21–30 **DOI:**10.2519/jospt.2017.7068

Study Design Secondary analysis of prospectively collected data.

Background An abundance of evidence has highlighted the influence of pain catastrophizing and fear avoidance on clinical outcomes. Less is known about the interaction of positive psychological resources with these pain-associated distress factors.

Objective To assess whether optimism moderates the influence of pain catastrophizing and fear avoidance on 3-month clinical outcomes in patients with shoulder pain.

Methods Data from 63 individuals with shoulder pain (mean \pm SD age, 38.8 \pm 14.9 years; 30 female) were examined. Demographic, psychological, and clinical characteristics were obtained at baseline. Validated measures were used to assess optimism (Life Orientation Test-Revised), pain catastrophizing (Pain Catastrophizing Scale), fear avoidance (Fear-Avoidance Beliefs Questionnaire physical activity subscale), shoulder pain intensity (Brief Pain Inventory), and shoulder function (Pennsylvania Shoulder Score function subscale). Shoulder pain and function were reassessed at 3 months. Regression models assessed the influence of (1) pain catastrophizing and optimism and (2) fear avoidance and optimism. The final multivariable models controlled for factors of age, sex, education, and baseline scores, and included 3-month pain intensity and function as separate dependent variables.

Results Shoulder pain (mean difference, -1.6 ; 95% confidence interval [CI]: $-2.1, -1.2$) and function (mean difference, 2.4 ; 95% CI: $0.3, 4.4$) improved over 3 months. In multivariable analyses, there was an interaction between pain catastrophizing and optimism ($\beta = 0.19$; 95% CI: $0.02, 0.35$) for predicting 3-month shoulder function ($F = 16.8, R^2 = 0.69, P < .001$), but not pain ($P = .213$). Further examination of the interaction with the Johnson-Neyman technique showed that higher levels of optimism lessened the influence of pain catastrophizing on function. There was no evidence of significant moderation of fear-avoidance beliefs for 3-month shoulder pain ($P = .090$) or function ($P = .092$).

Conclusion Optimism decreased the negative influence of pain catastrophizing on shoulder function, but not pain intensity. Optimism did not alter the influence of fear-avoidance beliefs on these outcomes

31. KNEE

Single leg hop test

Knee. 2016 Dec 17. pii: S0968-0160(16)30146-6. doi: 10.1016/j.knee.2016.09.004.

Validity and reliability of a novel instrumented one-legged hop test in patients with knee injuries.

Mani K¹, Brechue WF², Friesenbichler B³, Maffiuletti NA⁴.

Author information

Abstract

BACKGROUND:

Conventional one-legged hop tests simply evaluate the total hop distance, thus neglecting important temporal and spatial parameters related to the strategy of execution, such as foot contact time.

AIM:

To examine the validity and reliability of an instrumented one-legged hop test, the "four hops, three contacts" (4H3C) test, in patients with knee injuries.

METHODS:

The 4H3C test consists of four consecutive one-legged hops, of which individual hop distance and foot contact time are recorded by a validated floor-based photocell system. We examined the test-retest reliability, discriminant validity (involved vs. uninvolved side) and convergent validity (relation with maximal voluntary strength) of consecutive hop distance and foot contact time parameters in 50 patients with unilateral knee injuries.

RESULTS:

Test-retest reliability was very high for hop distance (intraclass correlation coefficients: 0.91 to 0.97) and high for contact time variables (intraclass correlation coefficients: 0.75 to 0.88). The difference between the involved and the uninvolved side was significant for all hop distance and contact time parameters ($p < 0.05$). Maximal voluntary strength was correlated to both hop distance ($r = 0.67$; $p < 0.001$) and contact time ($r = -0.42$; $p < 0.01$) variables.

CONCLUSION:

The 4H3C is a valid and reliable test for the evaluation of single hops in patients with knee injuries and may be useful in sport and clinical settings. The interpretation of foot contact time data requires however some caution.

33. MENISCUS

Pain and meniscal damage

Associations among meniscal damage, meniscal symptoms and knee pain severity

Osteoarthritis and Cartilage , 01/03/2017

MacFarlane LA, et al.

Authors attempted to explore if a correlation exists between magnetic resonance imaging (MRI) depiction of meniscal damage and the severity of knee pain or the frequency of meniscal symptoms in patients with knee osteoarthritis (OA). They found that the root tears afflicted pain was greater than the pain produced by meniscal tears or maceration. In addition, they did not find a relationship between meniscal damage and meniscal symptoms.

Summary

Objective

Meniscal tears occur frequently in patients with knee osteoarthritis (OA). The aim of our study was to determine whether meniscal damage identified on magnetic resonance imaging (MRI) is associated with the severity of knee pain or the frequency of meniscal symptoms in patients with knee OA.

Methods

We performed a cross-sectional study using data from the Meniscal Tear in Osteoarthritis Research (MeTeOR) trial. We characterized meniscal damage hierarchically as: root tear; maceration; long and short complex or horizontal tears; and simple tears. Subjects completed the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) Pain Scale and a survey of frequency of meniscal symptoms. We used multivariable general linear models to assess the relationships between meniscal damage and a) pain severity; and b) meniscal symptoms, after adjusting for demographic and radiographic features. In further analysis root tear was considered as a binary variable.

Results

Analysis included 227 knees. Root tears were present in 19%, maceration in 14%, long complex or horizontal tears in 22%, short complex or horizontal tears in 30%, and simple tears in 14%. Root tears were associated with higher WOMAC pain scores. The adjusted mean WOMAC Pain score was 45.2 (SE 2.7) for those with root tear and 38.7 (SE 1.2) for subjects without root tear ($p=0.03$). We did not find statistically significant associations between meniscal morphology and frequency of meniscal symptoms.

Conclusion

Root tears were associated with greater pain than meniscal tears or maceration. We did not find a relationship between meniscal damage and meniscal symptoms.

34. PATELLA

Stresses on

RESEARCH REPORT**Trunk and Shank Position Influences Patellofemoral Joint Stress in the Lead and Trail Limbs During the Forward Lunge Exercise****Authors:** Cory L. Hofmann, MS¹, Derek T. Holyoak, MS², Paul M. Juris, EdD^{1,3}**Published:** *Journal of Orthopaedic & Sports Physical Therapy*, 2016 **Volume:**47 **Issue:**1 **Pages:**31–40 **DOI:**10.2519/jospt.2017.6336**Study Design**

Controlled laboratory study, repeated-measures design.

Background

The effects of trunk and shank position on patellofemoral joint stress of the lead limb have been well studied; however, the effects on the trail limb are not well understood.

Objectives

To test the hypothesis that trunk and shank position may influence patellofemoral joint stress in both limbs during the forward lunge exercise.

