|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
NLM (National Library of Medicine ID: 101738825)
Index Copernicus Value 2019: 79.34
Original Research Article
Volume 5, Issue 11; November: 2021; Page No. 183-188

THE PROSPECTIVE STUDY FOR THE MANAGEMENT OF PSORIASIS ARTHRITIS AND RECOVERY OF LESIONS IN TERTIARY CARE HOSPITAL

Dr. Atul Giri[1] , Dr Samkit Shah[2]
[1] Assistant Professor Dept of Dermatology, Vedantaa Institute of Medical Sciences, Saswand, Dhundalwadi, Palgahr, Maharashtra
[2] Assistant Professor Dept of Dermatology, Vedantaa Institute of Medical Sciences, Saswand, Dhundalwadi, Palgahr, Maharashtra

Article Info: Received 03 October 2021; Accepted 07 November 2021
DOI: https://doi.org/10.32553/ijmbs.v5i11.2420
Corresponding author: Dr. Samkit Shah
Conflict of interest: No conflict of interest.

Abstract
Introduction: Psoriatic arthritis or PsA or PSA is a heterogeneous, multisystem chronic disease that includes the inflammation and irritation of the synovial tissue, enthuses, skin, and usually seronegative for rheumatoid factor. It causes reduced articular capacity and higher mortality yet additionally to influence patients' capacity to work and influence their social relations. The main clinical features are spondylitis, inflammatory neck pain, thoracic inflammatory pain, axial symptoms and Sacroiliitis typically can happen unilaterally and become bilaterally before long is atypical side effects among PsA.
Objectives: To find the appropriate treatment of mild, moderate and severe form of psoriatic arthritis.
Materials and Methods: The prospective study with 60 patients were classified according to their severity and then they were given drug treatment. The prognosis of their psoriatic lesion during the follow up was used for evaluation of the efficient drug management.
Result: The study found out that the mild cases were resolved by prescribing corticosteroids and NSAIDs while severe form needed to be given DMARDs and anti-tumor necrosis factor agent along with the previous two drugs. The study has shown that the 100% of the mild cases were resolved due to efficient prescription of appropriate drugs while 45.4% of the severe cases were resolved in severe form due to its severity itself and 2 patients did not receive anti-tumor necrosis factor agent, among which 1 patient did not receive DMARDs as well. Only 11 patients received DMARDs and none of them received anti-tumor necrosis factor agent in moderate form, which resulted in only 29% of resolution of lesion in moderate cases.
Conclusion: The study has shown that mild cases can be managed by corticosteroids and NSAIDs while moderate cases must be managed ny DMARDs while severe cases should be given the combination therapy of DMARDs and anti-tumor necrosis factor agent.
Keywords: psoriasis, arthritis, dmards

Introduction

Psoriatic arthritis [PSA] is a heterogeneous, multisystem chronic disease that includes the inflammation and irritation of the synovial tissue, enthuses, skin, and usually seronegative for rheumatoid factor [1]. The diversity of the affected organ systems includes axial and peripheral joints, enthuses, nails and skin. It is a skin condition that presents with a red flaky rash on the exterior surfaces however may likewise influence the scalp and flexural regions just as palms and soles [2]. PSA patients are presented with various clinical features such as diverse articular and dermatological features. Though it was initially viewed as a mild disease, it now noted that in the previous ten years, 40-60% of the patients have developed erosive and deforming joint complications [1,2]. Psoriatic arthritis initiated joint difficulties not just to bring down articular capacity and higher mortality yet additionally to influence patients' capacity to work and influence their social relations. With its spectrum broad in nature, PsA has these combinations of conditions that can be found in isolation or blended with others. The major clinical features are spondylitis (18%-46%), inflammatory neck pain (23%-39%), thoracic inflammatory pain(13%-21%), and axial symptoms(25%-50%). Sacroiliitis typically can happen unilaterally and become bilaterally before long is atypical side effects among PsA[1,3].

Psoriatic arthritis for most of the parts happens in the age of 40-50 years of age, and illness might also happen in younger people. Though psoriasis Vulgaris is the most common type of psoriatic arthritis. A couple of extents of cases are connected to guttate and pustular psoriasis, single nails without skin involvement.[3] Environmental elements, including disease (like streptococcus, human immunodeficiency infection), drug use, and joint injury are known to add to PSA. Pregnancy, steroid use, and emotional stress play as triggers for both skin and joint psoriasis[3].

