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A multidisciplinary team for the diagnosis and management of psoriatic arthritis

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Psoriatic arthritis (PsA) is a special subtype of psoriasis, which severely influences the quality of life of the affected people. Clinical manifestations of PsA are diverse. In addition to skin lesions, PsA patients often have musculoskeletal symptoms, nail changes, and ophthalmological features that simultaneously or successively occur with the skin lesions.[1] Therefore, the diagnosis and treatment of PsA are challenging because of its various symptoms. In recent years, multidisciplinary management of PsA is gradually being valued, because early screening, diagnosis, and treatment can effectively control signs and symptoms of PsA, improve patients' quality of life, and slow down the disease progression to a larger extent.[1]

Symptoms of PsA include dermatological and rheumatological manifestations, and as a result, PsA treatment needs the cooperation of both rheumatologists and dermatologists. Dermatologists should be equipped with abundant clinical experiences of the early manifestations of PsA and thus make timely referrals if necessary. At the same time, rheumatologists are also responsible for reducing the impact of skin manifestations of PsA on the quality of life. At present, multidisciplinary management of PsA includes combined rheumatology-dermatology (R-D) clinics and virtual clinics. Notably, telemedicine is of great significance in the multidisciplinary management of psoriasis, especially in the current situation of COVID-19 epidemic.[2]

Nowadays, the advantages of multidisciplinary treatment have become increasingly remarkable. PsA patients used to request for the treatment in the dermatology and rheumatology departments separately, and as a result, a coordination between specialists from each department and a thorough communication taking into consideration of multidisciplinary care is lacking, leading to a suboptimal care.[3] Since most skin lesions are developed before arthritis, dermatologists play a more critical role in the early diagnosis and initial treatment of PsA patients. An early or adequate referral to a rheumatologist is the key to prevent late catastrophic consequences of PsA.

The cognitive gap on the risk of musculoskeletal lesions in patients with psoriasis and non-rheumatologists is one of the biggest challenges in the pre-diagnosis phase of PsA. In the diagnosis and referral phase, whether patients with psoriasis should be referred to the rheumatology department or not, determined by dermatologists, is unclear, because a recognized recommendation for referral of PsA patients is lacking. As a consequence, a certain number of PsA patients cannot be diagnosed in time. The diagnosis of PsA is a huge challenge even for rheumatologists, especially in patients with psoriasis combined with osteoarthritis or gout.[4]

During the process of the diagnosis and treatment of PsA, detailed medical history and physical examinations are of great significance. Moreover, clinicians should make full use of screening questionnaires, laboratory tests, and diagnostic imaging. Also, people with relevant skin symptoms and signs of PsA should ask for the treatment at the rheumatology department in time as well.

Currently, many screening tools have been developed and validated for their early diagnostic efficacy on PsA and thus improve the prognosis, such as PsA screening evaluation (PASE), psoriasis epidemiology screening tool (PEST), psoriatic arthritis screening questionnaire, and so on. However, the sensitivity and specificity of current screening methods of PsA remain relatively low.[2] Dermatology and rheumatology departments in China have begun to jointly participate in the online cooperation, aiming to find suitable screening tools for the early diagnosis of PsA. Early arthritis for psoriatic patients (EARP) is a simple and user-friendly screening tool, which

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is more sensitive than that of PASE and PEST. The validity of EARP has been verified in Italy, Spain, and Japan. Moreover, the Australian, Korean, and Chinese versions of EARP are also suitable for early detection of PsA symptoms.[5]

Specific and effective biomarkers contribute to assist the diagnosis of PsA. Plasma levels of erythrocyte sedimentation rate and C-reactive protein (CRP) are usually abnormally expressed in PsA patients, and they are the most common blood indexes detected in clinical practice. In addition, rheumatoid factor (RF) and anti-CCP antibody of PsA patients are usually seronegative. RF negativity is one of the Classification of Psoriatic Arthritis (CASPAR) criteria for diagnosing PsA, but there are also 5% to 20% of PsA patients with positive RF. Therefore, RF seropositivity in patients with characteristic manifestations of PsA cannot directly rule out the diagnosis of PsA.[2] Experts suggested that before referring patients to rheumatologists for faster diagnosis, dermatologists need to test the following blood biomarkers: RF, CRP, and human leukocyte antigen B27 in patients with axial pain.[2] In recent years, the successful application of interleukin-17 (IL-17) antagonists in PsA treatment suggested that IL-17 may be one of the effective biomarkers of PsA.[2] It is reported that serum chemokine C-X-C ligand 10 (CXCL10) level significantly increases in psoriasis patients who have progressed to PsA and its level in the synovial fluid of PsA patients elevates 44.3 times compared with that of gout patients.[6] Therefore, CXCL10 may be a potential diagnostic marker for PsA.

