IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) | IJRAR.ORG

An International Open Access, Peer-reviewed, Refereed Journal

ADVANCES IN REHABILITATION FOR PSORIATIC ARTHRITIS: A REVIEW

[1] Manpreet kaur, [2] Jagmeet Kaur

[1] BPT Student, [2] Assistant Professor
Department of Physiotherapy,
RIMT University, Mandi Gobindgarh, Punjab

Abstract: Psoriatic arthritis (PsA) is a heterogeneous condition with musculoskeletal involvement manifesting as a variety of symptoms including arthritis, dactylitis, enthesitis and axial involvement. Psoriatic arthritis (PsA) is associated with a higher burden of co-morbidities such as obesity, cardiovascular disease, non-alcoholic fatty liver disease, inflammatory eye disease, inflammatory bowel disease, skin cancer and depression compared to the general population. While genetic and environmental factors may play a role in the development of PsA. Psoriatic arthritis (PsA) is a long-term disease that may lead to psoriatic changes in skin and nails; inflammation of some joints including finger and toe joints (dactylitis); inflammation of sites where tendons and ligaments connect to bone (enthesitis) and problems in the spine (axial involvement). Clinical features of psoriasis differ depending on the psoriasis variant. Psoriasis variants include plaque psoriasis, guttate psoriasis, erythrodermic psoriasis and pustular psoriasis. Magnetic resonance (MRI) and ultrasonography (US) are helpful in the objective reflection of disease activity and conventional radiography (XR) and especially computed tomography (CT) are extremely useful in the detection and monitoring of structural pathological changes. Methotrexate (MTX), sulfasalazine (SSZ) and cyclosporine (CSA) are most widely used for treatment. Kinesiotherapy, manual therapy, thermotherapy, cryotherapy, electrical stimulation and ultrasound are useful in psoriatic arthritis. The aim of study is to demonstrate the effectiveness of medical (e.g., NSAIDS AND DMARDS) and rehabilitation (e.g., physical therapy, occupational therapy and lifestyle modification) in patients with PsA.

IndexTerms - Psoriatic arthritis; Management; Treatment; Physical therapy.

Introduction

Psoriatic arthritis (PsA) is a heterogeneous condition with musculoskeletal involvement manifesting as a variety of symptoms including arthritis, dactylitis, enthesitis and axial involvement. In addition to musculoskeletal symptoms up to 30% of patients have coexisting psoriasis or nail disease (Hackett et al., 2022). Psoriatic arthritis (PsA) is associated with a higher burden of co-morbidities such as obesity, cardiovascular disease, non-alcoholic fatty liver disease, inflammatory eye disease, inflammatory bowel disease, skin cancer and depression compared to the general population. The articular and extra-articular manifestations of PsA usually dictate the treatment choice but important consideration must be given to the corresponding co-morbidities while deciding the drug therapy due to associated safety profile effect on disease activity (Patel et al., 2022). PsA is a complex multifaceted disease with prominent involvement of peripheral diarthrodial joints, axial joints, periarticular structures and the skin and nails (Kavanaugh et al., 2006). Psoriasis is a chronic, non-infectious disease that affects people of all ages. People suffering from psoriasis are more likely to develop cardiovascular disorders, diabetes, metabolic syndrome and depression (Michalek et al., 2017). The name of the disease is derived from Greek word "psora" which means "itch". Psoriasis is a non-contagious, dry, inflammatory and ugly skin disorder which can involve entire system of person. The most commonly affected sites are scalp, tips of fingers and toes, palms, soles, umbilicus, gluteus, under the breasts and genitals, elbows, knees, shins and sacrum (Kuchekar et al., 2011). Individuals with both psoriasis and PsA may experience emotional distress and discomfort caused by skin involvement and pain and physical limitations caused by joint involvement which could synergistically affect their QOL. In addition, patients may have difficulty determining the appropriate provider for diagnosis and management of their PsA and patients may lack understanding regarding their treatment options because most patients will be treated first for the skin lesions associated with psoriasis, dermatologists are in a unique position to screen for and diagnose early PsA (Mease et al., 2014).

