

Rheumatologists' Views and Experiences in Managing Rheumatoid Arthritis in Elderly Patients: A Qualitative Study

Jill Nawrot, Annelies Boonen, Ralph Peeters, Mirian Starmans, and Marloes van Onna

ABSTRACT. Objective. In this qualitative study we analyzed the (1) influence of age, comorbidity, and frailty on management goals in elderly patients with RA; (2) experiences of rheumatologists regarding the use of the Disease Activity Score at 28 joints (DAS28) to monitor disease activity; and (3) differences in management strategies in elderly patients with RA compared to their younger counterparts.

Methods. Rheumatologists were purposively sampled for a semistructured interview. Two readers independently read and coded the interview transcripts. Important concepts were taxonomically categorized and combined in overarching themes by using NVivo 11 software.

Results. Seventeen rheumatologists (mean age 44.8 yrs, SD 7.7 yrs; 29% male) from 9 medical centers were interviewed. Preserving an acceptable level of functioning was the most important management goal in patients ≥ 80 years and in patients with high levels of comorbidity and frailty. The DAS28 score less frequently steered the management strategy, because rheumatologists commented that comorbidity and an age-related erythrocyte sedimentation rate elevation might distort the DAS28 score. Instead, management of elderly patients highly depended on comorbidity, frailty, and their subsequent effects such as cognitive and physical decline, dependency, and polypharmacy. Presence of 1 or more of these factors frequently resulted in a less future-oriented management approach with less emphasis on the maximal prevention of joint erosions.

Conclusion. The treat-to-target model is not automatically adopted in the elderly patient population. Future evidence-based RA management recommendations for elderly patients with RA are needed and should account for factors such as comorbidity and frailty. (First Release February 15 2018; J Rheumatol 2018;45:590–4; doi:10.3899/jrheum.170773)

Key Indexing Terms:

RHEUMATOID ARTHRITIS
COMORBIDITY

ELDERLY

FRAILTY
PATIENT MANAGEMENT

The number of elderly individuals with rheumatoid arthritis (RA) is expanding in developed countries, mainly owing to an increase in life expectancy¹. Patients with RA show an accelerated development of comorbidities, including cardiovascular disease, interstitial lung disease, osteoporosis, and malignancies². In addition, the clinical consequences of comorbidity are also more severe in patients with RA^{2,3,4}. As an example, the mortality rate following a myocardial

infarction is almost 1.5 times higher in patients with RA as compared to population controls^{2,5}. The interplay between RA, ageing, and comorbidity contributes considerably to the development of frailty, defined as a clinical condition of increased vulnerability due to poor resolution of homeostasis when facing a stressor event⁶.

More complex management decisions need to be made as a consequence of the increasing number of elderly patients with RA in daily clinical practice. Rheumatologists might be reluctant to intensify antirheumatic therapy in elderly patients with RA because of comorbidity, frailty, or polypharmacy⁷. Further, it is plausible that rheumatologists start or intensify antirheumatic therapy while adjusting for ageing and comorbidity, because both factors may independently alter generic and specific RA outcome measures⁴. As an example, a study by Michaud and Wolfe⁸ showed that each comorbidity was associated with worsening in functioning, corresponding to an increase in the Health Assessment Questionnaire score of 0.2. Little is known about the views and experiences of rheumatologists toward managing RA in the elderly patient population. In our present qualitative study, we analyzed

From the Department of Internal Medicine, Division of Rheumatology, Maastricht University Medical Center, Maastricht; Department of Rheumatology, Zuyderland Medical Center, Heerlen, the Netherlands.

J. Nawrot, medical student, Division of Rheumatology, Maastricht University Medical Center; A. Boonen, MD, PhD, Division of Rheumatology, Maastricht University Medical Center; R. Peeters, MD, PhD, Department of Rheumatology, Zuyderland Medical Center; M. Starmans, MD, PhD, Department of Rheumatology, Zuyderland Medical Center; M. van Onna, MD, PhD, Division of Rheumatology, Maastricht University Medical Center.