The clinical manifestation of PsA is unique and varied from other arthritis. The involvement of spinal joints and sacroiliac joints is a characteristic of psoriatic arthritis.

These lesions are known to show significant asymmetry.it most commonly involves the joints of the peripheral system of the skeleton showing distinct asymmetry. Smaller joints of hands and feet, especially distal interphalangeal joints, seem to be a distinct feature[4]. These lesions are known to follow by proliferative lesions of bone tissue located at the erosion margins. In psoriatic arthritis with erosions, the osteophytes surrounding the erosion are visible, which is known to be its typical feature[4,5]. The radiographic evaluation of the joint space width is even now a valuable way to determine the joint lesions. narrowing of the joint space shows the thinning of the articular joints. this joint space remains preserved until the last stage of the disease(similar to that of patients with gout). It is important to determine whether the changes in the joint space width are focal or uniform [3,4,5].

For the inflammatory lesions uniform narrowing of the space is the characteristic form, while for the degenerative lesions focal changes are the characteristic feature. In the knee joints, hips joints, and interphalangeal joints these changes are more pronounced. during the final stages of the inflammatory process, destruction of the cartilage within the joint spaces is seen[4].

Aims and Objectives

This study intends to find the appropriate drug treatment in mild, moderate and severe form of psoriatic arthritis based on the prognostic outcome of the psoriatic lesion in each case of mild, moderate and severe form of psoriatic arthritis.

Materials and Methods

The study design is prospective which was conducted between January 2021 and August 2021. The study has considered patients who visited the OPD of the Dermatology Department and continued the treatment process.The patients were diagnosed by milti-modal approaches including clinical features, imaging findings like CT, ultrasound in few cases, etc. The features in each modality or approach is given in the table below.

Table 1: The criteria of diagnosing Psoriatic Arthritis

Modality	Findings
Clinical features	spondylitis, sacroilitis, neck pain, thoracic inflammatory pain, dactylitis
Findings of imaging modality	bone proliferation and destruction, pencil-in-cup deformity in severe cases, periostitis, axial involvement, narrow cervical intervertebral discs, atlantoaxial subluxation or fusion
Ultrasound findings	degenerative tendinitis, peritendinitis, retrocalcaneal bursitis

The inclusion criteria followed were the patients had confirmed diagnosis of psoriatic arthritis, patients were between 20 years and 40 years old, the patient who came to Dermatology Department (OPD) and had visible psoriatic lesions. The exclusion criteria followed were thepatient who did not complete the whole treatment in the institute, the patient with other existing chronic diseases and the patient who did not followed the treatment schedule timely.

The finally included patients were given respective treatments and the outcomes were studied and analysed. The basic principle behind the management of psoriatic arthritis was strictly followed by the clinicians. The various management protocol that was provided to the patients are depicted in the Figure 1 below.

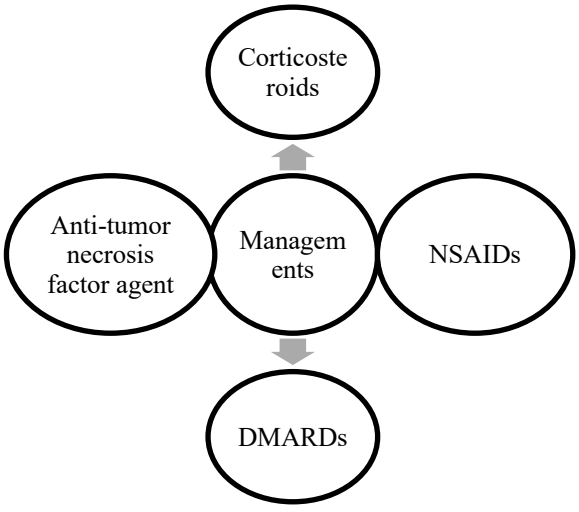

Figure 1: The types of managements used in this study

This study considered 60 patients from Dermatology Department who had confirmed diagnosis and the treatments were provided from the institution itself. Finally these are the patients who were evaluated and hence included in the study.

