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Prevalence of Cardiovascular Disease and its Associations with Disease Severity in Rheumatoid Arthritis Patients – Data from the Ontario Best Practices Research Initiative (OBRI)

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Objectives: Cardiovascular disease (CVD) is a major comorbidity and the leading cause of death among patients with rheumatoid arthritis (RA). Our aim was to compare the demographics, patterns of medication use, and disease activity in RA patients with and without CVD at cohort entry and 12 months of follow-up.

Methods: Physician and patient-reported data were collected from the Ontario Best Practices Research Initiative Rheumatoid Arthritis Registry (OBRI- RA), a clinical registry of RA patients followed in routine care. CVD was defined as the presence of coronary artery disease (CAD), congestive heart failure (CHF), hypertension (HTN), arrhythmia, stroke, transient ischemic attack (TIA), and/or other heart disorders upon entering the registry. Patient demographics, clinical characteristics, socioeconomic status and treatment regimens were compared between CVD and non-CVD patients at cohort entry using Chi- square and t-tests. Mean disease activity and functional status scores at cohort entry and 12 months of follow-up were estimated by generalized linear regression, adjusting for confounders, including age, sex, smoking, socioeconomic factors, disease activity at cohort entry (for 12-month follow-up analyses only), and RA duration.

Results: Among 2226 RA patients, 360 (16.2%) had CVD at cohort entry. Among which, 101 (28.1%) had CAD, 51 (14.2%) had arrhythmia, 12 (3.3%) had CHF, 28 (7.8%) had CVA, 8 (2.2%) had PE, and 160 (44.4%) had other/unspecified CVD. Patients with CVD were older (66.7 ± 10.1 vs. 53.6 ± 12.9yrs, p<0.0001), had longer RA duration (10.6 ± 11.8 vs. 8.1 ± 9.0yrs, p<0.0001) and more extra-articular features (35.0% vs. 26.3%, p<0.05). Male sex, lower education and income, lack of private insurance, and smokers were more frequent among CVD patients (p<0.001 for all). CVD patients were more frequently treated with glucocorticoids (34.9% vs. 28.3%, p<0.05) but less frequently with NSAIDs (29.9% vs. 49.3%, p<0.05). After adjusting for confounders, patients with CVD had higher RADAI and HAQ-DI, but similar DAS28, CDAI, or SDAI scores at cohort entry, and at 12 months, CVD patients were more likely to have significantly higher DAS28 and ESR than patients without CVD.

Conclusion: At cohort entry, RA patients with CVD have worse disease activity (RADAI) and functional status (HAQ-DI). At 12 months of follow-up, disease activity (DAS28) remained worse among CVD patients. The higher ESR found in CVD patients may suggest heightened systemic inflammation. The lower use of NSAIDS may be due to their known CVD risks, but the higher utilization of glucocorticoids may require further investigation.