In almost 85% of patients, psoriasis will develop before PsA but in 10-20% of patients the symptoms will either appear concomitantly or the symptoms of PsA will precede those of psoriasis (Kaeley et al., 2018). The predominant clinical manifestations of PsA include peripheral arthritis, axial disease, dactylitis and enthesitis, besides the skin and nail psoriasis. In addition to the drug therapy, various non-pharmacological therapeutic interventions like patient education, physical and occupational therapy and interdisciplinary cooperation between the dermatologist, rheumatologist and physical and occupational therapist are very important (Sharma et al., 2010). After the diagnosis of PsA, physiotherapists provide important interventions to improve and recondition musculoskeletal strength, proprioception, range of movement, balance and core-strength training. Some physiotherapists provide complementary therapy such as acupuncture, deep tissue massage and hydrotherapy where the buoyancy, resistance and warmth of the water can provide and permit a different quality of physiotherapy compared with land based methods (Jadon et al., 2022).

ETIOPATHOGENESIS

While genetic and environmental factors may play a role in the development of PsA the immune response to such triggers is what sustains the disease. Inflammation in PsA is thought to be driven both by the Th1 and Th17 pathways (Mantravadi et al., 2017). The first genetic association studies in psoriasis were carried out in 1972 and were focused on the major histocompatibility complex (MHC) region on chromosome 6. Subsequently, human leukocyte antigen C (HLA-C) has been consistently shown to be associated with psoriasis (Hebert et al., 2012). PsA is a complex disease with genetic and environmental risk factors playing a major role in disease susceptibility. The following exposures were recorded: 1) physical trauma that included injuries, fractures and road traffic accidents; 2) infections that required antibiotic treatment and infectious diarrhea; 3) vaccinations to hepatitis A and B, influenza, pneumococcus, rubella and tetanus; 4) emotional stress, including death of a close family member, divorce or separation, moving from house, change of job, becoming unemployed and treatment for anxiety or depression; 5) female hormonal exposures i.e., ages of first and last menstrual periods, use of hormonal contraception and hormone replacement therapy, fertility treatment and pregnancies; 6) occupational exposures; 7) smoking and 8) alcohol consumption. For occupational exposures, recurrent microtrauma that is related to certain occupations may be associated with PsA (Eder et al., 2011). A number of studies and case reports now provide evidence that trauma is an important etiological factor in PsA it is implicated in significantly more cases compared with other forms of arthritis. Furthermore, it is interesting to note that previous motor nerve damage (upper or lower motor neuron) resulting in paralysis may lead to sparing of the paretic limb from developing subsequent psoriasis and PsA (Fearon et al., 2001). Vascular immune mechanisms once triggered the immune process results in the development of the two main features of PsA, the inflammatory infiltrate of T cells and accessory cells into the entheses and synovium and the response of the synovial and entheseal tissues to the products and consequences of the inflammatory infiltrate (FitzGerald et al., 2009).

CLINICAL FEATURES

Clinical features of psoriasis differ depending on the psoriasis variant. Psoriasis variants include plaque psoriasis, guttate psoriasis, erythrodermic psoriasis and pustular psoriasis (Armstrong et.al, 2020). Chronic plaque-type psoriasis is the most common morphologic variety which manifests as circumscribed, well-demarcated, erythematous plaques involving particularly the extensor aspects of elbows and knees, buttocks, scalp and lower back. The character of scaling varies from the typical silvery-white scales to waxy yellow or orange-brown scales (Dogra et al., 2016). Psoriatic arthritis (PsA) is a heterogeneous chronic disease involving the skin and nails and musculoskeletal structures such as entheses, joints, synovial sheaths of tendons and the axial skeleton. Patients can also have eye and gut involvement. In addition, compared with controls, patients with PsA or psoriasis have a significantly higher rate of insulin resistance, type 2 diabetes, obesity, metabolic syndrome, hypertension, hyperlipidemia and cardiovascular disease (Olivieri et al., 2012). Psoriatic arthritis (PsA) is a long-term disease that may lead to psoriatic changes in skin and nails; inflammation of some joints including finger and toe joints (dactylitis); inflammation of sites where tendons and ligaments connect to bone (enthesitis) and problems in the spine (axial involvement). Psoriatic arthritis (PsA) is a chronic immune mediated disease characterized by psoriatic skin and nail changes, peripheral joint inflammation, enthesitis, dactylitis and axial involvement (Merrick et al., 2020).