Result

The study found that the age of the patients included in this study was 30.41±6.23 years old. The ratio of Male and Female was 1.16. For assessment, the recovery of Psoriatic lesions were used, namely, nail dystrophy, nail pitting, onycholysis, skin lesion. Clinicians provided each of the patient with drug treatment based on their knowledge and clinical perception. The treatments were recorded and follow up was done for each of the included patient. The follow up result was used for evaluation of the Psoriatic Arthritis management.

In this hospital, the clinicians prescribed treatment to the patients, either monotherapy or combinations therapy.
The following table shows the number of patients received each of the drug treatment. Usually, each patient was given combination therapy but sometimes monotherapy was prescribed. The table below shows there were 18 patients who had mild severity, 31 patients with moderate severity and 11 patients had severe psoriatic arthritis. The number of patients in each class of severity is shown in the table below (Table 2).

Table 2: The number of patients with mild, moderate and severe form of the disease and number of patients received each of the drug treatment

		Numbers of patients received drugs			
Severity of the disease	**Number of patients**	**Corticosteroid**	**NSAIDs**	**DMARDs**	**Anti-Tumor necrosis factor agent**
Mild	18	16	18	0	0
Moderate	31	31	31	11	0
Severe	11	11	11	10	9

Upon completion of the drug treatment, the patients were followed up and were assessed for their lesions. The recovery or disappearance of the psoriatic lesions was considered as the success of the treatment. It was found that the all the patients with mild form of the disease were recovered, followed by patients with severe form. The least success was found in the patients with moderate form because the prescribed treatment was not efficient for the patients with moderate psoriasis. In the patients with mild severity, corticosteroids and NSAIDs were suffient to make lesions disappear during the follow up assessment. In case of patients with severe psoriatic arthritis, all the diagnostic features including the imaging features were present. So, out of total 11 patients who had severe form, all of them received corticosteroids and NSAIDs. Except 1 patients, all of them also received DMARDs. Only 2 patients with severe form did not receive anti-tumor necrosis factor agent due to their own decision or personal problems. As most of the patients with severe form received DMARDs alongwith combination with anti-tumor necrosis factor agent, 45.4% of the patients with severe form recovered from psoriatic lesions. In case of moderate form, out of 31 patients, only 11 patients were prescribed DMARDs while none of them received anti-tumor necrosis factor agent. Therefore, only 29% of 31 patients (moderate form) recovered from psoriatic lesions (Refer to Table 3).

Table 3: The number of patients successfully recovered of lesions in each of mild, moderate and severe form of the disease and the percentages in their respective category

Severity of the disease	**Number of patients**	**Follow up (Recovery of Lesions)**	**% of the patients in each category recovered of lesions**
Mild	18	18	100
Moderate	31	9	29
Severe	11	5	45.4

Discussion

Psoriatic arthritis is associated with comorbidities such as osteoporosis, uveitis, subclinical bowel inflammation, and cardiovascular disease. Diagnosis has been particularly difficult because of its heterogeneity[5]. Utilizing the conventional radiographic techniques, the subchondral and periarticular none can be assessed. Substantial lesions in these regions accompanied by inflammation are the erosions. According to their location, they can be grouped into central, marginal, and periarticular. Radiographic examination reveals these erosions during the early onset of the disease. Severe osteopenia is known to be reported in psoriatic arthritis. In the case of PsA, demineralization of the bone structure is established as a poor prognosis[3-5]. For the investigation of subclinical enthesopathy and confirming the diagnosis in symptomatic patients, ultrasonography is a dependable method. It is not only used to assess the musculoskeletal and cutaneous involvement in the disease but also used to monitor and guide the steroid injections at the inflamed points in the joints, tendons[1,3,5].