MethodsPatellofemoral kinetics were quantified from 18 healthy participants performing the lunge exercise with different combinations of trunk and shank positions (vertical or forward). A 2-by-3 (limb-by-lunge variation) repeated-measures analysis of variance was performed, using paired *t* tests for post hoc comparisons.**Results**The trail limb experienced greater total patellofemoral joint stress relative to the lead limb, regardless of trunk and shank position ($P<.0001$). The lunge variation with a vertical shank position resulted in significantly greater peak patellofemoral joint stress in the trail limb relative to the lead limb ($P<.0001$). A forward trunk and shank position resulted in the highest patellofemoral stress in the lead limb ($P<.0001$).**Conclusion**Trunk and shank positions have a significant influence on patellofemoral joint loading of both limbs during the forward lunge, with the trail limb generally experiencing greater total joint stress. Restricting forward translation of the lead-limb shank may reduce patellofemoral joint stress at the expense of increased stress in the trail limb. Technique recommendations should consider the demands imposed on both knees during this exercise. *J Orthop Sports Phys Ther* 2017;47(1):31–40. Epub 4 Nov 2016. doi:10.2519/jospt.2017.6336

35. KNEE/TOTAL

Smoking and joint replacement

The causal role of smoking on the risk of hip or knee replacement due to primary osteoarthritis: a Mendelian randomisation analysis of the HUNT Study

Marianne Bakke Johnsen Gunnhild Åberge Vie, PhD Bendik Slagsvold Winsvold, PhD Johan Håkon Bjørngaard, PhD Bjørn Olav Åsvold, P Maiken Elvestad Gabrielsen, PhD Linda Margareth Pedersen, PhD Alf Inge Hellevik, MD Arnulf Langhammer Ove Furnes Gunnar Birkeland Flugsrud Frank Skorpen, PhD Pål Richard Romundstad, PhD Kjersti Storheim Lars Nordsletten John Anker Zwart

Abstract

Objective

Smoking has been associated with a reduced risk of hip and knee osteoarthritis and subsequent joint replacement. The aim of the present study was to assess whether the observed association is likely to be causal.

Method

55 745 participants of a population-based cohort were genotyped for the rs1051730 C>T single-nucleotide polymorphism, a proxy for smoking quantity among smokers. A Mendelian randomization analysis was performed using rs1051730 as an instrument to evaluate the causal role of smoking on the risk of hip or knee replacement (combined as total joint replacement (TJR)). Association between rs1051730 T alleles and TJR was estimated by hazard ratios (HRs) and 95% confidence intervals (CIs). All analyses were adjusted for age and sex.

Results

Smoking quantity (no. of cigarettes) was inversely associated with TJR (HR 0.97, 95% CI 0.97-0.98). In the Mendelian randomization analysis, rs1051730 T alleles were associated with reduced risk of TJR among current smokers (HR 0.84, 95% CI 0.76 to 0.98, per T allele), however we found no evidence of association among former (HR 0.97, 95% CI 0.88 to 1.07) and never smokers (HR 0.97, 95% CI 0.89 to 1.06). Neither adjusting for body mass index, cardiovascular disease nor accounting for the competing risk of mortality substantially changed the results.

Conclusion

This study suggests that smoking may be causally associated with the reduced risk of TJR. Our findings add support to the inverse association found in previous observational studies. More research is needed to further elucidate the underlying mechanisms of this causal association.

37. OSTEOARTHRITIS/KNEE**Radiofrequency**

Reg Anesth Pain Med. 2017 Jan/Feb;42(1):62-68. doi: 10.1097/AAP.0000000000000510.

Analgesic Effect and Functional Improvement Caused by Radiofrequency Treatment of Genicular Nerves in Patients With Advanced Osteoarthritis of the Knee Until 1 Year Following Treatment.

Santana Pineda MM¹, Vanlinthout LE, Moreno Martín A, van Zundert J, Rodriguez Huertas F, Novalbos Ruiz JP.

Author information

Abstract**BACKGROUND AND OBJECTIVES:**

Radiofrequency ablation of genicular nerves has proved to be successful in relieving pain and incapacity caused by osteoarthritis of the knee. However, long-term efficacy of such a treatment remains to be assessed. The current study aimed to reproduce radiofrequency neurotomy of genicular nerves to manage gonarthrosis pain and disability and establish therapeutic response until 1 year after intervention.

METHODS:

This single-center, prospective, observational, noncontrolled, longitudinal study included patients with grade 3 to 4 gonarthrosis suffering from intractable knee pain, scoring 5 or more on the visual analog scale (VAS) during >6 months. Therapy was based on ultrasound guided radiofrequency neurotomy of the superior medial, superior lateral and inferior medial genicular nerves. Visual analog scale and Western Ontario and McMaster Universities Osteoarthritis scores were assessed before therapy and at 1, 6, and 12 months following treatment.

RESULTS:

Radiofrequency neurotomy of genicular nerves significantly reduced perceived pain (VAS) and disability (Western Ontario and McMaster Universities Osteoarthritis) in the majority of participants, without untoward events. The proportion of participants with improvement of 50% or greater in pretreatment VAS scores at 1, 6, and 12 months following intervention were 22/25 (88%), 16/25 (64%) and 8/25 (32%), respectively.

CONCLUSIONS:

Ultrasound-guided radiofrequency neurotomy of genicular nerves alleviates intractable pain and disability in the majority of patients with advanced osteoarthritis of the knee. Such a treatment is safe and minimally invasive and can be performed in an outpatient setting. The beneficial effect of treatment started to decline after 6 months, but even 1 year after the intervention, 32% of patients reported 50% improvement or greater in pretreatment VAS scores.

Synovitis

Arthritis Care Res (Hoboken). 2016 Dec 20. doi: 10.1002/acr.23162.

Associations between clinical evidence of inflammation and synovitis in symptomatic knee osteoarthritis: A substudy of the VIDEO trial.

Wallace G¹, Cro S², Doré C², King L³, Kluzek S¹, Price A¹, Roemer F⁴, Guermazi A⁵, Keen R⁶, Arden N⁷.

Objective Painful knee osteoarthritis (KOA) has been associated with joint inflammation. There is however little literature correlating signs of localised inflammation with Contrast-enhanced (CE) Magnetic resonance imaging (MRI) of synovium. This study examined the relationship between clinical and functional markers of localised knee inflammation and CE MRI based synovial scores.

Methods Patients with symptomatic KOA were enrolled into the randomised, double-blind, Vitamin D Evaluation in Osteoarthritis (VIDEO) trial. In this cross-sectional substudy, associations between validated MRI based semi-quantitative synovial scores of the knee and the following markers of inflammation were investigated; self-reported pain and stiffness, effusion, warmth, joint line tenderness, erythrocyte sedimentation rate, radiographic severity and functional ability tests.

