Disease Activity Flares and Pain Flares in an early rheumatoid arthritis inception cohort; characteristics, antecedants and sequelae

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Background

RA flares are common and disabling. They are described in terms of worsening pain, swelling, or other symptoms. We aimed to determine characteristics, antecedants and sequelae of painful and inflammatory flare subtypes during the first 11 years after presentation with RA.

Methods

People from the Early RA Network (ERAN) cohort were assessed from diagnosis of RA during 2002-2013, annually up to 11 years (3703 person-years of follow up). Flare events were defined in 2 discrete ways; DAS28 or Pain Flares. DAS28 Flares satisfied OMERACT criteria of increases in DAS28 since the previous assessment. A 4.8-point worsening of SF36-Bodily Pain score defined Pain Flares. The first flare in each person was analysed. Subgroups within DAS28 and Pain Flares were determined using Latent Class Analysis (LCA) of DAS28 components and SF36 Bodily Pain, Vitality and Mental Health subscales. Comparisons were made between flare subgroups.

Results

Of the 719 eligible participants, 45% (323) showed a DAS28 Flare, 52% (377) showed a Pain Flare, and 65% (470/719) showed either DAS28 or Pain Flares during follow up. LCA found three discrete DAS28 Flare subgroups were identified; which we named ‘Moderate’ (73%), ‘Observed’ (14%) and ‘Self-report’ (13%). The Moderate DAS28 Flares were less severe than the other two subtypes, which displayed additional worsening of joint counts (Observed) or SF36 scores (Self-report).

The LCA analysis found 2 discrete Pain Flare subgroups; ‘Incremental’ (89%) and ‘Primary’ (11%). Incremental Pain Flares occurred on the background of ongoing active disease and pain, whereas Primary Pain Flares occurred following low disease activity and symptoms.

HAQ scores remained increased at the assessment following DAS28 or Pain Flares of any classification.

Conclusions

Flares represent a substantial burden for people with RA, and might contribute to progressive functional decline. Flares can be subgrouped in people with RA based on measurement and patient self-report. Discrete Flare subgroups might reflect different underlying inflammation and pain mechanisms, but all were followed by persistently increased disability. Reducing Flare incidence might have potential to improve long term functional prognosis.

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