INVESTIGATIONS

The assessment of these changes is useful for both management and prognosis. In particular, disease activity is a strong determinant for the treatment choices of rheumatologists. Magnetic resonance (MRI) and ultrasonography (US) are helpful in the objective reflection of disease activity. Conventional radiography (XR) and especially computed tomography (CT) are extremely useful in the detection and monitoring of structural pathological changes (Fassio et al., 2020). X-ray images of synovial hypertrophy, tendinitis and tenosynovitis, intra-articular effusions, esthesitis or inflammatory lesions of synovial bursa are very much alike and often difficult to distinguish. In case of inflammatory or traumatic effusion a displacement of articular fat tissue caused by an increasing exudate or synovial hypertrophy can be visualized (Sankowski et al., 2013). However, a complete US examination of all joints, entheses, tendons and bursae that can be affected in PsA would be extremely time consuming and infeasible. Also, there is no current agreement on the optimal number or the specific sites which should be assessed for a sensitive and feasible US assessment (Tang et al., 2020). After each radiological examination, the radiologists made a decision on the diagnosis based on their respective interpretation of the imaging data (Groves et al., 2017).

MEDICAL AND SURGICAL MANAGEMENT

Psoriatic arthritis (PsA) used to be considered a relatively mild nondeforming arthropathy. Methotrexate (MTX), sulfasalazine (SSZ) and cyclosporine (CSA) are the most widely used drugs in the treatment of PsA but only a few well designed and controlled studies have been conducted and the effect of these drugs on axial disease has been evaluated rarely (Salvarani et al., 2001). Despite limited evidence, methotrexate (MTX) is widely used internationally as an initial therapy in the treatment of psoriasis and psoriatic arthritis (PsA). In many healthcare settings, MTX is required to be tried as a first-line therapy prior to access to other therapies with a strong evidence base such as biologics, thus enforcing its use (Coates et al., 2020). Cyclosporine is a synthetic DMARD that acts by inhibiting calcineurin. Inhibition of calcineurin blocks the translocation of the cytosolic component of the nuclear factor of activated T cells (NF-AT) which in turn interferes with the synthesis of inflammatory mediators such as IL-2, IL-4 and C40 ligand that are required for B-cell help and T-cell proliferation (Soriano et al., 2015). Various NSAIDs have been used, including indomethacin, piroxicam, diclofenac, naproxen and tiaprofenic acid. Nimesulide (NIM; 4-nitro-2-phenoxym ethanesul fonanilide) is a weakly acidic NSAID that is effective in numerous inflammatory and pain states and is generally better tolerated than other NSAIDs (Puttini et al., 2001). Non-steroidal anti-inflammatory drugs (NSAIDs), glucocorticoids, opioids and neuromodulators are conventionally used to manage pain and inhibit inflammation in AS, PsA and RA while disease-modifying antirheumatic drugs (DMARDs) slow the progression of the disease by relieving underlying inflammatory responses (Hunter et al., 2021). Systemic glucocorticoid (SGC) treatment can be given for rapid anti-inflammatory effects and to relieve pain. This short-term complementary treatment has also been shown to improve long-term adherence and to improve drug survival in both psoriasis and PsA (Vincken et al., 2022). Surgeries include both joint sacrificing (ankle prosthesis, arthrodesis, hip prosthesis, knee prosthesis, shoulder prosthesis and spine prosthesis) and non-joint sacrificing procedures (arthroscopic synovectomy, carpal tunnel syndrome (CTS), diagnostic arthroscopy, discectomy, meniscus surgery and others). Less common include surgeries of feet, hand, spine, knee, wrist, shoulder, elbow and cheeks (Haque et al., 2016). Orthopedic surgery has been a necessary part of treating patients with PsA when medication fails to

prevent inflammation and joint destruction. Surgery can thus be considered a proxy for the degree of inflammatory activity (Nystad et al., 2018).