To differentiate rheumatoid arthritis from psoriatic arthritis through the observation of the synovial inflammation involvement, MRI can be of use. Direct visualization of the peripheral and axial joints enthuses is the major key feature of the MRI. The high sensitivity of the CT plays an important role in observing the erosions of sacroiliac joints similar to MRI[1,3,4]. Clinicians should be aware of both the peripheral and axial manifestations of musculoskeletal diseases in addition to the identification of skin and nail lesions. Peripheral joint diseases include polyarticular, oligoarticular, distal, and arthritis mutilans subtypes, and cognizance of these patterns of disease, as well as periarticular manifestations including dactylitis and enthesitis[5,6]. The clinical range and illness severity in PsA are wide going from mild symptomatology that requires the least treatment to a quickly destructive and disabling course. In any case, notwithstanding the absence of an intensive comprehension of the disease components in PsA, a few methodologies are available to control disease activity[6,7].Damage in PsA can be credited to bone resorption/arrangement that can advance to ankylosis whenever left untreated. Reaction to the treatment is varied, and sometimes even the anti-TNF inhibitor, the best and effective class of therapeutic agents, is associated with 30-40% failure[7]. Treatment of psoriatic arthritis is equivalent to the normal treatment of the singular parts of the diseases like psoriasis, peripheral arthritis, and spondylitis. Nonetheless, antimalarials ought to have stayed away from them as they worsen the rash. Folate antagonists (e.g., methotrexate) might be attempted in serious cases not reacting to customary and less possibly unsafe treatment[2,4,6].

Improving the quality of life accordingly, by incorporating treatment for the musculoskeletal system diseases just as well for the skin and nails is pointed toward controlling inflammation and irritation and forestalling inconvenience, joint damage, and disability. Evaluating for hepatitis should be done in patients before starting methotrexate treatment, and evaluating for dormant tuberculosis ought to be done before beginning organic agents[8]. By the idea of spondyloarthritis, patients with psoriatic arthritis regularly require multispecialty care. Close by rheumatology, the clearest specialty is dermatology at around 80% of the patients with PsA have dynamic skin psoriasis[7,8]. Various focuses now run consolidated facilities where patients can be at the same time inspected by rheumatologists and dermatologists, a methodology that is inclined toward by the patients. PSA can be related to uveitis and inflammatory bowel disease, requiring suitable specialty care. The other key morbidity in PsA is the higher cardiovascular danger altogether added to by the high danger of metabolic condition[8,9]. It is seen that as 40% of PsA patients satisfy the conclusion for metabolic syndrome15 and powerful administration of this is critical to limiting morbidity and mortality[9]. New treatment proposals for PsA were refreshed in 2015 by both the European league against rheumatism and the group for research and assessment of psoriasis and psoriatic arthritis. Both of these suggestions are proof based on both comprehensively recommending a comparable ‘step up’ way to deal with the treatment. This approach utilizes treatments successively beginning with straightforward treatments like non-steroidal anti-inflammatory drugs for pain or topical therapies for psoriasis, followed by DMARDs, then the combination of standard DMARDs, and lastly biological medications assuming patients fail to respond to the past treatments[9,10]. In the beginning, states corticosteroids are utilized to settle the inflammation rapidly, regularly given as intra-articular or intramuscular. The observational proof showed that 41% of joints improved at 90days following utilization of corticosteroids, albeit 33% relapsed quickly. Oral steroids are not recommended as there is a possibility of rebound after the medication is removed[8,9,10]. Nonpharmacological treatment includes exercise, physical therapy, occupational therapy, weight loss while pharmacological treatment involves NSAIDS, biological therapies, and disease-modifying anti-rheumatic drugs[7-10]. Management of psoriatic arthritis is done based on the types of the disease that is if it is peripheral arthritis or it is axial arthritis. In case of peripheral arthritis which is mild in the condition that is, if the patient has disease confines to less than 4 joints with no evidence of radiological damage and with lessened discomfort and functional impairment, initial treatment can be started with NSAIDs(non-steroidal anti-inflammatory drugs) like naproxen, celecoxib, etoricoxib, ibuprofen, diclofenac or ketoprofen[8-10]. In case of

moderate to severe disease where peripheral arthritis remains active or where there is a lack of response to NSAIDs drugs such as methotrexate, leflunomide, and apremilast are used. It is advised that patients taking methotrexate should also be treated with folic acid to avoid adverse effects. Leflunomide is advised for patients' continuous inflammation for 3 months despite being on methotrexate and is not able to tolerate it for its adverse effects [8-11]. Non-responsive patients to the above are given apremilast. It is especially helpful in patients with enthesitis and dactylitis early in the disease. Next is severe peripheral arthritis which is an erosive form with functional limitation or has an inadequate response to conventional non-biological DMARD. In such patients, tumor necrosis factor inhibitor is used such as etanercept, infliximab, adalimumab, golimumab, certolizumab pegol[6,8,10].