Address correspondence to Dr. J. Nawrot, Department of Internal Medicine, Division of Rheumatology, Maastricht University Medical Center, Debyelaan 25, 6202 AZ, Maastricht, the Netherlands.

E-mail: j.nawrot@student.maastrichtuniversity.nl

Accepted for publication November 15, 2017.

through semistructured interviews (1) the influence of factors such as age, comorbidity, and frailty on management goals in elderly patients with RA, (2) the experiences of rheumatologists regarding the Disease Activity Score at 28 joints (DAS28) to monitor management in the elderly patient population, and (3) differences in management strategies in elderly patients with RA as compared to their younger counterparts.

MATERIALS AND METHODS

Study design and participants. Rheumatologists working at academic and general hospitals in the Netherlands and Belgium were purposively sampled, while ensuring sufficient diversity in age and work experience. Rheumatologists were invited for a semistructured interview until theoretical saturation was reached. All interviews took place in 2016 and each interview lasted about 1 h. The study was approved by the medical ethical committee from the Maastricht University Medical Center. Since the Medical Research Involving Human Subjects Act (WMO, Dutch law) does not apply to the study described in our manuscript, an official approval of the study by the institutional review board was not required (IRB Maastricht University Medical Center 16-4-005). All rheumatologists provided written informed consent and thereby agreed to present the data and quotes in anonymized form.

Data collection. An interview guide was developed to guarantee all important topics were addressed and to secure data comparability (Table 1). A pilot interview was performed to ensure that all questions were clear. All interviews were audio recorded, anonymized, and fully transcribed afterward.

Data analysis. Data analysis was performed systematically according to the grounded theory approach⁹. Two readers (JN and MO) read, annotated, and analyzed each transcript independently by using NVivo 11 software. Important concepts were taxonomically categorized in codes and subcodes, and later brought together in overarching themes. The researchers regularly met to discuss coding and interpretation of the data. In case of distinct interpretation, consensus was achieved by re-reading the specific passage. Illustrative quotes made by rheumatologists were collected.

RESULTS

Participant characteristics. Seventeen of 18 invited rheumatologists (29% male) agreed to participate (Table 2). Mean age was 44.8 years (SD 7.7 yrs). The rheumatologists practiced on average 8.9 years (SD 6.7 yrs). When analyzing the data, different themes and patterns were identified. The main themes are summarized in Table 3.

Disease phenotype in elderly patients with RA. Nine (53%) out of 17 rheumatologists mentioned the existence of 2 different phenotypes in elderly patients with RA. They differentiated between elderly patients with young-onset RA (YORA), which often becomes indolent as patients age, and patients with an elderly onset RA (EORA), in which the level of disease activity may vary.

Most rheumatologists distinguished between vital and frail elderly patients with comorbidity (quote 1). They expressed that not age, but merely the presence of comorbidity and frailty gives a more precise determination of what should be considered the “elderly patient phenotype.”

Quote 1: “Although there are lots of vital elderly patients, there are also many frail 78-year-olds. Where do we set the

cutoff point? I think the frail elderly patient suffering from comorbidities needs another approach than the vital one.”

Role of functioning compared to disease activity in RA management. High levels of comorbidity and frailty influenced management goals of almost all rheumatologists. However, in patients ≥ 80 years, age instead of comorbidity and frailty was the most prominent factor that steered management. Some rheumatologists admitted that they do not always “push the limit” in pharmacological treatment of elderly patients, even if they notice synovitis on physical examination. Accepting synovitis is defensible in several cases, according to 12 rheumatologists (71%), specifically when functioning is not affected (quotes 2 and 3). These rheumatologists mentioned that the primary reason to intensify therapy is a significant functional impairment because of RA disease activity.

Preserving an acceptable level of functioning, defined by rheumatologists as the ability to perform activities in daily living, prevailed over DAS-steered treat-to-target and tight control principles. Pursuing complete disease remission became a secondary management goal. Instead, rheumatologists often strived to achieve low disease activity (quote 4).