Results 107 patients satisfied the inclusion criteria of complete data and were included in the analysis. Significant associations were found between the number of regions affected by synovitis and WOMAC pain, effusion and joint line tenderness. Each additional region affected by synovitis was associated with an increase in WOMAC pain (1.82; 95% CI 0.05-3.58; p=0.04) and the association with extent of medial synovitis was particularly strong (3.21; 95% CI 0.43-5.99; p=0.02). Extent of synovitis was positively associated with effusion (OR=1.69; 95% CI 1.37-2.08, p<0.01), and negatively associated with joint line tenderness (RR= 0.87; 95% CI 0.84-0.90; p<0.01).

Conclusion There is a strong positive association between synovitis, and self-reported patient pain and clinically detectable effusion. Non-operative treatments directed at management of inflammation and future trials targeting the synovial tissue for treating KOA should consider these two factors as potential inclusion criteria. This article is protected by copyright. All rights reserved.

PRP helps

Arthroscopy. 2016 Dec 22. pii: S0749-8063(16)30780-0. doi: 10.1016/j.arthro.2016.09.024.

Efficacy of Platelet-Rich Plasma in the Treatment of Knee Osteoarthritis: A Meta-analysis of Randomized Controlled Trials.

Dai WL¹, Zhou AG¹, Zhang H¹, Zhang J².

Author information

Abstract**PURPOSE:**

To use meta-analysis techniques to evaluate the efficacy and safety of platelet-rich plasma (PRP) injections for the treatment knee of osteoarthritis (OA).

METHODS:

We performed a systematic literature search in PubMed, Embase, Scopus, and the Cochrane database through April 2016 to identify Level I randomized controlled trials that evaluated the clinical efficacy of PRP versus control treatments for knee OA. The primary outcomes were Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain and function scores. The primary outcomes were compared with their minimum clinically important differences (MCID)-defined as the smallest difference perceived as important by the average patient.

RESULTS:

We included 10 randomized controlled trials with a total of 1069 patients. Our analysis showed that at 6 months postinjection, PRP and hyaluronic acid (HA) had similar effects with respect to pain relief (WOMAC pain score) and functional improvement (WOMAC function score, WOMAC total score, International Knee Documentation Committee score, Lequesne score). At 12 months postinjection, however, PRP was associated with significantly better pain relief (WOMAC pain score, mean difference -2.83, 95% confidence interval [CI] -4.26 to -1.39, $P = .0001$) and functional improvement (WOMAC function score, mean difference -12.53, 95% CI -14.58 to -10.47, $P < .00001$; WOMAC total score, International Knee Documentation Committee score, Lequesne score, standardized mean difference 1.05, 95% CI 0.21-1.89, $P = .01$) than HA, and the effect sizes of WOMAC pain and function scores at 12 months exceeded the MCID (-0.79 for WOMAC pain and -2.85 for WOMAC function score). Compared with saline, PRP was more effective for pain relief (WOMAC pain score) and functional improvement (WOMAC function score) at 6 months and 12 months postinjection, and the effect sizes of WOMAC pain and function scores at 6 months and 12 months exceeded the MCID. We also found that PRP did not increase the risk of adverse events compared with HA and saline.

CONCLUSIONS:

Current evidence indicates that, compared with HA and saline, intra-articular PRP injection may have more benefit in pain relief and functional improvement in patients with symptomatic knee OA at 1 year postinjection.

OA and activity

J Clin Rheumatol. 2017 Jan;23(1):26-32. doi: 10.1097/RHU.0000000000000473.

Do Inactive Older Adults Who Increase Physical Activity Experience Less Disability: Evidence From the Osteoarthritis Initiative.

Song J¹, Gilbert AL, Chang RW, Pellegrini CA, Ehrlich-Jones LS, Lee J, Pinto D, Semanik PA, Sharma L, Kwok CK, Jackson RD, Dunlop DD.

Author information

Abstract**BACKGROUND:**

Physical inactivity is a leading risk factor for developing disability. Although randomized clinical trials have demonstrated improving physical activity can reduce this risk in older adults with arthritis, these studies did not specifically evaluate inactive adults.

OBJECTIVES:

The aim of this study was to evaluate the relationship of changes in physical activity with disability changes among initially inactive adults with or at high risk of knee osteoarthritis from Osteoarthritis Initiative.

METHODS:

Inactive persons were identified at baseline based on the US Department of Health and Human Services classification (no [zero] 10-minute session of moderate-to-vigorous [MV] activity over 1 week) from objective accelerometer monitoring. Two years later, physical activity change status was classified as follows: (1) met Federal physical activity guidelines (≥ 150 MV minutes/week acquired in bouts ≥ 10 minutes), (2) insufficiently increased activity (some but < 150 MV bout minutes/week), or (3) remained inactive. Disability at baseline and 2 years was assessed by Late Life Disability Instrument limitation and frequency scores. Multiple regression evaluated the relationship of physical activity change status with baseline-to-2-year changes in disability scores adjusting for socioeconomic, health factors, and baseline disability score.

RESULTS:

Increased physical activity showed a graded relationship with improved disability scores in Late Life Disability Instrument limitation ($P < 0.001$) and frequency scores ($P = 0.027$). While increasing MV activity to guideline levels showed the greatest reduction, even insufficiently increased physical activity was related to reduced disability.

CONCLUSIONS:

Findings support advice to increase MV physical activity to reduce disability among inactive adults with or at high risk of knee osteoarthritis, even when guidelines are not met.

OA and smoking**Association between smoking and risk of knee osteoarthritis: A systematic review and meta-analysis**

Osteoarthritis and Cartilage , 12/23/2016

Kong L, et al.

In this meta-analysis, researchers found an inverse correlation between cigarette smoking and risk of knee osteoarthritis, irrespective of study design. This association was more apparent in males. Despite, they have not demonstrated a causal relationship between smoking and osteoarthritis, and further investigations are needed.

Methods

- Clinicians obtained a cohort, case-control, and cross-sectional studies from the Medline, Embase, and Web of Science databases.
- They were calculated estimates applying a random-effects model.
- They conducted subgroup analyses and meta-regression models to evaluate potential sources of heterogeneity.
- They further evaluated the dose-response relationship between cigarette consumption and risk of knee OA.

Results

- They examined 38 independent observational studies consisting of 481,744 participants.
- Results showed that those who had ever smoked had a significantly decreased risk of developing knee OA relative to those who had never smoked (RR=0.80; 95% CI 0.73 to 0.88).
- This was unaffected by study design, and the pooled RRs were 0.79 (95% CI, 0.65 to 0.96), 0.71 (95% CI, 0.61 to 0.84) and 0.83 (95% CI, 0.73 to 0.94) for cohort, case-control, and cross-sectional studies, respectively.
- It was revealed that analysis of subgroups stratified by gender reduced the heterogeneity from moderate to low in both males and females.
- They detected that the lower risk for developing knee OA was more apparent in male smokers (RR=0.69; 95% CI 0.58 to 0.80) than female smokers (RR=0.89; 95% CI 0.77 to 1.02) and dose-response analysis showed a linear decrease in knee OA with increased cigarette consumption.

