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Original Research Article

Predictors of Severity in Psoriatic Arthritis

Tarik Youssoufi*, Fatima Zahra Haddani, Youssef El Jebbouri, Mehdi Boudhar, Abdelhafid Guich, Hasna Hassikou

Rheumatologic department, Military Hospital of Moulay Ismail, Meknes, Morocco

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***Corresponding author:** Youssoufi Tarik

Abstract

Psoriatic rheumatism has seen many recent therapeutic advances, as well as new recommendations highlighting the importance of specifying certain prognostic factors in order to manage this condition early. To this end, 63 patients were studied for psoriatic rheumatism, comparing those with clinical and/or radiographic progression of the disease with those whose rheumatism is in a state of so-called minimal activity. A significant correlation was found with the extent of cutaneous psoriasis, polyarticular involvement and biological inflammatory syndrome. Our results were then compared with those in the literature.

Keywords: Psoriatic arthritis, prognosis, severity.

INTRODUCTION

Psoriatic arthritis (PsA) is a chronic inflammatory rheumatism that is often under-diagnosed despite the fact that it is widely encountered in routine practice. It has been a differentiated clinical entity for over 50 years, however there is as yet no data available to optimally assess activity, prognosis, severity and response to treatment.

Psoriatic arthritis can affect 0.3 to 1% of the population. This condition, long considered benign, is now approved as causing severe co-morbidities, as well as an over-risk of death compared to the general population.

In order to determine factors predictive of the severity of PsA, Patients with clinical and/or radiographic progression of the disease were compared in this work, in this work; patients who presented a clinical and/or radiographic progression of the disease were compared to those whose rheumatism is in a state of so-called minimal activity. We compared our results to the data in the literature.

MATERIALS AND METHODS

This is a retrospective observational study involving 63 patients meeting the CASPAR criteria for psoriatic arthritis, followed between 2012 and 2018 at the Rheumatology Department of the My Ismail Military Hospital in Meknes. We collected the clinical assessments, biological data and imaging for the 6- and 12-month controls.

The operating sheet contained the following elements: personal and family history of the patients, duration of disease progression, clinical examination data detailing the data for each condition: peripheral joint examination (count of painful and swollen joints), enthesic examination, presence of dactylitis or sequelae of dactylitis, axial examination, cutaneousphanerian and extra-articular examination. The biological work-up included a standard inflammatory and infectious work-up, a work-up looking for possible comorbidities (renal, hepatic, phosphocalcic, lipidic work-up, pulmonary radiograph, electrocardiogram). Imaging includes standard radiographs of the pelvis, hands, spine and various joints and/or entheses depending on the complaint. The scores used were DAS28 (CRP) and DAS28 (VS) for peripheral shape and ASDAS (CRP) and ASDAS (VS) for axial shape, as well as PASI for skin involvement. The functional impact of the disease by HAQ score, comorbidities and treatment history.

Clinical course is defined by the presence of joint limitation > 20% of normal range of motion, without the presence of synovitis, deformity, subluxation or loosening. While radiologic evolution was considered for each joint by the presence of at least one of the following: bone demineralization, joint pinching, erosion, or joint disorganization (including ankylosis, pencil-in-cup, and total joint destruction).

Patients are divided into 2 groups. Group 1: Patients who have presented a clinical and/or radiographic progression of the disease. Group 2: patients with a state of so-called minimal disease activity, while comparing our data with those in the literature.

Patients with minimal disease activity are those with at least 5 of the following 7 criteria: number of painful joints <2, number of swollen joints <2, enthesic index <2, EVA pain <2/10e, skin psoriasis area <3%, C-protein-reactive protein (CRP) <6 mg/L, HAQ score <0.5 (12). The median was calculated over the 2 years of follow-up for each of the parameters so that each patient could be included in one of the 2 arms.

The comparison revealed differences between the two groups, which may indicate their involvement in the severity of psoriatic arthritis. The descriptive data of the probable factors of disease progression were analysed using different logistic regression models; considering the change in the number of damaged joints.

RESULTS

In this study, 63 patients followed up for PsA were included, including 31 females and 32 males, with a median age at study entry of 49±11 years (age limits between 24 and 72 years), a mean age of onset of 39 years (16 to 69 years) and a mean duration of progression of 9 years. 20 patients were considered to have minimal disease activity at the start of the study (12 females versus 8 males), with a mean age of 50±12 years, while 43 others did not meet 5 of the 7 criteria for disease non-activity. Of these, the most common activity criterion met was extensive cutaneous psoriasis with >3% of skin surface area (n=15) and CRP >6 mg/L (n=20).