PHYSIOTHERAPY MANAGEMENT

Kinesiotherapy, manual therapy, thermotherapy, cryotherapy, electrical stimulation and ultrasound are useful in management of psoriatic arthritis (Wollina et al., 2010). For palmoplantar pustulosis, acitretin and oral PUVA appear to result in improvement with combination of the two providing superior response (Ritchlin et al., 2009). Hydrotherapy is also beneficial in psoriatic arthritis it improves physical function, ability to work, energy, sleep, cognitive function and participation in the activities of daily living (Dhake et al., 2022). Hydrotherapy is defined as supervised structured exercises of specific extremities and joints in warm water. The effects of temperature and pressure on nerve endings leads to muscle relaxation, relieving of pain which may facilitate mobilizing and strengthening of affected joints and muscles (Lindqvist et al., 2013). It has been demonstrated that moulds are helpful in the treatment of PA while sulfur waters have been shown to be effective in psoriasis and psoriatic arthritis only in combination with UV-B light. Such selective ultraviolet phototherapy is also used in other dermatologic disorders in combination with baths achieving a lowering of the erythema threshold (Fabiani et al., 1996). High-intensity laser therapy (HILT) may effectively alleviate pain, inflammation, joint tenderness and swelling because of its photomechanical and thermos dynamic effects. HILT may be beneficial for treating psoriatic hand arthritis (PsHA) due to its inflammatory, anti-edematous, analgesic and healing properties (Abdelhamid et al., 2025). Patient's health, including general cardiovascular conditioning, strengthening exercises, improvement of articular motion and education. Thermotherapy which includes cryotherapy and heat may be used to treat joint pain and to reduce swelling and tenderness in inflamed joints (Kavuncu et al., 2004).

Patients can be offered different types of exercises such as aerobic, endurance and strength training. For example, in both patients with axial and peripheral forms general exercise, increasing strength and flexibility, cardiorespiratory exercises as well as group activities, balneotherapy and hydrotherapy will be effective and in the axial form, in addition postural exercises (Mikołajczak., 2025). The beneficial effect of physical fitness (PF) and physical activity (PA) on cardiometabolic and general health in the general population is largely known. It consists of a set of measurable health and skill-related attributes including cardiorespiratory fitness (CRF), muscular strength and endurance, body composition and flexibility, balance, agility, reaction time and power (Kaerts et al., 2025).

CONCLUSION

PsA is a complex disease that affects multiple areas, including peripheral joints, axial joints, periarticular structures, skin and nails. Characteristics of PsA are joint pain, stiffness and swelling, skin psoriasis (scaly, red patches), nail changes, eye inflammation and other systemic symptoms. Early detection enables timely treatment and better management of the condition. The goals of treatment in PsA are to manage symptoms, slow disease progression and improve quality of life. Research shows that exercises like aerobics and cardiorespiratory exercises can be beneficial. Other treatments like low-level laser therapy and hydrotherapy may also help. However, there's limited research on physiotherapy for PsA, so more studies are needed. More studies are required to explore the benefits of physiotherapy for PsA including hydrotherapy, other physiotherapy modalities (e.g., IFT, manual therapy) and exercise programs tailored to PsA needs.