38 B. FOOT TYPES**Flatfoot and patellar impact**

J Foot Ankle Surg. 2017 Jan - Feb;56(1):15-18. doi: 10.1053/j.jfas.2016.10.001.

Investigation of the Relationship Between Flatfoot and Patellar Subluxation in Adolescents.

Han Y¹, Duan D², Zhao K³, Wang X³, Ouyang L³, Liu G¹.

Author information

Abstract

Patellar subluxation is common in adolescents, and a variety of factors are related to this condition, with valgus of the knee joint an important factor.

The results of many studies suggest that flatfoot can cause an abnormality of the lower limb power line. Structural abnormalities of the foot caused by the high stresses exerted by body weight can lead to structural deformity of the knee and can also cause knee valgus. Screening for foot problems can help determine the risk of patellar subluxation, and early intervention can lessen the incidence of this condition.

The purpose of the present study was to investigate the effects of flatfoot on the structure and function of the knees and, especially, the risk of patellar subluxation. A total of 72 participants were recruited for this cross-sectional study. The mean age at examination was 15.4 ± 4.0 (range 9 to 22) years. The measured parameters were heel valgus angle, arch index, and quadriceps angle (Q-angle).

Overall, the mean values of the heel valgus angle, arch index, and Q-angle were $5.9^\circ \pm 2.4^\circ$ (range 1° to 11°), 0.33 ± 0.07 (range 0.23 to 0.46), and $19.1^\circ \pm 3.5^\circ$ (range 9° to 26°), respectively. The Q-angle was directly associated with the heel valgus angle ($r = 0.818$, $p < .001$) and arch index ($r = 0.655$, $p < .001$). We found that flatfoot can affect the morphology of the knee joint and increase the risk of patellar subluxation.

44. RHUMATOID ARTHRITIS

Inflammatory arthritis and depression

J Psychosom Res. 2017 Jan;92:49-54. doi: 10.1016/j.jpsychores.2016.11.011. Epub 2016 Dec 1.

Depression and inflammatory arthritis are associated in both Western and Non-Western countries: Findings from the World Health Survey 2002.

Apfelbacher C¹, Brandstetter S², Herr R³, Ehrenstein B⁴, Loerbroks A⁵.

Author information

Abstract

OBJECTIVES:

Epidemiological studies have linked arthritis to depression. However, it remains unclear to what degree the association between arthritis and depression extends to low income countries and whether it can be replicated for inflammatory arthritis (IA). We aimed to address these knowledge gaps based on a large multi-national sample.

METHODS:

Cross-sectional data was drawn from the 2002 World Health Survey. IA was defined as reports of either a diagnosis or treatment of arthritis and morning stiffness for >30min. Self-reported depression was defined as positive if participants reported its prior diagnosis or treatment or if they were classified as suffering from a major depressive episode by a seven-item screening instrument. Multivariable logistic regression analysis was used to estimate odds ratios (ORs) and 95% confidence intervals (CI) for the entire sample and stratified by sex and continent.

RESULTS:

The odds of IA was 2.6-fold increased in those with depression compared to those without (OR=2.64, 95% CI 2.18-3.21) in the entire sample. This association was observed in both men (OR=3.06, 95% CI 2.19-4.27) and women (OR=2.50, 95% CI 1.95-3.21). Similar associations were found on the continent level, but were generally stronger for the Americas and Asia compared to Africa and Europe.

CONCLUSIONS:

Although our definition of IA was limited by the use of self-reported morning stiffness, this study suggests that there is a positive association between inflammatory arthritis and depression in Western and Non-Western countries, suggesting that this relationship represents a universal phenomenon.

45 A. MANUAL THERAPY LUMBAR & GENERAL**Value of OMT**

Man Ther. 2016 Oct 29. pii: S1356-689X(16)30816-5. doi: 10.1016/j.math.2016.10.067.

Osteopathic manipulative treatment: A systematic review and critical appraisal of comparative effectiveness and health economics research.

Steel A1, Sundberg T2, Reid R3, Ward L4, Bishop FL5, Leach M6, Cramer H7, Wardle J8, Adams J8.

Author information

Abstract

In recent years, evidence has emerged regarding the effectiveness of osteopathic manipulative treatments (OMT).

Despite growing evidence in this field, there is need for appropriate research designs that effectively reflect the person-centred system of care promoted in osteopathy and provide data which can inform policy decisions within the healthcare system. The purpose of this systematic review is to identify, appraise and synthesise the evidence from comparative effectiveness and economic evaluation research involving OMT. A database search was conducted using CINAHL, PubMed, PEDro, AMED, SCOPUS and OSTMED.DR, from their inception to May 2015. Two separate searches were undertaken to identify original research articles encompassing the economic evaluation and comparative effectiveness of OMT. Identified comparative effectiveness studies were evaluated using the Cochrane risk of bias tool and appraised using the Good Reporting of Comparative Effectiveness (GRACE) principles. Identified economic studies were assessed with the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) guidelines. Sixteen studies reporting the findings of comparative effectiveness (n = 9) and economic evaluation (n = 7) research were included. The comparative effectiveness studies reported outcomes for varied health conditions and the majority (n = 6) demonstrated a high risk of bias.

The economic evaluations included a range of analyses and considerable differences in the quality of reporting were evident. Despite some positive findings, published comparative effectiveness and health economic studies in OMT are of insufficient quality and quantity to inform policy and practice. High quality, well-designed, research that aligns with international best practice is greatly needed to build a pragmatic evidence base for OMT.

48 A. STM

Myofascial induction in neck pain

Arch Phys Med Rehabil. 2016 Dec 18. pii: S0003-9993(16)31313-2. doi: 10.1016/j.apmr.2016.11.019.

Myofascial Induction Effects on Neck-Shoulder Pain in Breast Cancer Survivors: Randomized, Single-Blind, Placebo-Controlled Cross-Over Design.

Castro-Martín E¹, Ortiz-Comino L², Gallart-Aragón T³, Esteban-Moreno B⁴, Arroyo-Morales M⁵, Galiano-Castillo N⁶.

Author information

Abstract

OBJECTIVES: To investigate the immediate effects of myofascial induction (MI) with placebo electrotherapy as control on perceived pain, cervical/shoulder range of motion (ROM) and mood state in breast cancer survivors (BCSs) with shoulder/arm morbidity. Our secondary objective was to examine the relationships between pain modifications and cervical/shoulder ROM on the side affected by breast cancer.

