THU0466  DOES GENERALISED PAIN AND LOCALISED PAIN SEVERITY INCREASE RISK OF PREVALENT AND INCIDENT FRACTURES IN OLDER ADULTS?

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Background: Musculoskeletal pain is common particularly in the elderly and typically occurs in multiple sites. Pain has been linked to falls risk; however, whether increased risk of falls related to pain can subsequently increase fracture risks remains unclear.

Objectives: To describe the associations of localised pain severity and generalised pain (number of painful sites) with incident fractures, and to explore whether their associations are independent of falls risk, bone mineral density (BMD) and potential confounders.

Methods: Data from a longitudinal population-based study of older adults (mean age 63 years, 51% female) were utilised. A mean follow-up was performed at 2.6, 5.1 and 10.7 years later, respectively. Pain severity in the knee was measured by the Western Ontario and McMaster Universities Osteoarthritis Index pain questionnaire. Presence/absence of pain at the neck, back, hands, shoulders, hips, knees and feet was assessed by questionnaire at baseline. Fractures were self-reported at each time-point. BMD was measured by Dual-energy X-ray absorptiometry (DXA). Falls risk was calculated based on the short form Physiological Profile Assessment.

Results: A total of 455 fractures at baseline and 154 new fractures were reported during follow-up. In multivariable analyses, both pain severity and number of painful sites were associated with prevalent fractures at any site. Pain severity was associated with prevalent vertebral fractures, while number of painful sites was associated with prevalent fractures at non-vertebral and hip sites. Furthermore, pain severity was associated with an increased risk of incident fractures at any site (relative risk (RR) 1.04, 95%CI 1.02-1.06), major (including the femur, radius, ulnar, vertebral, rib and humerus) (RR 1.10, 95%CI 1.05-1.15) and vertebral (RR 1.04, 95%CI 1.01-1.08). Similarly, number of painful sites was also associated with increased risk of incident fractures at any site [RR 1.69, 95%CI 1.64-25.33]. There was a dose-response relationship between number of painful sites and risk of incident fractures. These associations remained significant after further adjustment for falls risk and BMD. No significant associations were found for fractures occurring at non-vertebral and hip sites.

Conclusion: Both pain severity and generalised pain are associated with increased risk of prevalent and incident fractures, which is independent of falls risk, BMD and potential confounders, suggesting that pain may be an independent marker of fracture risk. Improved pain management may have the potential to prevent fractures in older adults.

Disclosure of Interests: None declared


Fibromyalgia

THU0468  THE INTERACTIONS OF PHYSICAL ACTIVITY LEVELS ON THE SODIUM CHANNEL PROTEIN TYPE 9 SUBUNIT ALPHA AND METHYLENE TETRAHYDROFOLATE REDUCTASE GENES ARE ASSOCIATED WITH FATIGUE IN WOMEN WITH FIBROMYALGIA

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Background: People with fibromyalgia identify fatigue as one of the main symptoms of the disease [1]. It is hypothesised that the pathogenesis of fibromyalgia involves a genetic susceptibility that is modulated by environmental factors [2].

Disclosure of Interests: None declared


References:

Acknowledgement: None

Disclosure of Interests: None declared


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Disclosure of Interests: None declared


References:

Acknowledgement: None

Disclosure of Interests: None declared

**Objectives:** To examine the possible role of genetic susceptibility for fatigue in southern Spanish women with fibromyalgia, by looking at the possible associations of fatigue and single nucleotide polymorphisms in 34 fibromyalgia candidate-genes, at the interactions between genes, and at the associations between gene-physical activity.

**Methods:** In this cross-sectional study participated 276 women with fibromyalgia. We extracted DNA from saliva in order to analyse gene-polymorphisms related to fibromyalgia susceptibility, symptoms, or potential mechanisms. Accelerometers registered the participants physical activity and sedentary time. Five dimensions of fatigue were assessed with the Multidimensional Fatigue Inventory. Age, body fat (%), and analgesics and antidepressants consumption were considered as confounders in all analyses. Based on the Bonferroni’s and False Discovery Rate (FDR) values, the statistical significance was interpreted.

