

Prevalence of Rheumatoid Arthritis and Associated Comorbidities in the 2011-2015 Medicare Population

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Introduction

- Rheumatoid arthritis (RA) is a systemic inflammatory disease affecting about 1.5 million adults in the US (Helmick et al., 2008).
- In 2014, the estimated RA prevalence rate was about 0.5% in the adults enrolled in the Truven Health MarketScan database (Hunter et al., 2017).
- Patients with RA have an increased burden of comorbidity such as cardiovascular disease (CVD), diabetes, cancer, and other inflammatory diseases.

Objectives

- To estimate prevalence of RA and associated comorbidities in the US Medicare population.
- To compare mortality and hospitalization rates between Medicare patients with and without RA.

Methods

- This was a retrospective descriptive study using the 2010-2015 20% Medicare sample data.
- Yearly prevalent RA cohorts (2011-2015) were defined based on ICD-9 diagnosis code 714.0 with the addition of ICD-10 codes for the 2015 cohort.

- RA was defined if a diagnosis code was present in at least 1 inpatient claim or 2 or more outpatient claims, separated by at least 30 days anytime from the beginning of the baseline period (1 year prior) to the end of the follow-up (in the cohort year).
- Comorbidity defined in the year preceding the cohort year, including
 - CVD, diabetes, hypertension, hyperlipidemia, cancer, anemia
 - other inflammatory conditions such as
 - psoriasis
 - psoriatic arthritis
 - non-alcoholic fatty liver disease (NAFLD)
 - cirrhosis.
- Prevalence of RA was calculated as a percentage among Medicare population.
- Mortality and hospitalization rates expressed as number of events per 100 patient-years.

Results

- Study included approximately 6 million Medicare beneficiaries in each year, 2011-2015.
- Overall prevalence of RA was about 2.6% (Table 1).
 - Age: the peak was 3.5% at age 45-64
 - Sex: 3.6% in female vs. 1.5% in male
 - Race: 3.2% in blacks vs. 2.6% in whites
- Comorbidities associated with higher prevalence of RA: e.g., 32.2% in psoriatic arthritis and 8.1% in psoriasis patients in 2015 (Figure 1).
- RA patient demographics were similar across years, with mean age 72.4 years; 77.0% were female, 83.4% white, and 10.7% black in 2015 (Table 2).

Table 1. Prevalence of Rheumatoid Arthritis in 2011-2015 Medicare Patients (20% sample data)

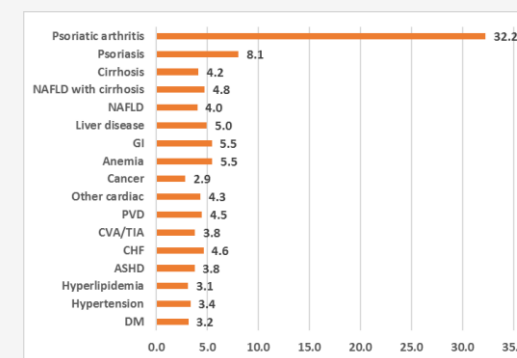
Cohort Year	2011	2012	2013	2014	2015
Medicare patients	5,845,175	5,859,826	5,906,084	5,975,397	6,324,354
Patients with RA	154,335	156,769	156,563	158,233	166,329
Prevalence of RA, %					
Overall	2.64	2.68	2.65	2.65	2.63
By demographics					
Age < 45	1.59	1.59	1.54	1.51	1.48
Age 45-64	3.54	3.54	3.50	3.48	3.38
Age 65-74	2.38	2.41	2.38	2.36	2.31
Age 75-84	2.79	2.84	2.84	2.87	2.91
Age 85+	2.56	2.61	2.59	2.65	2.70
Female	3.53	3.61	3.59	3.60	3.53
Male	1.50	1.50	1.48	1.48	1.44
White	2.54	2.59	2.58	2.59	2.59
Black	3.29	3.31	3.21	3.16	3.08
Other race	2.97	2.89	2.76	2.67	2.54

Table 2. Baseline characteristics in 2011-2015 Medicare Patients (20% sample data) with Rheumatoid Arthritis