DESIGN: Randomized, single-blind, placebo-controlled cross-over study.

SETTING: Physical therapy laboratory.

PARTICIPANTS: Twenty-one BCSs who had a diagnosis of stage I-IIIa breast cancer and had completed adjuvant therapy (except hormonal treatment).

INTERVENTION: During each session, the BCSs received either an MI (fascial unwinding) intervention focused on the upper limb area following the Pilat approach or placebo pulsed shortwave therapy (control group). Each session lasted 30 minutes, and an adequate wash-out period of 4 weeks between sessions was established.

MAIN OUTCOME MEASURES: The Visual Analogue Scale (VAS) for pain and anxiety, shoulder-cervical goniometry for ROM, the Profile of Mood States (POMS) for psychological distress and the Attitudes Towards Massage (ATOM) Scale were used.

RESULTS: An analysis of covariance (ANCOVA) revealed significant time x group interactions for VAS affected arm ($P=0.031$) but not for VAS cervical ($P=0.332$), VAS non-affected arm ($P=0.698$) or VAS anxiety ($P=0.266$). The ANCOVA also revealed significant interactions for affected shoulder flexion ($P<0.001$), abduction ($P<0.001$), external rotation ($P=0.004$) and internal rotation ($P=0.001$). Significant interactions for affected cervical rotation ($P=0.022$) and affected cervical lateral flexion ($P=0.038$) were also found. A significant negative correlation was found between changes in VAS affected arm and shoulder/arm internal rotation ROM ($r=-0.46$; $P=0.03$).

CONCLUSIONS: A single MI session decreases pain intensity and improves neck-shoulder ROM to a greater degree than placebo electrotherapy for BCSs experiencing pain.

52. EXERCISE**The effect of motor control training on kinetics variables of patients with non-specific low back pain and movement control impairment: Prospective observational study**

Vahid Mohammadi Amir Letafatkar Haydar Sadeghi AmirAli Jafarnezhadgero Roger Hilfiker

DOI: <http://dx.doi.org/10.1016/j.jbmt.2016.12.009>

Introduction

The purpose of this study was to determine the effects of motor control training on pain, disability and motor control indices in patients with nonspecific low back pain (NSLBP) and movement control impairment (MCI) and also to evaluate the correlation between the changes in disability and the motor control indices.

Methods

Thirty people with NSLBP and MCI based on a clinical examination were following either motor control training or normal activity over 8 weeks.

Result

Significant differences between pre and post training in the experimental group were found in pain, disability and motor control indices. There were significant correlations between disability index with vertical ground reaction force ($r = 0.43$) and center of pressure (anterior-posterior) ($r = 0.44$) values.

Conclusion

The results of this study showed that motor control indices are responsive measures to capture change during motor control training directed at retraining neuromuscular control, reducing pain and disability.

54. POSTURE**SCS**

J Man Manip Ther. 2016 Jul;24(3):174-81. doi: 10.1080/10669817.2016.1138599.

The reliability and validity of the Saliba Postural Classification System.

Collins CK¹, Johnson VS², Godwin EM¹, Pappas E³.

Author information

Abstract

OBJECTIVES:

To determine the reliability and validity of the Saliba Postural Classification System (SPCS).

METHODS:

Two physical therapists classified pictures of 100 volunteer participants standing in their habitual posture for inter and intra-tester reliability. For validity, 54 participants stood on a force plate in a habitual and a corrected posture, while a vertical force was applied through the shoulders until the clinician felt a postural give. Data were extracted at the time the give was felt and at a time in the corrected posture that matched the peak vertical ground reaction force (VGRF) in the habitual posture.

RESULTS:

Inter-tester reliability demonstrated 75% agreement with a Kappa = 0.64 (95% CI = 0.524-0.756, SE = 0.059). Intra-tester reliability demonstrated 87% agreement with a Kappa = 0.8, (95% CI = 0.702-0.898, SE = 0.05) and 80% agreement with a Kappa = 0.706, (95% CI = 0.594-0.818, SE = 0.057). The examiner applied a significantly higher ($p < 0.001$) peak vertical force in the corrected posture prior to a postural give when compared to the habitual posture. Within the corrected posture, the %VGRF was higher when the test was ongoing vs. when a postural give was felt ($p < 0.001$). The %VGRF was not different between the two postures when comparing the peaks ($p = 0.214$).

DISCUSSION:

The SPCS has substantial agreement for inter- and intra-tester reliability and is largely a valid postural classification system as determined by the larger vertical forces in the corrected postures. Further studies on the correlation between the SPCS and diagnostic classifications are indicated.

KEYWORDS:

Postural alignment; Postural classification; Postural stability; Posture
PMID: 7559288

55. SCOLIOSIS

Exercise for pain

Pediatr Phys Ther. 2017 Jan;29(1):62-66.

Six-Month Follow-up of Supervised Spinal Stabilization Exercises for Low Back Pain in Adolescent Idiopathic Scoliosis.

Zapata KA¹, Wang-Price SS, Sucato DJ.

Author information

Abstract

PURPOSE:

To evaluate the effectiveness of 8 weeks of weekly spinal stabilization exercises compared with 1-time treatment in participants with adolescent idiopathic scoliosis and low back pain at a 6-month follow-up.

METHODS:

Thirty-two participants were evaluated at a 6-month follow-up. The supervised group received weekly spinal stabilization exercises. The unsupervised group received a 1-time treatment and home exercise program.

RESULTS:

Both groups improved in all outcome measures. The supervised group had significantly reduced Numeric Pain Rating Scale and Improved Global Rating of Change scores, but had no differences in the revised Oswestry Back Pain Disability Questionnaire, or Patient-Specific Functional Scale scores in comparison with the unsupervised group.

59. PAIN**Fear of movement**

Eur J Pain. 2017 Jan 5. doi: 10.1002/ejp.991.

Executive functions deficits impair extinction of generalization of fear of movement-related pain.

Niederstrasser NG^{1,2,3}, Meulders A^{2,3}, Meulders M^{4,5}, Struyf D^{2,3}, Vlaeyen JW^{2,3,6}.

Author information**Abstract****BACKGROUND:**

Generalization of fear of movement-related pain across novel but similar movements can lead to fear responses to movements that are actually not associated with pain. The peak-shift effect describes a phenomenon whereby particular novel movements elicit even greater fear responses than the original pain-provoking movement (CS+), because they represent a more extreme version of the CS+. There is great variance in the propensity to generalize as well as the speed of extinction learning when these novel movements are not followed by pain. It can be argued that this variance may be associated with executive function capacity, as individuals may be unable to intentionally inhibit fear responses. This study examined whether executive function capacity contributes to generalization and extinction of generalization as well as peak-shift of conditioned fear of movement-related pain and expectancy.