REFERENCES

1. Hackett, S., Ogdie, A., & Coates, L. C. (2022). Psoriatic arthritis: prospects for the future. Therapeutic advances in musculoskeletal disease, 14, 1759720X221086710.
2. Patel, S., & Kumthekar, A. (2022). Psoriatic arthritis: the influence of co-morbidities on drug choice. Rheumatology and Therapy, 9(1), 49-71.
3. Kavanaugh, A. F., Ritchlin, C. T., & GRAPPA Treatment Guideline Committee. (2006). Systematic review of treatments for psoriatic arthritis: an evidence based approach and basis for treatment guidelines. The Journal of rheumatology, 33(7), 1417-1421
4. Michalek, I. M., Loring, B., & John, S. M. (2017). A systematic review of worldwide epidemiology of psoriasis. Journal of the European Academy of Dermatology and Venereology, 31(2), 205-212.
5. Kuchekar, A. B., Pujari, R. R., Kuchekar, S. B., Dhole, S. N., Mule, P. M., Vidyapeeth, B., & Wadi, B. (2011). Psoriasis: A comprehensive review. Int J Pharm Life Sci, 2(6), 857-77. 10.
6. Mease, P. J., & Armstrong, A. W. (2014). Managing patients with psoriatic disease: the diagnosis and pharmacologic treatment of psoriatic arthritis in patients with psoriasis. Drugs, 74, 423-441. Sharma, A., & Dogra, S. (2010). Management of psoriatic arthritis. Indian Journal of Dermatology, Venereology and Leprology, 76, 645.
7. Kaeley, G. S., Eder, L., Aydin, S. Z., Gutierrez, M., & Bakewell, C. (2018, August). Enthesitis: a hallmark of psoriatic arthritis. In Seminars in arthritis and rheumatism (Vol. 48, No. 1, pp. 35-43). WB Saunders.
8. Sharma, A., & Dogra, S. (2010). Management of psoriatic arthritis. Indian journal of dermatology, venereology and leprology, 76(6), 645–651.
9. Jadon, D. R., & Helliwell, P. S. (2022). The role of the multidisciplinary team in the management of psoriatic arthritis. Musculoskeletal care, 20 , S32–S40.
10. Mantravadi, S., Ogdie, A., & Kraft, W. K. (2017). Tumor necrosis factor inhibitors in psoriatic arthritis. Expert review of clinical pharmacology, 10(8), 899-910.
11. Hébert, H. L., Ali, F. R., Bowes, J., Griffiths, C. E., Barton, A., & Warren, R. B. (2012). Genetic susceptibility to psoriasis and psoriatic arthritis: implications for therapy. The British journal of dermatology, 166(3), 474–482.
12. Eder, L., Law, T., Chandran, V., Shanmugarajah, S., Shen, H., Rosen, C. F., Cook, R. J., & Gladman, D. D. (2011). Association between environmental factors and onset of psoriatic arthritis in patients with psoriasis. Arthritis care & research, 63(8), 1091–1097.
13. Fearon, U., & Veale, D. J. (2001). Pathogenesis of psoriatic arthritis. Clinical and experimental dermatology, 26(4), 333-337.
14. FitzGerald, O., & Winchester, R. (2009). Psoriatic arthritis: from pathogenesis to therapy. Arthritis research & therapy, 11, 1-9.