In the case of axial disease of psoriatic arthritis, when there is a mild case, NSAIDs are used and in the case of moderate to severe disease biological are used for the treatment and management.[6] Several other drugs are in the initial stages of development and testing in PsA, such as ustekinumab/briakinumab (anti-IL-12/23), ixekinumab/brodalumab (anti-IL-17), anti-IL-15, tofacitinib(anti-JAK3), and tocilizumab (anti-IL-6)[7]. Disease-modifying antirheumatic drugs(DMARDs) include methotrexate, oral and parenteral gold, cyclosporine, leflunomide, azathioprine, and 6-mercaptopurine, antimalarial agents, D-penicillamine, colchicines, retinoids, photochemotherapy, somatostatin, and sulfasalazine[1]. Moderate to severe forms of the disease is treated the same as a mild form of the disease with the addition of DMARDs. Methotrexate should often be carefully monitored for hepatotoxicity. Cyclosporine can also be used in the treatment of PsA in combination with adalimumab. Sulfasalazine is used for pain relief[1-3]. Factors such as increased number of actively inflamed joints, failure to previous medication treatment, increased erythrocyte sedimentation rate or C-reactive protein, clinical or radiographic joint damage, loss of function, and decreased quality of life are those which predicts a poor prognosis for the disease and lead to progressive damage of the joints[6-9]. In the therapy of rheumatoid arthritis, etanercept, a tumor necrosis factor inhibitor has been known to show adequate efficiency. Tumor necrotic factor, a proinflammatory cytokine, is known to be present in abundant concentrations in the skin and the joint in diseases such as psoriatic arthritis and psoriasis[10]. Based on a multi-week study 87% of etanercept treated patients met the PsARC(psoriatic arthritis response criteria) contrasted and 23% of the fake treatment controlled patients. The ARC20 was accomplished by 73% of etanercept treated patients contrasted and 13% of fake treatment treated patients.[10] Of the 19 patients in every treatment bunch who could be surveyed for psoriasis five (26%) of etanercept-treated patients accomplished a 75% improvement in the PASI, contrasted and none of the fake treatment treated patients (p=0.015). the middle PASI improvement was 46% in etanercept treated patients versus 9% in fake treatment treated patients, correspondingly, median target lesion improvements were 50% and 0 respectively[10]. Complete relief of the joint tenderness and swelling may occur in a substantially limited number of treated patients. According to a study, out of 391, 69 achieved remission, and one-half remained free of active joint disease without the further continuation of the medicine[8].

The event of psoriatic arthritis is regularly joined by metabolic and cardiovascular diseases and also depression which is regularly unnoticed or undertreated is when left ignored leads to huge morbidities and even mortalities. PSA inclines patients towards these significant products through various mechanisms and their intricate cooperation, involving persistently overexpressed inflammatory cytokines which poses a risk factor due to the effect of pharmacotherapies[11]. Fitting management of PsA requires early determination, checking of illness activity, and utilizing the state of the art treatments. To achieve the previous there is an assortment of PsA – specific tools accessible to screen, analyze, and evaluate patients. This survey will layout the as of the recently developed PsA screening equipment, including the Toronto psoriatic arthritis screening questionnaire(TOPAS), the psoriasis epidemiology screening tool(PEST), the psoriatic arthritis screening evaluation(PASE), and psoriasis and arthritis screening questionnaire(PASQ)[12]. Orthopedic surgeries are viable options for patients in cases where pharmacological treatment fails. Treatments such as total hip arthroplasty, total knee arthroplasty, the arthroscopic synovectomy of the knee are a few of the surgical options available to the patients for betterment[13]. Early recognition and treatment are probably going to work on the result. For appraisal and treatment, it should be valued that this is a heterogeneous disease best dealt with by a multispecialty and multidisciplinary group [14].

Conclusion

This study has shown that for moderate and severe form of psoriatic arthritis, it is clinically efficient to prescribe DMARDs alone and DMARDs with anti-tumor necrosis factor agent, respectively. In mild cases, cortocosteroids and NSAIDs for pain management can be sufficient. But in case of moderate and severe form of psoriatic arthritis, along with cortocosteroids and NSAIDs, there is need of prescribing DMARDs alone and DMARDs with anti-tumor necrosis factor agent, respectively. Specially, in severe form, combination therapy of DMARDs and anti-tumor necrosis factor agent should be prescribe for better prognosis.

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