METHODS:

Healthy participants performed a proprioceptive fear conditioning task. Executive function tests assessing updating, switching, and inhibition were used to predict changes in (extinction of) fear of movement-related pain and pain expectancy generalization.

RESULTS:

Low inhibitory capacity was associated with slower extinction of generalized fear of movement-related pain and pain expectancy. Evidence was found in favor of an area-shift, rather than a peak-shift effect, which implies that the peak conditioned fear response extended to, but did not shift to a novel stimulus.

CONCLUSIONS:

Participants with low inhibitory capacity may have difficulties withholding fear responses, leading to a slower decrease of generalized fear over time. The findings may be relevant to inform treatments.

SIGNIFICANCE:

Low inhibitory capacity is not associated with slower generalization, but extinction of fear generalization. Fear elicited by a novel safe movement, situated outside the CS+/- continuum on the CS+ side, can be as strong as to the original stimulus predicting the pain-onset.

Topical treatment of neuropathic pain

J Pain Symptom Manage. 2016 Dec 29. pii: S0885-3924(16)31199-X. doi: 10.1016/j.jpainsymman.2016.09.015.

Topical Treatment of Peripheral Neuropathic Pain: Applying the Evidence.

Sommer C¹, Cruccu G².
Author information

Abstract

CONTEXT:

Patients with peripheral neuropathic pain (NP) may only achieve partial pain relief with currently recommended first-line oral treatments, which are also associated with systemic adverse events. Topical treatments are currently considered second- or third-line options, but a recent pharmacological treatment algorithm has called for broader first-line use of these agents. This has highlighted a need to communicate the benefits associated with topical agents, in particular around the efficacy, targeted local action and limited systemic availability resulting in minimal systemic adverse events and drug-drug interactions.

OBJECTIVES:

This review aims to evaluate the evidence base for topical therapies currently used to treat peripheral NP, discuss the evidence comparing these treatments head-to-head with oral standard of care, and evaluate how they fit into treatment regimens in the 'real world'.

METHODS:

This is a narrative review.

RESULTS:

Two topical treatments are currently licensed: lidocaine 5% medicated plaster (post-herpetic neuralgia [PHN]) and the capsaicin 8% patch (peripheral NP). When compared head-to-head with the oral standard of care (pregabalin), the lidocaine 5% medicated plaster provided similar relief of pain associated with PHN but did not meet the primary predefined criteria for non-inferiority. The capsaicin 8% patch, however, demonstrated non-inferior efficacy when compared head-to-head with pregabalin across a wide range of peripheral NP etiologies. Importantly, both treatments demonstrated effective pain relief without the systemic adverse events associated with oral therapies.

CONCLUSIONS:

First-line use of topical agents may be of particular benefit in patients where the safety and tolerability of oral therapy is a concern.

ACA access to pain care

Reg Anesth Pain Med. 2017 Jan/Feb;42(1):39-44. doi: 10.1097/AAP.0000000000000502.

Influence of Medical Insurance Under the Affordable Care Act on Access to Pain Management of the Trauma Patient.

Wiznia DH¹, Zaki T, Maisano J, Kim CY, Halaszynski TM, Leslie MP.
Author information

Abstract

BACKGROUND AND OBJECTIVES:

The Affordable Care Act intended to "extend affordable coverage" and "ensure access" for vulnerable patient populations. This investigation examined whether the type of insurance (Medicaid, Medicare, Blue Cross, cash pay) carried by trauma patients influences access to pain management specialty care.

METHODS:

Investigators phoned 443 board-certified pain specialists, securing office visits with 235 pain physicians from 8 different states. Appointments for pain management were for a patient who sustained an ankle fracture requiring surgery and experiencing difficulty weaning off opioids. Offices were phoned 4 times assessing responses to the 4 different payment methodologies.

RESULTS:

Fifty-three percent of pain specialists contacted (235 of 443) were willing to see new patients to manage pain medication. Within the 53% of positive responses, 7.2% of physicians scheduled appointments for Medicaid patients, compared with 26.8% for cash-paying patients, 39.6% for those with Medicare, and 41.3% with Blue Cross ($P < 0.0001$). There were no differences in appointment access between states that had expanded Medicaid eligibility for low-income adults versus states that had not expanded Medicaid eligibility. Neither Medicaid nor Medicare reimbursement levels for new patient visits correlated with ability to schedule an appointment or influenced wait times.

CONCLUSIONS:

Access to pain specialists for management of pain medication in the postoperative trauma patient proved challenging. Despite the Affordable Care Act, Medicaid patients still experienced curtailed access to pain specialists and confronted the highest incidence of barriers to receiving appointments.

Anxiety and inflammation

Obesity (Silver Spring). 2016 Dec 21. doi: 10.1002/oby.21698.

Anxiety independently contributes to elevated inflammation in humans with obesity.

Pierce GL^{1,2,3}, Kalil GZ^{1,4}, Ajibewa T¹, Holwerda SW¹, Persons J^{5,6}, Moser DJ⁵, Fiedorowicz JG^{2,4,5,6}.

Author information

Abstract

OBJECTIVE:

Anxious and depressive states are associated with increased cardiovascular disease (CVD) risk and a proinflammatory phenotype, although the latter appears to be at least partially explained by adiposity. It was hypothesized that depression and anxiety would be associated with elevated inflammation independent of adiposity in persons with obesity at high risk of CVD.

METHODS:

This study explored the relation between baseline anxiety as measured by the Beck Anxiety Inventory and depression as measured by the Beck Depression Inventory-II and baseline serum c-reactive protein (CRP) in a cross-sectional sample of 100 participants [mean (SD) age 57.8 (7.7) years; 64% female] with obesity [mean (SD) body mass index, BMI 37.3 (5.5) kg/m²] enrolled in a clinical trial for pharmacological weight loss.

RESULTS:

Beck Anxiety Inventory, but not Beck Depression Inventory-II, scores were significantly correlated with CRP ($\rho = 0.28$, $P = 0.005$). BMI was also highly correlated with CRP ($\rho = 0.42$, $P < 0.0001$). In multivariate models, the relation between anxiety and CRP remained significant ($P = 0.038$), independent of BMI, age, and sex.

CONCLUSIONS:

Anxiety, but not depression, was associated with elevated inflammation in persons with obesity beyond that attributable to higher BMI. Further study is warranted to assess whether anxiety represents a potential therapeutic target to mitigate corresponding CVD risk associated with elevated inflammation in persons with obesity.

Pains impact on work

Relationship of musculoskeletal pain and well-being at work – Does pain matter?

