

Rheumatoid Arthritis Age Comparisons -- Treat to Target

Dataset Introduction

Abstract

Rheumatoid arthritis (RA) patients in two age ranges who were receiving care at a clinic in Philadelphia are included. Variables include age and sex, several indicators of disease activity and whether or not patients were administered selected common treatments for RA. The dataset is suitable for simple data description, chi-square tests, unpaired t-tests, and Mann-Whitney U tests. Several variables are non-normally distributed and one is approximately normally distributed. There is extensive missing data. Importantly, for two variables, CDAI and DAS-28, missing data is informative as it indicates true non-receipt of these tests and is a focus of the comparisons of the younger and older age groups. (A more complete unpublished abstract created by the investigators, with results, is included in the Additional Information section at the end of this document).

Background

With the availability of effective anti-RA agents, disease activity measurements can inform the specification of treatment and are part of an approach known as “treat to target”. In this study, the authors sought to explore age differences in both disease activity measurement and treatment. Of interest was the possibility that elderly patients might be less likely to have their disease activity measured and less likely to receive aggressive treatment.

Study Objective

The authors hypothesized that rheumatologists are less likely to measure disease activity in elderly patients and less likely to treat them to minimal disease activity.

Study Design

The authors report this as a retrospective cohort design, suggesting that the study protocol calls for follow up. Here, however, the data represent cross sectional measurements collected over a period of 34 months.

Subjects & Variables

There are 71 elderly (75+ years) RA patients and 459 younger (40-70 years) RA patient “controls”. The several year difference between the oldest of the young group and the youngest of the elderly group is presumably a design feature intended to yield a sharp “between groups” distinction. There are 14 variables (13 if ID isn't counted) including age, sex, years since diagnosis, several disease activity indices, and several possible treatments. Level of disease activity was measured using two ordinal scales, the CDAI and DAS28. For patients with both CDAI and DAS28 measurements, the highest disease activity class was used in calculating the level of disease activity as shown in the abstract.

Citation(s)

An unpublished abstract is appended below in the Additional Information section with permission. It differs in a few slight ways from the data used in this portal submission. Table 1 in the abstract is mostly replicable for the



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elderly group, although one additional elderly patient had been added by the time of the abstract. The younger, “control”, group has 4 additional subjects with tests in the abstract and four more osteoporosis screenings. For table 2, users should be able to replicate the severity classification for the 17 elderly subjects using the rule given under subjects and variables plus the ranges in the data dictionary. The non-elderly group has 4 fewer with these tests (242 versus 246) and a few classified differently. You should get 46, 89, 79, and 28 in the 4 severity categories for the non-elderly using the present dataset.

Additional Information

There is no citation for this dataset. However, the following unpublished abstract may be useful.

Methods: In this retrospective cohort study, patient data was collected by review of electronic medical records of patients in our academic rheumatology clinic for 34 months (March 2015-December 2017). Patients over the age of 75 with a diagnosis of RA based on two ICD9 or ICD10 codes on at least 2 office visits were included in the study. A control group consisted of RA patients of ages 41-70. Patients with history of positive TB testing, HIV infection, active viral hepatitis, liver disease with AST/ALT 2x normal limits, history of organ transplantation, and/or active malignancy were excluded from the study.

Results: A total of 72 elderly RA patients were included in the study group; the control group had a total of 459 patients. 23% (n=17) of study group patients had disease activity measures as compared to 53% (n=246) in the control group. Out of the patients who had disease measurements, 64% (n=11) of the study group had low/minimal disease activity as compared to 59% (n=140) of controls.

Conclusion: Our results suggest a provider bias in treating elderly patients with RA with a less aggressive approach. Rather than using objective disease activity scores with a TTT approach to achieve minimal levels of disease activity and better patient outcomes, our clinic experience shows that providers less frequently use disease activity measures in elderly patients, and less frequently use biologic and targeted synthetic DMARDs. As rheumatologists increasingly adopt the TTT approach in management of RA, including objective documentation of disease activity, it is important to extend this to all segments of the population, including older patients.



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Table 1 – Characteristics of Study Cohort (n=531)

	Elderly RA (N=72)	Non-Elderly RA (N=459)
Females	86% (63)	80% (366)
Disease Activity Measures (CDAI or DAS28)	23% (17)	53% (246)
Steroids >5mg/day	25% (18)	23% (106)
Oral DMARD use	63% (45)	73% (335)
Biologic/Targeted Synthetic DMARD use	14% (10)	46% (210)
Osteoporosis Screening	60% (43)	58% (267)

Table 2 (or Figure 1) – Disease Severity, by Age Group: N=263 with Disease Activity Measurement

	Remission	Low Disease Activity	Moderate Disease Activity	High Disease Activity
Elderly RA (N=17)	37% (6)	25% (5)	19% (3)	19% (3)
Non-elderly RA (N=246)	20% (48)	37% (92)	32% (78)	11% (28)