Quote 2: “When a 75-year-old patient experiences some pain while suffering from a limited synovitis, but he accepts it, then I respect that.”

Quote 3: “It depends which joint is involved. A metacarpophalangeal 1 joint is much more important for hand grip

Table 1. Most important questions derived from the interview guide to analyze rheumatologists’ viewpoints on RA in the elderly patient population.

Questions about disease phenotypes in elderly patients with RA:
1. Do elderly patients with RA belong to another disease phenotype?
2. Is the disease course of elderly patients different, as compared to younger patients?
Questions about management goals and the interpretation of DAS28 in elderly patients with RA:
1. Are your management goals different in elderly as compared to younger patients with RA?
2. Do you balance between comorbid chronic conditions when setting management goals?
- If so, which factors influence your considerations?
3. Does every joint complaint need treatment, or can joint complaints be accepted to a certain degree?
4. Do you take the age of a patient into account when interpreting DAS28?
- If so, does high age change your interpretation of the DAS28?
Questions about management strategies in elderly RA patients:
1. Which therapeutic options do you prefer in elderly patients?
2. What are your considerations when choosing a certain drug?
3. Do you apply an absolute age limit when initiating a csDMARD or bDMARD?
- If so, what alternative treatment options do you choose at that moment?
4. Do you take comorbidity into account before initiating treatment for RA?
- If so, does the existence of comorbidity sometimes limit your options while treating RA?

RA: rheumatoid arthritis; DAS28: Disease Activity Score in 28 joints; csDMARD: conventional synthetic disease-modifying antirheumatic drug; bDMARD: biological DMARD.

Table 2. Baseline characteristics of participating rheumatologists.

Characteristics	Participants, n = 17
Age, yrs, mean (SD, range)	44.8 (7.7, 33–55)
Male, n (%)	5 (29)
Academic hospital, n (%)	7 (36.8)*
General hospital, n (%)	12 (63.2)*
Work experience, yrs, mean (SD, range)	8.9 (6.7, 1–20)
No. patient visits per week, mean (SD, range)	69.5 (36.4, 13–140)

* Numbers are not mutually exclusive.

than, for example, a metacarpophalangeal 3 joint. In the latter case, I can accept a persistent synovitis.”

Quote 4: “My management approach is less aggressive. It is not necessary to combat every small inflamed joint and to squeeze every last drop out of it. We should ask ourselves: ‘What does this patient really need at this moment?’ When I diagnose an arthritis that limits mobility, then it is urgent.”

Interpretation of the DAS28 in elderly patients. Fifteen (88%) out of 17 rheumatologists stated that they based management decisions on the result of the DAS28. Despite the widespread use and acceptance of the DAS28, almost all rheumatologists (94%) attributed a greater level of subjectivity to this score in elderly patients. Several factors that are not necessarily linked to RA and are common in elderly patients might contribute to higher levels of the DAS28, making this score less useful for measuring “true” RA disease activity. Some rheumatologists stated that the number of tender joints and the visual analog scale (VAS) score are “unreliable,” because both measurements might be influenced by other noninflammatory conditions, such as osteoarthritis and fibromyalgia (quotes 5 and 6). Another frequent reason not to use the DAS28 is the age-related physiological erythrocyte sedimen-

tation rate (ESR) elevation in elderly patients, which might distort the DAS28 result. Not merely age alone, but the presence of comorbidity and frailty led to the acceptance of higher DAS28 scores in elderly patients.

Quote 5: “Elderly RA patients often suffer from secondary osteoarthritis. I wonder if a high VAS score in these patients is caused by RA activity or by osteoarthritis.”

Quote 6: “My interpretation of the DAS28 depends on how the patient deals with pain. Some people, for example, have secondary fibromyalgia and experience more pain. If a higher DAS28 score pops up, I do not change my management strategy at that moment. This is also the case when I notice excessive osteoarthritis without actual inflammation.”