Cohort Year	2011	2012	2013	2014	2015
Baseline characteristics					
Mean age (SD) in years	71.8 (11.6)	71.8 (11.5)	71.7 (11.5)	71.8 (11.4)	72.4 (11.4)
% of Female	75.8	75.9	75.7	75.5	77.0
Race, %					
White	82.2	82.3	82.3	82.5	83.4
Black	11.7	11.6	11.5	11.2	10.7
Other	6.1	6.1	6.2	6.3	6.0
Comorbidity (%) in RA patients					
Diabetes	26.7	27.2	27.1	27.2	26.6
Hypertension	65.9	66.5	66.6	66.8	67.3
Hyperlipidemia	45.5	47.3	47.8	48.1	48.5
Cardiovascular disease					
ASHD	21.9	22.1	21.9	21.6	21.5
CHF	13.2	13.4	13.0	12.8	13.2
CVA/TIA	8.5	8.7	8.6	8.6	8.8
PVD	16.2	16.7	16.4	16.7	17.2
Other cardiac	13.6	14.5	14.0	14.1	14.7
Cancer	8.5	8.8	8.7	8.8	8.8
Anemia	26.8	27.7	27.0	26.7	26.4
GI bleeding	3.2	3.4	3.2	3.2	3.2
Liver disease	1.8	1.9	1.9	2.0	2.1
NAFLD	1.0	1.0	1.2	1.3	1.4
Psoriasis	1.1	1.3	1.4	1.4	1.5
Psoriatic arthritis	1.6	1.7	1.8	1.8	1.8

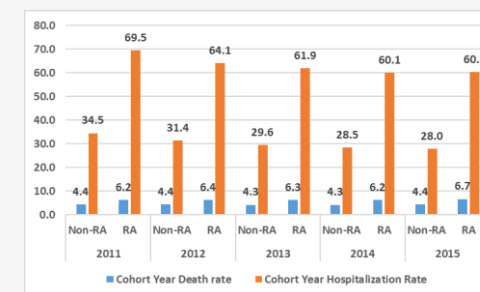
RA=rheumatoid arthritis; ASHD=arteriosclerotic heart disease; CHF=congestive heart failure; CVA/TIA=cerebrovascular accident/transient ischemic attack; PVD=peripheral vascular disease; GI = Gastrointestinal; NAFLD=non-alcoholic fatty liver disease

Figure 1. Prevalence of Rheumatoid Arthritis in 2015 Medicare Patients (20% sample data) with Baseline Comorbidities, %



ASHD=arteriosclerotic heart disease; CHF=congestive heart failure; CVA/TIA=cerebrovascular accident/transient ischemic attack; PVD=peripheral vascular disease; GI = Gastrointestinal; NAFLD=non-alcoholic fatty liver disease

Figure 2. Mortality and Hospitalization Rates, events per 100 patient-years



- Common comorbid conditions in the 2015 RA cohort included hypertension (prevalence 67.3%), hyperlipidemia (48.5%), diabetes (26.6%), anemia (26.4%), arteriosclerotic heart disease (21.5%), peripheral vascular disease (17.2%), congestive heart failure (13.2%), and cancer (8.8%) (Table 2).
- Prevalence of other inflammatory conditions increased across years; for example, NAFLD was 0.96% in 2011 and 1.36% in 2015; corresponding values were 0.04% and 0.07% for cirrhosis, 1.14% and 1.45% for psoriasis, and 1.58% and 1.81% for psoriatic arthritis (Table 2).
- Compared to non-RA patients, RA patients had higher mortality and all-cause hospitalization rates (Figure 2), for example in 2015, RA vs. non-RA:
 - Mortality: 6.7 vs. 4.4 per 100 patient-years;
 - Hospitalization: 60.3 vs. 28.0 per 100 patient-years.

Limitations

- Study was descriptive and results were not adjusted for covariates.

Conclusions

- Hypertension, CVD, hyperlipidemia, diabetes, anemia, and cancer are common in RA patients; other inflammatory conditions increased over years.
- RA patients had higher mortality and hospitalization rates.
- Further analysis should consider risk adjustment and evaluate the effect of RA treatment as well as secondary prevention in patients with other inflammatory conditions.

