

LOW BMD AND RISK OF FALLS ARE INCREASED AMONG INDIVIDUALS WITH RHEUMATOID ARTHRITIS: FINDINGS FROM UK BIOBANK

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Objectives

Rheumatoid arthritis (RA) has previously been associated with adverse musculoskeletal outcomes. The current study aimed to explore if RA is a predictor of reduced BMD and falls, using baseline data from the UK Biobank cohort.

Methods

The study population comprised 500,954 people aged 37-73 years. A diagnosis of RA was identified in participants from the UK Biobank using Hospital Episode Statistics using ICD-10 codes M05 and M06. Multivariable logistic and linear regressions were used to assess the relationships with estimated BMD (eBMD) as assessed by heel ultrasound, and with falls (occurring in the year prior to baseline interview, and recorded by self-report).

Results

Of 500,954 participants (median age 58 years (IQR 50-63)), 5476 (1.1%) were found to have a diagnosis of RA. 321,904 participants had heel ultrasound measurements performed generating a mean eBMD T-score of -0.32. Data were available for self-reported falls in 499,956 participants, of which a total of 99120 (19.8%) had fallen in last year, with 65968 (13.2%) having had just one fall and 33152 (6.6%) having had more than one fall. A diagnosis of RA was positively associated with having a lower eBMD (mean diff. T-score -0.346, 95%CI -0.386, - 0.306 $p < 0.01$, adjusted for sex). Furthermore, individuals with a diagnosis of RA were also significantly more likely to report a fall in the last year than those without (OR 2.01, 95%CI 1.90, 2.13 $p < 0.01$, adjusted for sex). These observations remained significant after adjustment for potential confounders (age, ethnicity, BMI, smoker status and activity).

Conclusions

In this cross-sectional analysis, RA was associated with lower eBMD and an increased likelihood of falls. As both low eBMD and falls are independent risk factors for fracture, these data may help inform future strategies for reducing fracture risk in individuals with RA. This research has been conducted using the UK Biobank Resource.