Management strategies in the elderly patient. Older rheumatologists (≥ 50 yrs) reported more often than younger rheumatologists (< 50 yrs; 6 out of 8 compared to 3 out of 9, respectively) that patients spontaneously discussed “ageing” and the consequences of ageing with them. Before initiating or changing antirheumatic therapy, the majority of rheumatologists weighed the number of comorbidities and frailty of an (elderly) patient and the functional consequences of these factors such as cognitive and physical decline, dependency, and polypharmacy. The presence of 1 or more of these factors made rheumatologists more hesitant to initiate or increase the dosage of conventional synthetic disease-modifying antirheumatic drugs (csDMARD). In cases of limited arthritis, rheumatologists frequently administered local glucocorticoids (GC). The majority of rheumatologists mentioned the frequent use of low-dose GC as monotherapy in elderly patients with comorbidity or polypharmacy. These rheumatologists stated that rapid remission, a favorable risk-benefit ratio, and cost reduction justified the use of GC (quote 7). Nevertheless, when a csDMARD was prescribed, most

Table 3. Summary of frequently mentioned views and experiences, as shared by rheumatologists.

Topic	Axial Codes and Themes
RA phenotypes	Recognition of 2 phenotypes (53% of rheumatologists): <ul style="list-style-type: none">- YORA: often low disease activity- EORA: variable disease activity levels
Primary management goal in elderly patients	Acceptable functioning in daily life (71% of rheumatologists)
Determining factors in management goals	Factors that promote implementation of acceptable functioning as primary management goal: <ul style="list-style-type: none">- Age ≥ 80 yrs- Presence of frailty, high comorbid burden- Presence of cognitive and physical decline, dependency- Polypharmacy
Interpretation of DAS28	Result of DAS28 has less influence on management (94% of rheumatologists) Factors that distort the DAS28 result: <ul style="list-style-type: none">- Comorbidity- Age-related physiological ESR elevation
Drug management strategies often applied in frail elderly patients	<ul style="list-style-type: none">- Glucocorticoid monotherapy (88%)- Low-dose csDMARD alone or low-dose csDMARD combination therapy (94%)- Reluctance to initiate bDMARD in patients aged ≥ 80 yrs (47%)

RA: rheumatoid arthritis; YORA: young-onset RA; EORA: elderly onset RA; DAS28: Disease Activity Score at 28 joints; ESR: erythrocyte sedimentation rate; csDMARD: conventional synthetic disease-modifying antirheumatic drug; bDMARD: biological DMARD.

rheumatologists prescribed lower dosages as advised by the European League Against Rheumatism (EULAR) recommendations to avoid side effects in elderly patients (quote 8 and 9). Six rheumatologists working in a general hospital indicated that they often prescribe a combination of low-dose csDMARD in elderly patients to achieve remission, instead of dose escalating. None of the rheumatologists working in an academic hospital mentioned low-dose combination therapy as a treatment option.

Interestingly, we observed that most rheumatologists who recognized EORA as a separate disease phenotype more often prescribed csDMARD and biological disease-modifying antirheumatic drugs (bDMARD) in elderly patients. Rheumatologists who did not differentiate between EORA and YORA were more likely to prescribe GC monotherapy.

Rheumatologists frequently justified the usage of less intensive antirheumatic therapy because the life span of elderly patients is shorter and the chance of developing erosions and deformities in the long term is therefore lower. When asked about application of an absolute age limit when initiating bDMARD, almost all participants denied discriminating against elderly patients. However, on reflection, the majority of participants were more reluctant to initiate a bDMARD in patients aged ≥ 80 (quote 10).

Quote 7: "I wonder if low-dose prednisone for the rest of their lives is considerably worse than to initiate biological therapy and cause a life-threatening infection?"

Quote 8: "When I prescribe methotrexate for an elderly patient, I start with 10 mg once a week and then increase the dosage up to 15 mg once a week. I do not dare to increase the dosage even higher, because I am afraid of bone marrow depression and subsequent pancytopenia."

Quote 9: "In patients aged above 70, it is not only about achieving disease remission. We need to consider the risks of the medication we prescribe for elderly patients."

