High disease activity is a predictor of depression and persistent depression in early rheumatoid arthritis: results from the Ontario Best Practices Research Initiative (OBRI)

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Objectives: The prevalence of depression among individuals with rheumatoid arthritis (RA) may be as high as 40% but persistence of depression over time is relatively unknown. Uncontrolled inflammation may drive severe disease and, in turn, inflammation and high disease activity are hypothesized to mediate depressive symptoms. The aims of this analysis were to: (1) describe the prevalence of depression at baseline and determine how often depression persists over time; (2) determine whether there is an association between changes in disease activity and depression over time among individuals with early RA (ERA).

Methods: ERA patients enrolled in the Ontario Best Practices Research Initiative (OBRI) with ERA (≤ 1 year disease duration) and >/= 2 years of follow-up were included. Persistent depression was defined as self-reported depression at baseline and at >50% of visits over the first 2 years. The association between baseline disease activity, measured by the Clinical Disease Activity Index (CDAI), and depression at baseline or persistent depression was evaluated with multivariate logistic regression. The General Estimation Equation was also used to explore the association between changes in CDAI disease activity over time and risk of depression.

Results: 469 patients with ERA (72.9% female) were included with a mean (SD) age of 56.8 (13.6) years. Mean (SD) disease parameters were: CDAI: 22.9 (14.1); DAS28: 4.6 (1.5); and HAQ disability Index: 1.1 (0.75). At baseline, the prevalence of depression was 26%, and 23% reported persistent depression. Persistent depression was significantly higher in patients with moderate CDAI (19%) and high CDAI (29%) compared to those in CDAI low disease activity (LDA) or remission (16%, p=0.02). After adjusting for potential confounders (sex, rheumatoid factor status, prior use of csDMARDs, current use of bDMARDs, HAQ disability index, number of comorbidities), increased CDAI at baseline was significantly associated with both baseline depression and persistent depression (OR: 1.04; 95%CI: 1.01-1.06, p=0.002). Female gender (OR: 3.17; 95%CI: 1.50-6.68 p=0.002) and greater number of comorbidities at baseline (OR: 1.68; 95%CI: 1.47-1.93, p<0.001) were also associated with persistent depression. Over the course of follow-up, the risk of depression was significantly higher among patients with moderate disease activity compared to those in CDAI LDA or remission (OR: 1.16; 95%CI: 1.04-1.29, p=0.006). The risk of depression was substantially greater for those with high disease activity (OR: 1.32; 95%CI: 1.15-1.52) over time compared to those achieving LDA or remission states.

Conclusion: Depression in ERA is common and initial high disease activity increases the risk of depression as well as its persistence. High CDAI during the early years of follow-up was also an

independent predictor of depression. This highlights the importance of intervening during the “window of opportunity” to control disease activity and the potential to mitigate adverse health outcomes, including depression.