The demographic, clinical and therapeutic characteristics of patients with minimal disease activity were then compared with those without. In the univariate and then multivariate analysis, there were no factors at study entry that increased the likelihood of achieving high disease activity during the follow-up period.

Univariate logistic regression analysis showed that high CRP and polyarticular onset (number of painful and/or swollen joints > 4) reduced the probability of achieving minimal sustained disease activity. Multivariate analysis showed similar results.

Among patients with minimal sustained disease activity (Group 2) 78% had no progression of radiological joint damage, compared to 42% in Group 1. Analysing the radiological progressions, there was an increase in coxitis in group 1 (n = 12 / 43 patients) compared to group 2 (n = 1 / 20 patients).

DISCUSSION

The Classification Criteria for Psoriatic Arthritis (CASPAR) was developed in 2006 to standardize the classification of PsA for clinical trials and observational studies and to differentiate it from other forms of arthritis [1, 2]. These criteria demonstrate that musculoskeletal inflammation of the joints, spine, or entheses is essential for recognition of PsA. More recently, the Psoriasis and Psoriatic Arthritis Research and Assessment Panel (GRAPPA) has identified six commonly accepted clinical areas of peripheral arthritis, axial disease, enthesitis, dactylitis, skin and nails that should be considered when treating patients [3].

A prospective study in Toronto showed that 17.6% of patients had remission of peripheral joint activity (no actively inflamed joint) for at least 12 months, but 52% of these patients had relapsed during follow-up [4]. In a Swedish cohort of patients with PsA, 17% were in remission at 2 years (no painful or swollen joints or normal inflammatory markers) [5]. Another study showed a higher frequency of 24% of patients, despite the use of stricter criteria such as absence of dactylitis and a zero enthestic index [6]. This may be partly related to the availability of treatments over the last 2 decades.

Data from our study show that minimal and sustained disease activity occurred in about one-third of the population. The higher prevalence can be explained by the less stringent criteria used for remission in previous studies. However, our results are similar to those published in the various studies carried out by Dr. Gladman's team [7]. Low levels of disease activity have been allowed in all areas and only 5 of the 7 thresholds must have been reached. In previous studies, disease flare-up occurred after a significant duration of minimal activity in 10% of patients, demonstrating the variability of disease activity whether on or off treatment. In our series, the majority of patients with minimal disease activity continued on the same treatment. For patients on biotherapies (20 in number), pre-biotherapy follow-up was marked by disease flare-ups and radiological progression, which explains their inclusion in the non- minimal disease activity group.

Among patients who did not meet all 7 criteria, the most common factors identified were skin involvement and the patient's overall assessment of disease activity. The latter may represent the patient's perception of active skin disease. These findings may indicate that skin psoriasis is more difficult to control and that patients or physicians are more tolerant of moderate skin activity if other aspects of the disease are well controlled. However, it is important that criteria for measuring skin disease and patient-reported outcomes be included to ensure a comprehensive approach to the treatment of psoriatic disease.

Although there was a marked reduction in the progression of joint damage, there was still evidence of progression in patients with minimal activity. It should therefore be noted that these criteria do not relate to remission but rather to minimum disease activity. Patients who meet the minimum activity criteria may have active disease in 1 or 2 areas while meeting the criteria for remission.

Similarly, we know that not all inflamed joints can be identified by clinical examination and that it is particularly insensitive to low levels of inflammation (infraclinical synovitis) [8]. In patients with rheumatoid arthritis in remission (as defined by the Disease Activity Score), joint destruction has been shown to occur even on normal clinical examination and is related to the sub-clinical inflammation observed on imaging [9]. In our study, the synovitis count was based on clinical examination, which is probably less sensitive to minimal synovitis and early joint damage and minor changes on radiography. Therefore, the progression of joint damage in both groups may be underestimated. Further research with systems including modern imaging and validated scoring systems should be conducted.

The advantage of using observational cohort data on psoriatic arthritis is that it provides relevant information on real-life patients who are treated according to their clinical status rather than according to the clinical trial protocol. However, it is precisely because of this that some conclusions drawn from these data may have limitations. Analysis of these cohorts has shown that even under synthetic or biological DMARDs there may be an increase in the number of damaged joints [10].

Based on these observational data, it appears that the type of treatment and the phenotype of benign disease may have an impact on the patient's ability to achieve minimal disease activity. To understand the relative impact of disease phenotype and treatment, new criteria need to be tested in an intervention study.

Psoriatic arthritis is known to be a heterogeneous condition, with the progression of joint damage varying greatly from one individual to another. In some publications, polyarticular involvement (>4 painful and/or swollen joints), a biological inflammatory syndrome, and pre-existing joint damage at the time of diagnosis of ASRD have been shown to predict the future course of joint damage (3). The association between biological inflammatory syndrome and joint damage was confirmed in our study.