Quote 10: "I mostly rely on biological and not on calendar age to evaluate the physical condition of a patient. However, in patients above the age of 80, I wonder what benefit lies in starting a biological."

DISCUSSION

To our knowledge, ours is the first study that assesses rheumatologists' views and experiences toward managing RA in elderly patients by semistructured interviews. The treat-to-target and tight control principles no longer predominated in the management of frail patients with comorbidity or in patients ≥ 80 years. Further, the result of the DAS28 less frequently steered management in elderly patients, because comorbidity and an age-related ESR elevation might distort the score. A hesitant position toward initiating or intensifying antirheumatic therapy was observed, especially in frail elderly having comorbidity, polypharmacy, and cognitive decline. This often resulted in a symptomatic though less future-oriented therapy approach.

Musculoskeletal diseases, and inflammatory rheumatic conditions in particular, have a profound effect on the functional capacity of patients because they often affect muscle strength and muscle coordination, possibly resulting in decreased mobility and social dependency¹⁰. The participating rheumatologists in our study attached great importance to the preservation of an acceptable level of functioning when managing RA in elderly patients. Rheumatologists applied a more holistic management strategy, especially in elderly patients who are more vulnerable to developing functional and cognitive decline. In line with other chronic diseases, optimizing functional ability, mental functioning, and social-environmental factors are part of the management strategy of elderly patients with RA¹¹.

In our study, rheumatologists mentioned a "distortion" of the DAS28 score because of comorbidity and an age-related ESR elevation. A previous study by Radovits, *et al*¹² showed a significant increase in ESR in elderly patients with RA, corrected for disease activity. However, the increased ESR did not influence the total DAS28-ESR in scores > 3.2 . Nonetheless, outcome measures commonly used in the assessment of RA seem to be influenced by both age and comorbidity. For example, a study by Sokka, *et al* demonstrated that 97% of patients with RA ≥ 50 years did not meet the American College of Rheumatology remission criteria for RA as compared to 85% in the control group, consisting of individuals ≥ 50 years without RA. These results suggest that remission criteria are not accurate to identify remission in elderly patients with RA¹³.

Our present study shows that as the age of a patient increases, rheumatologists are more reluctant to start or intensify DMARD therapy, as advised by the EULAR recommendations. Our observations are in line with previous research by Fraenkel, *et al*¹⁴, who showed a lower tendency to prescribe "aggressive" DMARD therapy in the elderly compared to their younger counterparts with equal disease activity and an equal amount of comorbidity. The same observation was made by Kievit, *et al*¹⁵, who emphasized rheumatologists' reluctance to intensify therapy in patients with RA aged ≥ 80 years. This hesitation to start "aggressive" treatment regimens in elderly patients might be justified. A study by Murota, *et al*¹⁶ indicated that the use of a bDMARD in the elderly is not risk-free, because of a 2.7 times higher risk of bDMARD discontinuation due to adverse events, compared to patients younger than 65 years of age. Lacaille, *et al*¹⁷ showed an increasing risk of severe infections in elderly patients and in patients with comorbidities. However, contrary to the opinions of the rheumatologists participating in this study, the risk of severe infection was greater in patients treated with GC than in patients treated with csDMARD¹⁷. The use of low-dose csDMARD might be preferential to GC monotherapy because they exhibit a steroid-sparing effect and a favorable safety and tolerability profile. DMARD therapy supports the preservation of a good

level of functioning in daily life. In elderly patients, especially those with cognitive impairment, the use of methotrexate should be closely monitored, because an administration mistake can have lethal consequences. Opting for another csDMARD, such as hydroxychloroquine, or local intraarticular GC injections, in case of limited arthritis, might be good alternatives. Because the pros and cons of low-dose GC therapy are still unclear, a new randomized controlled trial among patients of 65 years or older, the Glucocorticoid Low-dose Outcome in Rheumatoid Arthritis Study (GLORIA), might provide further direction (Trials Registration Number: NCT02585258).

