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DIABETES: DOES IT ACCELERATE BONE MASS LOSS IN RHEUMATOID ARTHRITIS?C. F. Palici¹, P. Ciurea¹, O. R. Predescu¹, A. F. Vreju¹, A. E. Musetescu¹, C. Criveanu¹¹University of Medicine and Pharmacy Craiova, Craiova, Romania

Objective: Diabetes and obesity are associated with a low degree of chronic inflammation, which can act as a trigger or maintain the autoinflammatory process such as rheumatoid arthritis. There are also studies that prove that patients with type 2 diabetes are prone to developing other inflammatory or autoimmune conditions. Rheumatoid arthritis is the most common autoimmune disorder, characterized by the presence of systemic inflammation and chronic synovitis with destructive and disabling potential. The present study is aimed at establishing whether the presence of diabetes and obesity negatively influences the evolution of rheumatoid arthritis, by maintaining the inflammatory process and accelerating bone mass loss.

Methods: An observational cohort study was conducted in which 127 patients with rheumatoid arthritis diagnosed during 2010-2014 were included. Subsequently they were divided into 2 groups: the first group included patients who associate diabetes type 2, and in the second group patients without diabetes were included. The BMD, glucose, VSH determinations at the time of the diagnosis of rheumatoid arthritis and the values determined at the 2018 evaluation were considered.

Results: The people included in the study were exclusively postmenopausal women, with an average age of 64.39 y. In the group with diabetes association there were included 76 cases of which 63.15% (n=48) developed osteoporosis with a T score between -4.9DS and -2.5DS (RR=1.7) as opposed to the other group which included 51 people and in which only 31.3% (n=16) had a T-score <-2.5DS. It was also found that the average BMI in the first lot was 31.6 kg/m² respectively 33.2 mm/lh for ESR, and in the second lot BMI=25 kg/m² respectively 18.7mm/lh ESR.

Conclusion: Patients with rheumatoid arthritis who associate diabetes have a higher risk of developing osteoporosis (RR=1.7), which shows that the imbalance of glucidic metabolism negatively influences BMD, favoring bone resorption by maintaining a low but persistent level of systemic inflammation.

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IMPROVED STATISTICAL METHODS FOR MONITORING KNEE OSTEOARTHRITIS DISEASE PROGRESSIONC. M. Parsons¹, A. Judge², R. Meyer³, O. Bruyère⁴, F. Petit-Dop⁵, R. Chapurlat⁶, J.-Y. Reginster⁴, H. Inskip¹, C. Cooper¹¹MRC Lifecourse Epidemiology Unit, Southampton, UK,²Musculoskeletal Research Unit, University of Bristol, Bristol, UK,³Department of Statistics, University of Auckland, Auckland, New Zealand,⁴Department of Public Health and Health Economics, University of Liege, Liege, Belgium,⁵Innovative Therapeutic Pole of Rheumatology, Servier, Suresnes, France,⁶INSERM UMR 1033, Université de Lyon, Lyon, France

Objective: Knee osteoarthritis (KOA) disease progression is usually monitored by calculating the crude differences between baseline and end of study knee joint space width (JSW) measurements. Such differences are small and sensitive to measurement error, and participants who have dropped out get excluded. We aimed to assess the utility of two alternative statistical modeling methods for monitoring KOA progression.

Methods: We used JSW on radiographs from both the control arm of the Strontium Ranelate Efficacy in Knee Osteoarthritis trial (SEKOIA), a 3-y multicentre, double-blind, placebo-controlled phase 3 trial, and the

Osteoarthritis Initiative (OAI), an open-access longitudinal dataset from the USA comprising participants followed over 8 y. Frequentist linear mixed effect (LME) and Bayesian hierarchical modelling outputs were compared with annualised crude difference. All 3 estimates of JSW change were assessed for their utility in predicting change in WOMAC pain.

Results: Mean annualised changes in JSW were comparable for all estimates, a reduction of around 0.14 mm/y in SEKOIA and 0.07 mm/y in OAI. The standard deviation (SD) of change estimates was lower with LME and Bayesian modelling than crude change (SEKOIA SD=0.12, 0.12 and 0.21 respectively; OAI SD=0.08, 0.08 and 0.11 respectively). Estimates from LME and Bayesian modelling were statistically significant predictors of change in pain over the duration of SEKOIA (LME β =-0.97, p-value=0.04, Bayes β =-0.93, p-value=0.04), while crude change did not predict change in pain (β =-0.43, p-value=0.10).

Conclusion: Implementation of LME or Bayesian modelling in clinical trials and epidemiological studies, would reduce sample sizes required by enabling all study participants to be included in analysis regardless of incomplete study follow-up, and the precision of change estimates would improve. Also they provide increased power to detect associations with other measures.

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ACCEPTABILITY OF BISPHOSPHONATE TREATMENT REGIMENS FOR OSTEOPOROSIS: A QUALITATIVE SYSTEMATIC REVIEWF. Manning¹, Z. Paskins¹, C. Jinks¹, E. Cotterell¹, O. Sahota², S. Bishop³, J. Wright¹, N. Corp¹¹School of Primary, Community and Social Care, Keele University, Newcastle-Under-Lyme, ²Nottingham University Hospitals, Nottingham, ³Nottingham University Business School, Nottingham, UK

Objective: To investigate the acceptability of different bisphosphonates treatment regimens for osteoporosis among patients and clinicians.

Methods: A systematic review of qualitative research exploring patients' and clinicians' views of the acceptability of bisphosphonates was conducted (PROSPERO [CRD42019143526]). Seven databases were searched. Article screening used eligibility criteria. Eligible full-text articles underwent data extraction and quality appraisal (CASP) by two independent reviewers. The Theoretical Framework of Acceptability (TFA) informed a framework analysis.

Results: 25 studies were included, the majority were conducted in North America or Europe, 12 studies explored patient views, 7 clinicians and 6 explored both. Only two studies mentioned intravenous bisphosphonates. Acceptability was described according to TFA domains of sense-making, emotions, opportunity costs, burden, perceived effectiveness and self-efficacy. There were limited data relating the TFA domain of ethicality. Patients and clinicians made sense of bisphosphonates by considering a risk-benefit analysis, informed by perceived-need balanced against concerns and fears. Both need and concern changed over time and were influenced by the doctor-patient relationship, personal and vicarious experience and competing priorities. Patients and clinicians wanted evidence of effectiveness and expressed uncertainty about how treatment worked. Patients' self-efficacy was enhanced by routinisation (e.g., weekly tablet taken whilst reading the Sunday paper).

Conclusion: By utilising the TFA, the findings demonstrate that a whole-system, theoretically informed approach is necessary to both understand and improve acceptability. Additionally, there is a need to clarify what constitutes bisphosphonate treatment success and a need to explore views of patients receiving IV bisphosphonates.

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