**Results:** AT carriers of the rs4453709 polymorphism (sodium channel protein type 9 subunit alpha, SCN9A, gene) showed the highest scores on fatigue. Carriers of the heterozygous genotype of the rs1801133 (methylene tetrahydrofolate reductase, MTHFR, gene) or rs4597545 (SCN9A gene) polymorphisms who were physically active reported lower fatigue compared to their inactive counterparts. Highly sedentary carriers of the homozygous genotype of the rs7607967 polymorphism (AA/GG genotype; SCN9A gene) presented higher fatigue than those with lower levels of sedentary time.

**Conclusion:** Physical (in)activity behaviours and the SCN9A and MTHFR genes were jointly related to fatigue. Thereby, the potential benefits of following an active lifestyle might be observed more clearly in women with fibromyalgia genetically predisposed to higher levels of fatigue.

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**Acknowledgement:** This work was supported by the Spanish Ministry of Economy and Competitiveness [I+D+I DEP2010-15639, I+D+I DEP2013-40908-R to M.D.-F.; BES-2014-067612 to F.E.-L.]; the Spanish Ministry of Education [FP13/03410 to D.S.-T.; FPU 15/00002 to B.G.C.]; the Consejería de Turismo, Comercio y Deporte, Junta de Andalucía [CTCD-20100001924-TRA to MD-F]; and the University of Granada, Plan Propio de Investigación 2016, Excelencia actions: Units of Excellence; Unit of Excellence in Exercise and Health (UECES).

**Disclosure of Interests:** None declared

**DOI:** 10.1136/annrheumdis-2019-eular.7373

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**THU0469**

**CLUES TO RECOGNIZE SECONDARY FIBROMYALGIA IN PATIENTS WITH OSTEOARTHRITIS ACCORDING TO A FIBROMYALGIA ASSESSMENT SCREENING TOOL OF SCALES ON A MULTIDIMENSIONAL HEALTH ASSESSMENT QUESTIONNAIRE (MDHAQ/FAST3-F)**

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**Background:** A multidimensional health assessment questionnaire (MDHAQ) includes scales for a self-report painful joint count, symptom checklist, and fatigue visual analog scale (VAS), which may be compiled into a fibromyalgia assessment screening tool (FAST3-F), in addition to physical function, pain VAS, and patient global VAS, compiled into routine assessment of patient index data (RAPID3). FAST3-F agrees >80% with 2011 formal fibromyalgia (FM) criteria in rheumatoid arthritis (RA) patients who have secondary FM.

**Objectives:** To recognize clues to secondary FM in osteoarthritis (OA) patients seen in routine care, according to FAST3-F, and to analyze MDHAQ demographic and other clinical data in OA patients who did or did not meet MDHAQ/FAST3-F criteria for secondary FM.

**Methods:** All patients complete an MDHAQ at all visits prior to seeing a physician. The findings may be useful to recognize a basis for poor responses in clinical care, clinical trials, and other clinical research, and enhance understanding of pain mechanisms in OA versus FM versus OA with FM.

**Disclosure of Interests:** None declared

**DOI:** 10.1136/annrheumdis-2019-eular.5858

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**THU0470**

**ASSOCIATION OF SEDENTARY TIME AND PHYSICAL ACTIVITY WITH PHYSICAL FUNCTION IN WOMEN WITH FIBROMYALGIA: AN ISOTEMPORAL SUBSTITUTION APPROACH**

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**Background:** Behaviours of people with fibromyalgia may impact their levels of physical fitness, which is a marker of physical and psychological health1,2,3. However, scarce research has studied the association of sedentary time (ST) and physical activity (PA) with physical fitness. Interestingly, increasing time in one behaviour requires decreasing time in another. Thus, it is also of interest to understand what is the theoretical impact of replacing sedentary time (ST, e.g., sitting) by light or moderate PA (LPA and MPA, respectively) as well as replacing LPA by MPA on physical fitness in fibromyalgia.

**Objectives:** To assess the association of replacing ST for different physical activity levels (i.e., ST by LPA or MPA) as well as of LPA by MPA with physical fitness in women with fibromyalgia.

**Methods:** A total of 407 women with fibromyalgia (51.87 ± 8.01 years old) participated in this cross-sectional study. ST, LPA and MPA were objectively measured with triaxial accelerometer for 7 consecutive days. Vigorous physical activity was not analysed as this is a very uncommon behaviour in the population. Physical fitness was assessed through the Senior Fitness Test Battery plus the handgrip strength test. The association between the replacement of 30 min/day of ST with an equivalent time of LPA or MPA were tested by isotemporal substitution analyses. Body mass index and age were included as covariates.