ORIGINAL ARTICLE

Acute inflammatory arthritis in the elderly; Old flames, new sparks

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Abstract

Background: The overall world prevalence of rheumatoid arthritis (RA) ranges from 0.5-1.0%. The annual incidence of RA in most European countries ranges from roughly 0.4 to >2.5 per 1,000 adults, increasing with age. A significant proportion of newly diagnosed cases will evolve into true erosive RA.

Methods: The aim of this cohort study was to study the characteristics of new developing, acute (<1 year), rheumatoid arthritis in an elderly (>65 years) population; its presenting features, accompanying manifestations and laboratory findings. One hundred twenty eight patients (103♀, 25♂) who presented to the rheumatology outpatients clinic with new-onset RA were included in the study. 42.2% of the patients had pre-existing osteoarthritis.

Results: At presentation, 14.3% of the patients had systemic manifestations (fever, weight loss), 25.78% reported concomitant sicca symptomatology, and 50.9% were found to have abnormal haematological parameters (anemia and/or thrombocytosis). Clinical and laboratory parameters of the disease were analyzed and related to disease manifestations.. Haematological abnormalities were found to be associated both with increased inflammatory markers, as well as with increased titres of rheumatoid factor (RF), but not anti - cyclic citrullinated peptide (CCP) antibodies, in contrary to systemic manifestations which were not found to be related to the above mentioned parameters.

Conclusions: As the global population is becoming older, physicians will be challenged with the recognition and treatment of these conditions and their particular features in an increasing number of geriatric patients; within the context of the specific characteristics and comorbidities of this age group. Hippokratia 2014; 18 (3): 231-233.

Keywords: Inflammatory arthritis, elderly, presentation, characteristics

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Introduction

Early onset (<1 year) rheumatoid arthritis (RA) is a challenging diagnosis[1]. A significant proportion of patients presenting with acute (<1 year), early RA will progress to true erosive arthritis[2]. Early referral and consideration of specific clinical and laboratory parameters have been the goal of medical expert teams to aid in the prompt recognition and targeted treatment of these syndromes (EULAR/ACR, 2010 vs ACR 1987 criteria for the diagnosis of RA[3-4]). Interest has focused on younger populations, spanning their productive lifecycle phase. As the world population progressively ages however, and given the increasing and cumulative incidence of rheumatoid arthritis with increasing age[5], physicians will be forced to recognize and deal with an increasing number of analogous cases in an elderly population with disease characteristics affected by, and adjusted with, the biological age and the accompanying comorbidities of the affected individuals[6]. The aim of this study was to record the disease characteristics at presentation (oligo/polyarticular and joint type involvement, presence or absence of systemic manifestations, laboratory parameters), and their correlations with specific manifestations in an elderly population presenting with acute, new developing arthritis at the rheumatology outpatients' clinic.

Patients and Methods

For the purposes of this study, data from patients aged over 65 years presenting with new, acute (<1 year duration of symptomatology) RA to the outpatients' clinic over a 5-year period were analyzed. Patients included, had ≥1 follow-up visit within a time period of 1 year. Patients who had been evaluated initially elsewhere and/or had already received treatment, were excluded from the study. Additionally, patients with a diagnosis of other systemic autoimmune conditions, as well as patients with true polymyalgia rheumatica were also excluded from the study. In the patients included, polymyalgia rheumatica was ruled out either by the presence of peripheral synovitis or by positivity for rheumatoid factor (RF) and/or anti

- cyclic citrullinated peptide (CCP) antibodies. Demographics (age/gender) as well as duration of symptomatology prior to the initial consultation, and other related comorbidities (degenerative osteoarthritis, chondrocalcinosis and sicca symptomatology) were recorded.

Inflammatory markers and hematological parameters were routinely analyzed. Radiology was requested mainly in the cases where it was deemed necessary to diagnostically confirm the presence of osteoarthritis and/or chondrocalcinosis. When considered appropriate, quantitative and qualitative analysis of immunoglobulin fractions were requested. Autoantibody profiling was not routinely analyzed; specific autoantibody characterization was requested mainly in the cases of co-existing symptoms, e.g. sicca symptomatology or other autoimmune manifestations, or in the cases of persisting symptomatology in the absence of diagnostic radiological findings. Frequency and levels of positivity for autoantibodies were subsequently related to the presence of other autoimmune manifestations. Statistical analysis was performed using SPSS, version 19 (SPSS Inc., Chicago, IL, USA). Variables were described as mean values ± standard deviation and median (minimum-maximum values) according to distributions normality. t-student and Mann Whitney test were used to compare mean values of continuous variables and chi square for qualitative variables respectively.