Kirsi Malmberg-Ceder Maija Haanpää Päivi E. Korhonen Hannu Kautiainen
Seppo Soynila

Highlights

- 2/3 of Finnish female city employees suffer from chronic musculoskeletal pain.
- Work engagement had significant negative relationship with burden of pain.
- Musculoskeletal pain *per se* did not correlate with work engagement.
- Work engagement was significantly associated with psychosocial factors.

Abstract

Background and aims Musculoskeletal pain is a common symptom and many people even with chronic pain continue to work. The aim of our study is to analyze how musculoskeletal pain affects work well-being by comparing work engagement in employees with or without pain, and how pain-related risk of disability is associated with work engagement. In a separate analysis, we also studied, how psychosocial factors are related to work engagement.

Methods This is a cross-sectional study of Finnish female employees of the city of Pori, Finland (PORi To Aid Against Threats (PORTAAT) study). Data was collected by trained study nurses and self-administrated questionnaires. Work well-being was measured by work engagement using Utrecht Work Engagement Scale (UWES-9) questionnaire and the burden of pain was measured by using the short version of Örebro Musculoskeletal Pain Screening Questionnaire (ÖMPSQ). Study population was divided into four groups: those without pain and the groups with low (I), medium (II) or high (III) ÖMPSQ score, reflecting increasing risk of long term disability due to musculoskeletal pain. The study nurse assessed psychosocial risk factors using defined core questions.

Results We evaluated 702 female employees, 601 (86%) had suffered from musculoskeletal pain over the past 12 months, whereas 101 (14%) reported no pain at all. Pain was chronic (duration at least 3 months) in 465/601 (77%) subjects. Subjects with musculoskeletal pain were older, had higher BMI and were on sick leave more often than subjects without pain. Of the psychosocial risk factors, depression, type D personality, anxiety and hostility were significantly more common among subjects with musculoskeletal pain. Hypertension and the use of non-steroidal anti-inflammatory drugs were significantly more frequent in the musculoskeletal pain group. Quality of sleep and working capability were significantly better among persons without pain. Average weekly working hours were slightly higher among those with musculoskeletal pain. In crude analysis, work engagement (UWES-9) was similar in women without pain and those with musculoskeletal pain (4.96 vs. 4.79; $p = 0.091$). After adjustment for age, education years, BMI, working hours and financial satisfaction, the difference between the groups became statistically significant ($p = 0.036$). Still, there was no difference between the groups of no-pain and low burden of pain ($p = 0.21$, after adjustment). Work engagement was significantly lower in the groups of medium ($p = 0.024$, after adjusted) and high ($p < 0.001$, after adjustment) burden of pain. Linearity across the Linton tertiles was significant ($p < 0.001$). In univariate and multivariate ordered logistic regression analyses relating study variables to the work engagement musculoskeletal pain *per se* did not enter in the model to explain work engagement. Work and family stress, type D personality and duration of sick leave due to pain reduced work engagement, whereas financial satisfaction, moderate and high leisure time physical activity and higher BMI improved it.

Conclusions Among women with musculoskeletal pain psychosocial and lifestyle factors significantly correlate with work engagement, while the pain itself does not.

62 A. NUTRITION/VITAMINS

Vit D and GI CA

JAMA Oncol. 2016 Dec 15. doi: 10.1001/jamaoncol.2016.5917.

Vitamin D Receptor Genotype, Vitamin D3 Supplementation, and Risk of Colorectal Adenomas: A Randomized Clinical Trial.

Barry EL¹, Peacock JL², Rees JR¹, Bostick RM³, Robertson DJ⁴, Bresalier RS⁵, Baron JA⁶.
Author information

Abstract

IMPORTANCE: Despite epidemiological and preclinical evidence suggesting that vitamin D and calcium inhibit colorectal carcinogenesis, daily supplementation with these nutrients for 3 to 5 years was not found to significantly reduce the risk of recurrent colorectal adenomas in a recent randomized clinical trial.

OBJECTIVE: To investigate whether common variants in 7 vitamin D and calcium pathway genes (VDR, GC, DHCR7, CYP2R1, CYP27B1, CYP24A1, and CASR) modify the effects of vitamin D3 or calcium supplementation on colorectal adenoma recurrence.

DESIGN, SETTING, AND PARTICIPANTS: We examined 41 candidate single-nucleotide polymorphisms (SNPs) in 2259 participants in a randomized, double-blind, placebo-controlled trial conducted at 11 clinical centers in the United States. Eligibility criteria included a recently diagnosed adenoma and no remaining colorectal polyps after complete colonoscopy. The study's treatment phase ended on August 31, 2013, and the analysis for the present study took place from July 28, 2014, to October 19, 2016.

INTERVENTIONS: Daily oral supplementation with vitamin D3 (1000 IU) or calcium carbonate (1200 mg elemental calcium) or both or neither.

MAIN OUTCOMES AND MEASURES: The outcomes assessed were the occurrence of 1 or more adenomas or advanced adenomas (estimated diameter, ≥ 1 cm; or with villous histologic findings, high-grade dysplasia, or cancer) during follow-up. Treatment effects and genotype associations and interactions were estimated as adjusted risk ratios (RRs) and 95% confidence intervals (CIs). The effective number of independent SNPs was calculated to correct for multiple testing.

RESULTS: Among the 2259 participants randomized, 1702 were non-Hispanic whites who completed the trial and had genotype data for analysis (1101 men; mean [SD] age 58.1 [6.8] years). The effect of vitamin D3 supplementation on advanced adenomas, but not on adenoma risk overall, significantly varied according to genotype at 2 VDR SNPs (rs7968585 and rs731236) in linkage disequilibrium ($D' = 0.98$; $r^2 = 0.6$). For rs7968585, among individuals with the AA genotype (26%), vitamin D3 supplementation reduced risk by 64% (RR, 0.36; 95% CI, 0.19-0.69; $P = .002$; absolute risk decreased from 14.4% to 5.1%). Among individuals with 1 or 2 G alleles (74%), vitamin D3 supplementation increased risk by 41% (RR, 1.41; 95% CI, 0.99-2.00; $P = .05$; absolute risk increased from 7.7% to 11.1%; $P < .001$ for interaction). There were no significant interactions of genotypes with calcium supplementation.

CONCLUSIONS AND RELEVANCE: Our findings suggest that benefits from vitamin D3 supplementation for the prevention of advanced colorectal adenomas may vary according to vitamin D receptor genotype.

Egg intake

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Association of dietary cholesterol and egg intakes with the risk of incident dementia or Alzheimer disease: the Kuopio Ischaemic Heart Disease Risk Factor Study.

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Author information

Abstract**BACKGROUND:**

There is little information about the associations of intakes of cholesterol and eggs, a major source of dietary cholesterol, with the risk of cognitive decline in general populations or in carriers of apolipoprotein E ϵ 4 (APO-E4), a major risk factor for dementia.

