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Serious infections in a population-based cohort of older individuals with rheumatoid arthritis

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Purpose: To study serious infections in a population-based cohort of older individuals with RA.
Methods: We assembled an RA cohort using physician billing and hospitalization data for Ontario (April 1st 1992 to March 31 2007); analyses limited to persons aged >65. A diagnosis of RA was based on 2 or more billing code diagnoses of RA, at least 60 days apart but within 5 years. Cohort members were further required to have at least 1 prescription for an oral glucocorticoid, disease-modifying agent or biological response modifier in the 90 days preceding, or any time following, cohort entry date. Cohort entry was defined by date of 1st RA billing code; subjects were followed until death, outmigration, or March 31 2007. Baseline comorbidity and history of joint-replacement were determined using hospitalization, billing and procedure code data. Primary outcome of interest was any infection associated with a hospitalization.
Results: We identified 36,789 individuals; 69.8% female, average age:74.0years (standard deviation 5.8 years).Co-morbidity included chronic lung disease in 39.8%, diabetes in 25.5%, and renal disease in 14.8%. About one-fifth (19.4%) had a history of joint replacement. Subjects were followed for a total of 267227 person-years (average of 7.3 years each). The most common infections included skin/soft tissue infection (2414 events; 9.0 cases/1000 person-years), pneumonia (1189 events; 4.5 cases/1000 person-years), and bacteremia (1183 events; 4.4 cases/1000 person-years). Multivariate models indicated age, male sex, increasing co-morbidity, and history of joint replacement as independent risk factors for over-all infection, as well as for specific infections (skin/soft tissue, pneumonia, and bacteremia). Chronic lung disease (hazard ratio, HR 1.98, 95% CI 1.91,2.05), diabetes (HR 1.23, 95% CI 1.18,1.28), and renal disease (HR 1.80 95% CI 1.73,1.88) were each independent predictors of over-all infection as well as specific infections. A history of joint replacement was associated with a HR of 1.05 (95% CI 1.01,1.09) for infections over-all, and a HR of 1.28 (95% CI 1.16,1.43) for skin/soft-tissue infection.
Conclusions: We found a high burden of infection in this sample. Increasing age, male sex, comorbidity, and history of joint replacement were independent prepredictors of infection in our sample.