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Title

Multimorbidity clustering patterns in Rheumatoid Arthritis and association with adverse health events: A UK Biobank study.

Priority 1 (Research Category)

Musculoskeletal and rheumatology

Presenters

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Abstract

Context: Rheumatoid arthritis (RA) is associated with many long-term conditions (LTCs). An understanding of patterns of comorbidity may promote better care of patients with RA. Objective: To examine how individuals with other LTCs in rheumatoid arthritis cluster and describe how clusters associate with adverse health outcomes. Study design: Longitudinal cohort study. Dataset: UK Biobank. Population studied: UK Biobank participants aged between 40 and 70 years old who reported RA (n=5,625). Outcome measure: Primary outcome measures were risk of all-cause mortality, major adverse cardiac events (MACE), and number of emergency hospitalisations over a 11-year follow-up. Results: A total of 2,566 (46%) participants reported ≥2 other LTCs. This involved 1,138 distinct combinations of LTCs of which 86% (984) were reported by no more than 2 individuals. The most common combination was hypertension with painful conditions (n=117, 4.6%). Latent class analysis created 5 clusters of participants with RA and ≥2 LTCs. For some clusters, one disease was dominant, and in others the most prevalent comorbidities were related. The most common group (38% of participants) centred around hypertension in combination with diabetes and CHD. The next prominent group (20%) involved asthma, COPD and CHD, but also displayed an increased prevalence of diabetes and osteoarthritis. Cancer and thyroid disorders were single dominant conditions in separate groups (11.2% and 13.8% respectively). Lastly, we observed a grouping of patients (16.7%) who reported a collection of functional somatic conditions in which the prevalence of painful conditions, dyspepsia, migraine, IBS, depression, anxiety and diverticular disease were all raised. All derived groups displayed a raised risk of adverse health outcomes, however, three groups showed a higher risk. These comprised the cancer grouping, the grouping with a high prevalence of asthma, COPD, and CHD, and the group centred around hypertension, diabetes, and CHD. In contrast, the participants in the group characterised by painful conditions, dyspepsia and migraine had overall risks similar to that of participants who reported only one LTC. Conclusions: An increased risk of adverse health outcome among participants with RA is associated with both type of LTC as well as the overall number of LTCs

they experience. These results are relevant for the monitoring and management of patients with RA and multimorbidity.