OBJECTIVE:

We investigated the associations of cholesterol and egg intakes with incident dementia, Alzheimer disease (AD), and cognitive performance in middle-aged and older men from Eastern Finland.

DESIGN:

A total of 2497 dementia-free men, aged 42-60 y in 1984-1989 at the baseline examinations of the prospective, population-based Kuopio Ischaemic Heart Disease Risk Factor Study, were included in the study. Information on the apolipoprotein E (Apo-E) phenotype was available for 1259 men. Data on cognitive performance tests at the 4-y re-examinations were available for 480 men. Dietary intakes were assessed with the use of 4-d food records at baseline. Dementia and AD diagnoses were based on Finnish health registers. Cox regression and ANCOVA were used for the analyses.

RESULTS:

During the 21.9-y follow-up, 337 men were diagnosed with dementia, and 266 men were diagnosed with AD. Neither cholesterol nor egg intake was associated with a higher risk of incident dementia or AD. For example, when evaluated continuously, each intake of 100 mg cholesterol/d was associated with a multivariable-adjusted HR of 0.90 (95% CI: 0.79, 1.02) for incident dementia, and each additional 0.5 egg (27 g)/d was associated with an HR of 0.89 (95% CI: 0.78, 1.01). However, egg intake was associated with better performance on neuropsychological tests of the frontal lobe and executive functioning, the Trail Making Test, and the Verbal Fluency Test. The Apo-E4 phenotype did not modify the associations of cholesterol or egg intake (P-interactions > 0.11).

CONCLUSIONS:

Neither cholesterol nor egg intake is associated with an increased risk of incident dementia or AD in Eastern Finnish men. Instead, moderate egg intake may have a beneficial association with certain areas of cognitive performance.

Coffee intake and CV disease

Int J Epidemiol. 2016 Dec 28. pii: dyw325. doi: 10.1093/ije/dyw325.

Coffee intake, cardiovascular disease and all-cause mortality: observational and Mendelian randomization analyses in 95 000-223 000 individuals.

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Author information

Abstract

BACKGROUND:

Coffee has been associated with modestly lower risk of cardiovascular disease and all-cause mortality in meta-analyses; however, it is unclear whether these are causal associations. We tested first whether coffee intake is associated with cardiovascular disease and all-cause mortality observationally; second, whether genetic variations previously associated with caffeine intake are associated with coffee intake; and third, whether the genetic variations are associated with cardiovascular disease and all-cause mortality.

METHODS:

First, we used multivariable adjusted Cox proportional hazard regression models evaluated with restricted cubic splines to examine observational associations in 95 366 White Danes. Second, we estimated mean coffee intake according to five genetic variations near the AHR (rs4410790; rs6968865) and CYP1A1/2 genes (rs2470893; rs2472297; rs2472299). Third, we used sex- and age adjusted Cox proportional hazard regression models to examine genetic associations with cardiovascular disease and all-cause mortality in 112 509 Danes. Finally, we used sex and age-adjusted logistic regression models to examine genetic associations with ischaemic heart disease including the Cardiogram and C4D consortia in a total of up to 223 414 individuals. We applied similar analyses to ApoE genotypes associated with plasma cholesterol levels, as a positive control.

RESULTS:

In observational analyses, we observed U-shaped associations between coffee intake and cardiovascular disease and all-cause mortality; lowest risks were observed in individuals with medium coffee intake. Caffeine intake allele score (rs4410790 + rs2470893) was associated with a 42% higher coffee intake. Hazard ratios per caffeine intake allele were 1.02 (95% confidence interval: 1.00-1.03) for ischaemic heart disease, 1.02 (0.99-1.02) for ischaemic stroke, 1.02 (1.00-1.03) for ischaemic vascular disease, 1.02 (0.99-1.06) for cardiovascular mortality and 1.01 (0.99-1.03) for all-cause mortality. Including international consortia, odds ratios per caffeine intake allele for ischaemic heart disease were 1.00 (0.98-1.02) for rs4410790, 1.01 (0.99-1.03) for rs6968865, 1.02 (1.00-1.04) for rs2470893, 1.02 (1.00-1.04) for rs2472297 and 1.03 (0.99-1.06) for rs2472299. Conversely, 5% lower cholesterol level caused by ApoE genotype had a corresponding odds ratio for ischaemic heart disease of 0.93 (0.89-0.97).

CONCLUSIONS:

Observationally, coffee intake was associated with U-shaped lower risk of cardiovascular disease and all-cause mortality; however, genetically caffeine intake was not associated with risk of cardiovascular disease or all-cause mortality.

Vit D as biomarker for RA

J Clin Rheumatol. 2017 Jan;23(1):33-39. doi: 10.1097/RHU.0000000000000477.

The Role of 25-Hydroxyvitamin D as a Predictor of Clinical and Radiological Outcomes in Early Onset Rheumatoid Arthritis.

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Author information

Abstract**OBJECTIVE:**

The aims of this study were to compare the levels of 25-hydroxyvitamin D (25(OH)D) in patients with early-onset rheumatoid arthritis (EORA) versus a healthy control group and to assess the association of 25(OH)D deficiency and the BsmI polymorphism of the vitamin D receptor gene with clinical, radiological, and laboratory parameters.

METHODS:

Early-onset RA Colombian patients were enrolled in a 3-year follow-up study. Vitamin D deficiency was diagnosed for 25(OH)D levels of less than 20 ng/mL. Pearson and Spearman correlation coefficients were used to assess data.

RESULTS:

Seventy patients and 70 matched healthy subjects were included. 25-Hydroxyvitamin D was lower in the EORA group (27.13 [SD, 13.4] ng/mL vs. 33.74 [SD, 16.7] ng/mL; $P = 0.01$); 31.4% of EORA patients were vitamin D deficient. Remission was higher in subjects without 25(OH)D deficiency (22.7% vs. 47.9%; $P = 0.04$). Patients with 25(OH)D deficiency at baseline had higher Health Assessment Questionnaire and Physician Global Disease Activity Assessment scores, fatigue levels, erythrocyte sedimentation rate, and morning stiffness after 3 years. At disease onset, only a relationship between 25(OH)D deficiency with fatigue and morning stiffness was found. Neither radiographic progression nor Sharp van der-Heidje score was associated to hypovitaminosis D after 36-month follow-up. The bb genotype was less frequent in patients with vitamin D deficiency (0% vs. 16.6%; $P = 0.04$). Patients with BB-Bb genotype had lower 25(OH)D and a propensity to more severe disease.

CONCLUSIONS:

Our data provide further support for a role of vitamin D as a clinical biomarker for RA. Baseline 25(OH)D could have potential as a predictor of disease severity in EORA.