A possible limitation of our study is the small sample size. We cannot completely rule out participation bias, because in some cases different rheumatologists working at the same center were included. However, a representative sample of rheumatologists was recruited by including rheumatologists from several medical centers and with a wide range of experience. Further, theoretical saturation was reached with this number of rheumatologists.

Most rheumatologists do not automatically adopt the treat-to-target and tight control principles in the management of RA in elderly patients. Instead, maintaining an acceptable level of functioning prevails. To optimize care for elderly patients with RA, a holistic view, focusing on overall functioning, comorbidity, and frailty is necessary. As the number of elderly patients with RA increases, future RA management guidelines should account for comorbidity and frailty to a greater extent.

ACKNOWLEDGMENT

The authors thank all rheumatologists who participated in this study.

REFERENCES

- United Nations, Department of Economic and Social Affairs, Population Division. World population ageing. United Nations; 2015. [Internet. Accessed January 16, 2018.] Available from: www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf
- Gabriel SE. Why do people with rheumatoid arthritis still die prematurely? *Ann Rheum Dis* 2008;67 Suppl 3:iii30-4.
- Gullick NJ, Scott DL. Co-morbidities in established rheumatoid arthritis. *Best Pract Res Clin Rheumatol* 2011;25:469-83.
- van Onna M, Boonen A. The challenging interplay between rheumatoid arthritis, ageing and comorbidities. *BMC Musculoskelet Disord* 2016;17:184.
- McCoy SS, Crowson CS, Maradit-Kremers H, Thorneau TM, Roger VL, Matteson EL, et al. Longterm outcomes and treatment after myocardial infarction in patients with rheumatoid arthritis. *J Rheumatol* 2013;40:605-10.
- Villacampa-Fernandez P, Navarro-Pardo E, Tarin JJ, Cano A. Frailty and multimorbidity: Two related yet different concepts. *Maturitas* 2017;95:31-5.
- Ishchenko A, Lories RJ. Safety and efficacy of biological disease-modifying antirheumatic drugs in older rheumatoid arthritis patients: staying the distance. *Drugs Aging* 2016;33:387-98.
- Michaud K, Wolfe F. Comorbidities in rheumatoid arthritis. *Best Pract Res Clin Rheumatol* 2007;21:885-906.
- Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health Serv Res* 2007;42:1758-72.
- Tutuncu Z, Kavanaugh A. Rheumatic disease in the elderly: rheumatoid arthritis. *Rheum Dis Clin North Am* 2007;33:57-70.
- Guaraldi G, Palella FJ Jr. Clinical implications of aging with HIV infection: perspectives and the future medical care agenda. *AIDS* 2017;31 Suppl 2:S129-35.
- Radovits BJ, Franssen J, van Riel PL, Laan RF. Influence of age and gender on the 28-joint Disease Activity Score (DAS28) in rheumatoid arthritis. *Ann Rheum Dis* 2008;67:1127-31.
- Sokka T, Makinen H, Hannonen P, Pincus T. Most people over age 50 in the general population do not meet ACR remission criteria or OMERACT minimal disease activity criteria for rheumatoid arthritis. *Rheumatology* 2007;46:1020-3.
- Fraenkel L, Rabidou N, Dhar R. Are rheumatologists' treatment decisions influenced by patients' age? *Rheumatology* 2006;45:1555-7.
- Kievit W, van Hulst L, van Riel P, Fraenkel L. Factors that influence rheumatologists' decisions to escalate care in rheumatoid arthritis: results from a choice-based conjoint analysis. *Arthritis Care Res* 2010;62:842-7.
- Murota A, Kaneko Y, Yamaoka K, Takeuchi T. Safety of biologic agents in elderly patients with rheumatoid arthritis. *J Rheumatol* 2016;43:1984-8.
- Lacaille D, Guh DP, Abrahamowicz M, Anis AH, Esdaile JM. Use of nonbiologic disease-modifying antirheumatic drugs and risk of infection in patients with rheumatoid arthritis. *Arthritis Rheum* 2008;59:1074-81.