15. Armstrong, A. W., & Read, C. (2020). Pathophysiology, Clinical Presentation, and Treatment of Psoriasis: A Review. JAMA, 323(19), 1945–1960.
16. Dogra S, Mahajan R. (2016). Psoriasis: Epidemiology, clinical features, co-morbidities, and clinical scoring. Indian Dermatology Online Journal - November-December - Volume 7 - Issue 6.
17. Olivieri, I., D'ANGELO, S. A. L. V. A. T. O. R. E., Palazzi, C., Padula, A., Lubrano, E., & Mantovani, L. G. (2012). Pharmacoeconomic issues in psoriatic arthritis. The Journal of Rheumatology Supplement, 89, 103-105.
18. Merrick LLG, Lydon EJ, Mixon AM, Saalfeld W. (2020). Evaluating Inflammatory Versus Mechanical Back Pain in Individuals with Psoriatic Arthritis: A Review of the Literature Rheumatol Ther, 7:667–684
19. Fassio, A., Matzneller, P., & Idolazzi, L. (2020). Recent advances in imaging for diagnosis, monitoring, and prognosis of psoriatic arthritis. Frontiers in Medicine, 7, 551684.
20. Sankowski, A. J., Łebkowska, U. M., Ćwikła, J., Walecka, I., & Walecki, J. (2013). Psoriatic arthritis. Polish journal of radiology, 78(1), 7.
21. Tang, Y., Cheng, S., Yang, Y., Xiang, X., Wang, L., Zhang, L., & Qiu, L. (2020). Ultrasound assessment in psoriatic arthritis (PsA) and psoriasis vulgaris (non-PsA): which sites are most commonly involved and what features are more important in PsA?. Quantitative imaging in medicine and surgery, 10(1), 86.
22. Groves, C., Chandramohan, M., Chew, N. S., Aslam, T., & Helliwell, P. S. (2017). Clinical Examination, Ultrasound and MRI Imaging of The Painful Elbow in Psoriatic Arthritis and Rheumatoid Arthritis: Which is Better, Ultrasound or MR, for Imaging Enthesitis? Rheumatology and therapy, 4(1), 71–84.
23. Salvarani, C., Macchioni, P., Olivieri, I., Marchesoni, A., Cutolo, M., Ferraccioli, G., Cantini, F., Salaffi, F., Padula, A., Lovino, C., Dovigo, L., Bordin, G., Davoli, C., Pasero, G., & Alberighi, O. D. (2001). A comparison of cyclosporine, sulfasalazine, and symptomatic therapy in the treatment of psoriatic arthritis. The Journal of rheumatology, 28(10), 2274–2282.
24. Coates, L. C., Merola, J. F., Grieb, S. M., Mease, P. J., & Duffin, K. C. (2020). Methotrexate in psoriasis and psoriatic arthritis. The Journal of Rheumatology Supplement, 96, 31-35.
25. Soriano, A., Pipitone, N., & Salvarani, C. (2015). Cyclosporine in psoriatic arthropathy. Clin Exp Rheumatol, 33(Suppl 93), S101-103.
26. Sarzi-Puttini, P., Santandrea, S., Boccassini, L., Panni, B., & Caruso, I. (2001). The role of NSAIDs in psoriatic arthritis: evidence from a controlled study with nimesulide. Clinical and experimental rheumatology, 19(1; SUPP 22), S-17.
27. Hunter, T., Nguyen, C., Birt, J., Smith, J., Shan, M., Tan, H., ... & Isenberg, K. (2021). Pain medication and corticosteroid use in ankylosing spondylitis, psoriatic arthritis, and rheumatoid arthritis in the United States: a retrospective observational study. Rheumatology and therapy, 8, 1371-1382.
28. Vincken, N. L., Balak, D. M., Knulst, A. C., Welsing, P. M., & van Laar, J. M. (2022). Systemic glucocorticoid use and the occurrence of flares in psoriatic arthritis and psoriasis: a systematic review. Rheumatology, 61(11), 4232-4244.
29. Haque, N., Lories, R. J., & de Vlam, K. (2016). Orthopaedic interventions in patients with psoriatic arthritis: a descriptive report from the SPAR cohort. RMD open, 2(2), e
30. Nystad, T. W., Husum, Y. S., Furnes, O. N., & Fevang, B. S. (2018). Incidence and Predictive Factors for Orthopedic Surgery in Patients with Psoriatic Arthritis. The Journal of rheumatology, 45(11), 1532–1540.
31. Wollina, U., Unger, L., Heinig, B., & Kittner, T. (2010). Psoriatic arthritis. Dermatologic therapy, 23(2), 123-136.
32. Ritchlin, C. T., Kavanaugh, A., Gladman, D. D., Mease, P. J., Helliwell, P., Boehncke, W. H., ... & Taylor, W. J. (2009). Treatment recommendations for psoriatic arthritis. Annals of the rheumatic diseases, 68(9), 1387-1394.
33. Dhake P, Shinde SB. Physiotherapy in Psoriatic Arthritis: A Systematic Review. D Y Patil J Health Sci 2022; 10:27-32.
34. Lindqvist, M. H., & Gard, G. E. (2013). Hydrotherapy treatment for patients with psoriatic arthritis—a qualitative study. Open Journal of Therapy and Rehabilitation, 1(2), 22-30.
35. Fabiani, D., Partsch, G., Casale, R., & Cerinic, M. M. (1996). Rheumatologic aspects of mineral water. Clinics in dermatology, 14(6), 571-575.
36. Abdelhamid, M. S. H., Borhan, W. H., Elkeblawy, M. M., Omar, A. M., & Abd Elhameed, M. M. (2025). Efficacy of Pulsed High Intensity Laser Therapy in Treatment of Psoriatic Hand Arthritis. Cuestiones de Fisioterapia, 54(4), 4913-4921.
37. Kavuncu V, Evcik D. Physiotherapy in rheumatoid arthritis. MedGenMed. (2004) May 17;6(2):3. PMID: 15266230; PMCID: PMC1395797.
38. Mikołajczak, K. (2025). The Role of Physical Activity in the Therapy of Psoriatic Arthritis-Review. Quality in Sport, 40, 59823-59823.
39. Kaerts, M., Swinnen, T. W., Dankaerts, W., de Vlam, K., & Barbara, N. (2025). Physical fitness and physical activity in psoriatic arthritis: a systematic review. Rheumatology Advances in Practice, rkaf066.