Results

One hundred and twenty eight patients were included (103 female, 25 male). Mean age of the patients was 71.2 ± 5.2 years. The majority of the patients (73/128, 57%) presented to the clinic 1-6 months after the initiation of symptomatology. However, a significant proportion of the patients (55/128, 43%) presented >6 months after manifestation of the disease. The vast majority of the patients presented with polyarthritis (79.5%; 102/128); symptomatology spared the lower extremities more often than the upper ones (74.5% of the patients presented with lower extremity manifestations compared to 97% with symptoms affecting the upper extremities respectively). Oligoarthritis, presenting in 23/118 patients (19%), was not associated (p=0.67) with radiological evidence of chondrocalcinosis (detected in 13 patients, 10.1%). 54 patients (42.2%) had preexisting osteoarthritis. 33 patients (25.78%) reported sicca symptomatology, which was not however found to correlate significantly with the detection of antinuclear autoantibodies. At presentation, all patients fulfilled the ACR 2010 criteria for rheumatoid arthritis. Patients with oligoarthritis were either seropositive (RF and/or anti-CCP +; 16/25) or had typical RA-compatible radiological progression. No patient had a positive history for psoriasis. Mean disease activity score of 28 joints (DAS28) of the patients at presentation was 5.5 ± 0.99 (high disease activity). Clinical and laboratory parameters are summarized in Table 1. Eighteen out of 128 (14%) patients had systemic manifestations (fever, weight loss). Systemic manifestations were not related significantly to increased inflammatory markers [erythrocyte sedimentation rate (ESR): 56.7 ± 31.4 mm/hr in those with, vs 45.5 ± 29.8 in those without systemic manifestations, p=0.192, and C-reactive protein (CRP): 34.6 (2.6-141) mg/l in those with, vs 8 (0.3-112) in those without systemic manifestations, p=0.094], and/ or with high titres of positive RF (p=0.512) and/ or anti-CCP autoantibodies (p=0.954). On the other hand, hematological abnormalities (anemia: Hb <11 g/dl, and/or thrombocytosis: PLTs >400 x10^3/μl) were found to significantly associate with high titres of positive RF (p=0.01) but not anti-CCP antibodies (p=0.102) (>5x above normal), as well as with increased inflammatory markers [ESR: 65.1 ± 28.6 in those with, vs 33.3 ± 21.1 in those without hematologic manifestations, p<0.001, and CRP: 20.5 mg/l (0.3-112) in those with, vs 3.8 (0.3-55) in those without hematologic manifestations, p=0.001].

Table 1: Clinical and laboratory parameters of patients over 65 years presenting with new onset rheumatoid arthritis to the outpatients' clinic.

Clinical parameters	**n(%)**
Oligoarthritis(n (%))	25/128 (19.5%)
Polyarthritis(n (%))	102/128 (79.5%)
Tender joints (mean±SD)	10.2 ± 5.1
Swollen joints (mean±SD)	3.74 ± 2.4
Systemic symptoms (n (%))	18/128 (14%)
Anemia (n (%))	51/128 (39.8%)
Thrombocytosis (n (%))	52/128 (40.6%)
Laboratory parameters n (%)	
ESR mm/hr (mean ± SD)	48.3 ± 29.9
CRP mg/l (mean ± SD)	7.8 (0.3-154)
DAS28 (mean ± SD)	5.5 ± 0.99
RF + [n (%)]	48/102 (47.1)
anti-CCP + [n (%)]	32/67 (47.8)
ANA + [n (%)]	23/76 (30.2)
Presence of immunoglobulin [n (%)] -low, normal and high polyclonal-	3/74 (4.1%), 57/74 (77%) and 14/74 (18.9%)

SD: standard deviation, ESR: erythrocyte sedimentation rate, CRP: C-reactive protein, DAS28: disease activity score of 28 joints, RF: rheumatoid factor, anti-CCP: anti - cyclic citrullinated peptide antibodies, ANA: antinuclear antibodies.

Discussion

The female preponderance is established in rheumatoid arthritis, the gender ratio however is allegedly expected to tend to normalize in more advanced ages[7]. Our study was not epidemiological; it was rather an analysis of a selected cohort of patients who presented to a specialized outpatients' clinic with manifested symptoms. Even though it summarizes data derived from a small cohort study, this study provides interesting observations in a population not particularly appreciated in previous studies.

Epidemiological studies show an increased frequen-

cy of rheumatoid arthritis with increasing age[8]; accurate conclusions however cannot be drawn due to the heterogeneity of populations analyzed in the different clinical studies.

An interesting epidemiological feature of this age group, directly affecting the results of this and other analogous studies, relates to the objective intensity of the symptomatology. These patients appear to be less affected by fibromyalgia than their younger counterparts[9]; hence, inflammatory markers may reflect more accurately their general health scores. On the other hand, the detection of potently increased inflammatory markers (ESR, CRP) and the low incidence of chondrocalcinosis as evidence of other pathogenetic causes of inflammatory arthropathies point towards a genuine inflammatory arthritic condition.

The main reason to seek consultation by a physician in this cohort remains pain and functional disability[10]; the latter may not appear as pronounced as in younger patients. It is however noteworthy, that a significant proportion of the patients manifests systemic symptoms such as fever, weight loss and/ or hematological abnormalities, equally perceived as clinically important disabilities. Studies from larger cohorts will confirm if prevalence of these manifestations is more frequent in older patients than in younger individuals. According to the results of this study, these systemic symptoms, even though frequently associated with increased inflammatory burden are not significantly related to it or to the detection of high positive titers of autoantibodies (RF and/ or anti-CCP autoantibodies). Interestingly, hematological abnormalities (anemia and thrombocytosis) were found to significantly associate both with increased inflammatory markers, as well as with increased titers of rheumatoid factor but not anti-CCP autoantibodies. In support of our findings is the prevalence of positivity for antinuclear antibodies (23/76, 30.2%), within the expected values for the specific age group, the female preponderance of the individuals and the disease under analysis, indicating a relatively homogeneous population[11-13]. Larger scale studies will be needed to safely extrapolate the prevalence of autoantibody positivity[14] and other clinical and laboratory characteristics of this particular age group, in order to propose safe and efficient treatment modalities for these particular patients[6].

Conflict of interest

The authors report no conflicts of interest.

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