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Title of Presentation: Quality of Care for Cardiovascular Disease Prevention in Rheumatoid Arthritis: Screening for Diabetes and Hyperlipidemia

Background: Comorbidities are increasingly recognized as significant contributors of decreased quality of life and increased mortality in RA. Cardiovascular (CV) diseases are the leading cause of premature death in RA, responsible for 1/3 to 1/2 of excess deaths. Previous research suggests that RA populations receive sub-optimal care for their non-RA health related issues. Our aim was to evaluate the quality of care for hyperlipidemia and diabetes screening in RA by measuring compliance with guidelines, in order to determine whether specific gaps in care exist in the provision of health services for the primary prevention of comorbidities in RA. **Methods:** Study design: Longitudinal study of a population-based cohort using administrative data. Sample: All prevalent RA cases who received care for their RA in British Columbia between January 1996 and March 2006, with follow-up to December 2010. RA cases were selected based on previously published criteria. Controls were selected from the general population and matched on gender, age, (±2 years), and calendar year (±5 years). The data includes all health professional visits, hospital admissions, and medications dispensed on all individuals. We measured compliance with the following screening guidelines: Plasma glucose (PG) tests at least once every 3 years for individuals ≥ 45, excluding individuals with previous diabetes. Lipid tests at least once every 5 years for women ≥ 50 and men ≥ 40, excluding individuals with previous diabetes, coronary artery disease, or hyperlipidemia, based on diagnostic codes or use of drugs. Individuals' follow-up was divided into 3 and 5 years eligibility windows, when they were eligible for the screening guideline. Each individual could contribute up to four 3-year eligibility windows and two 5-year eligibility windows. Compliance was measured as the proportion of eligibility windows with at least one test performed within the time period. Statistical Analyses: A χ^2 test was used to compare compliance rates between the RA cohort and controls, using eligibility windows as the unit of analysis. Odds ratios and confidence intervals were calculated using GEE models to account for the lack of independence of observations. Compliance rate per patient was also calculated, by measuring the proportion of eligible windows per patient when screening was performed. Mean rates in the RA sample were compared to controls using Mann-Whitney U test. **Results:** Analyses for plasma glucose (PG) screening included 27,650 individuals with RA (68.8% female, mean[SD] age 62.5[12.9]), contributing 49,515 three year eligibility windows; and 30,486 controls (68.57% female, age 62.3[12.8]), contributing 62,942 three year windows. Overall, PG was measured at least once in 71.2% of the eligible windows in the RA sample and in 74.4% for the control sample (OR[95%CI]; 0.80 [0.76, 0.84], p<0.001). RA individuals met the recommended screening guidelines in 72.1% of their eligible time windows, compared to 74.1% for controls (p<0.001). Analyses for lipid screening included 13,347 individuals with RA (64.5% female, age 59.0[11.3]) contributing 5,423 five year windows; and 14,859 controls (65.01% female, age 59.0[11.4]), contributing 7,359 five year windows. Overall lipids were measured at least once in 74.4% of the eligible time windows in the RA sample and in 76.8% for the control sample (OR; 0.90 [0.81, 1.01], p=0.085). RA individuals met the recommended screening guideline in 77.6% of their eligible time windows, compare to 78.6% for controls (p=0.20). **Conclusion:** Compliance to screening guidelines for hyperlipidemia and diabetes are similar in the RA cohort and general population, although given the increased prevalence and burden of CV disease, PG and lipid screening is sub-optimal for RA individuals.