As part of the identification of prognostic factors in psoriatic arthritis, various studies have evaluated various associations with HLA genes, including serological, synovial and genetic biomarkers [10], but no prognostic factors have been identified. However, the achievement of early disease diagnosis criteria will improve the prognosis in terms of progression of joint damage. Thus, as progress is made in understanding the pathophysiological mechanisms of the disease, new attractive therapeutic targets will emerge and consequently the proportion of patients achieving minimal disease activity will increase.

CONCLUSION

Psoriatic arthritis is a very heterogeneous rheumatic entity of chronic inflammatory rheumatic diseases. In our series, the factors predictive of severity are: polyarticular inflammatory disease, biological inflammatory syndrome and extensive skin psoriasis. Thus, on the one hand, it can be suggested that management aimed at reducing the number of active joints and controlling the inflammatory syndrome should be considered, ideally at an early stage to prevent joint damage. On the other hand, specialised and early management of skin lesions is also essential to improve the prognosis of patients being monitored for psoriatic arthritis.

Expression of Interest: The authors declare that they have no conflict of interest in connection with this article.

REFERENCES

1. Mease, P. J., Garg, A., Helliwell, P. S., Park, J. J., & Gladman, D. D. (2014). Development of criteria to distinguish inflammatory from noninflammatory arthritis, enthesitis, dactylitis, and spondylitis: a report from the GRAPPA 2013 Annual Meeting. *The Journal of rheumatology*, *41*(6), 1249-1251.
2. Taylor, W., Gladman, D., Helliwell, P., Marchesoni, A., Mease, P., & Mielants, H. (2006). Classification criteria for psoriatic arthritis: development of new criteria from a large international study. *Arthritis & Rheumatism: Official Journal of the American College of Rheumatology*, *54*(8), 2665-2673.
3. Coates, L. C., Kavanaugh, A., Mease, P. J., Soriano, E. R., Laura Acosta- Felquer, M., Armstrong, A. W., ... & Espinoza, L. R. (2016). Group for research and assessment of psoriasis and psoriatic arthritis 2015 treatment recommendations for psoriatic arthritis. *Arthritis & rheumatology*, *68*(5), 1060-1071.
4. Gladman, D. D., Hing, E. N., Schentag, C. T., & Cook, R. J. (2001). Remission in psoriatic arthritis. *The Journal of Rheumatology*, *28*(5), 1045-1048.
5. Lindqvist, U. R., Alenius, G. M., Husmark, T., Theander, E., Holmström, G., Larsson, P. T., & Psoriatic Arthritis Group of the Society for Rheumatology. (2008). The Swedish early psoriatic

arthritis register--2-year followup: a comparison with early rheumatoid arthritis. *The Journal of Rheumatology*, *35*(4), 668-673.

6. Cantini, F., Niccoli, L., Nannini, C., Cassara, E., Pasquetti, P., Olivieri, I., & Salvarani, C. (2008). Frequency and duration of clinical remission in patients with peripheral psoriatic arthritis requiring second-line drugs. *Rheumatology*, *47*(6), 872-876.
7. Gladman, D. D., Farewell, V. T., & Nadeau, C. (1995). Clinical indicators of progression in psoriatic arthritis: multivariate relative risk model. *The Journal of Rheumatology*, *22*(4), 675-679.
8. Wakefield, R. J., Green, M. J., Marzo-Ortega, H., Conaghan, P. G., Gibbon, W. W., McGonagle, D., ... & Emery, P. (2004). Should oligoarthritis be reclassified? Ultrasound reveals a high prevalence of subclinical disease. *Annals of the Rheumatic Diseases*, *63*(4), 382-385.
9. Brown, A. K., Quinn, M. A., Karim, Z., Conaghan, P. G., Peterfy, C. G., Hensor, E., ... & Emery, P. (2006). Presence of significant synovitis in rheumatoid arthritis patients with disease-modifying antirheumatic drug–induced clinical remission: evidence from an imaging study may explain structural progression. *Arthritis & Rheumatism: Official Journal of the American College of Rheumatology*, *54*(12), 3761-3773.
10. Coates, L. C., Cook, R., Lee, K. A., Chandran, V., & Gladman, D. D. (2010). Frequency, predictors, and prognosis of sustained minimal disease activity in an observational psoriatic arthritis cohort. *Arthritis care & research*, *62*(7), 970-976.
11. Sueiro, J. L. F., & Gontad, J. M. L. (2012). Factores pronóstico en la artritis psoriásica. *Reumatología Clínica*, *8*, 7-9.