In general, X-ray examination alone is not sufficient for detecting the signs of enthesitis and articular disease in early PsA. Ultrasound or magnetic resonance imaging (MRI) is more sensitive for the detection of early PsA than that of X-ray. In particular, ultrasound is a useful tool to detect early lesions, especially synovitis and enthesitis. Also, by detecting enthesitis and extracapsular inflammation, MRI can discriminate among PsA, rheumatoid arthritis, and osteoarthritis.[1,2]

Because most of PsA patients develop skin lesions before joint diseases, screening for joint involvement is the top priority for dermatologists in the management of psoriatic diseases.[1] Dermatologists are supposed to diagnose signs or symptoms of PsA actively at least once a year, preferably every 6 months by asking patients about joint pain, stiffness, swelling, and fatigue.[2] The following specific conditions of joint pain and stiffness should be highlighted, including the time of onset, duration, and relationship with exercise. In general, patients with psoriasis should be referred to a rheumatologist when the joint symptoms cannot be relieved by disease-modifying antirheumatic drugs (DMARDs) therapy. Before referral, non-steroidal anti-inflammatory drugs (NSAIDs) can be prescribed by dermatologists to relieve joint pain.[1]

According to the recommendations in 2020,[2] patients with psoriasis and suspected PsA with at least one of the following signs and symptoms should be referred to the rheumatology department: inflammatory axial pain (including night pain), inflammatory peripheral pain or swelling, enthesitis or signs of enthesitis (especially in the Achilles tendon and plantar fascia), and dactylitis or signs of dactylitis. In addition, ultrasound is a useful tool for identifying musculoskeletal signs of PsA. MRI is also recommended for identifying patients with axial PsA manifestations.

PsA is a complicated disease that requires multidisciplinary care involving dermatologists, rheumatologists, and gastroenterologists. In addition, comorbidities of PsA are also needed to be considered as they largely affect the choice of treatment. NSAIDs and other conservative strategies are usually applied to PsA patients with mild clinical manifestations, although a great number of patients are not well responded. Anti-rheumatic drugs (DMARDs), alongside biological treatments, such as TNF inhibitors (TNFi), IL-17 inhibitors, IL-23/12 inhibitors, and novel targeted small molecule oral agents, including phosphodiesterase-4 inhibitors and Janus kinase (JAK)/signal transducer and activator of transcription (STAT) inhibitors, have shown good efficacies on PsA in recent years.[1] Medications of TNFi and systemic glucocorticoids in PsA patients can lead to cutaneous complications. Rheumatologists should consult with a dermatologist to minimize flares and provide optimal management.[1]

Currently, there are many dermatology-rheumatology joint organizations throughout the world. The Psoriasis and Psoriatic Arthritis Clinics Multicenter Advancement Network is a group composed of dermatologists and rheumatologists that focuses on establishing novel polyclinics or optimizing existing ones.[4] It is shown that the multidisciplinary model can improve the quality of care by raising awareness of psoriatic disease, promoting educational activities for both physicians and patients, and comprehensively evaluating and managing patients through improved interdisciplinary communications.

A 5-year retrospective study conducted by the Interdisciplinary Rheumatology-Dermatology (R-D) Clinic at Massachusetts General Hospital in the United States showed that the interdisciplinary clinic is a successful mode providing a more comprehensive evaluation and better drug use.[7] In addition to a better health management of patients with complex connective tissue diseases, the collaboration between dermatologists and rheumatologists is beneficial to patients by comprehensively identifying skin and joint lesions through performing more complete examinations. A retrospective study conducted at the Center for Skin and Related Musculoskeletal Diseases (SARM) at Brigham and Women's Hospital in Boston, USA suggested that systemic drugs and biological agents are more likely prescribed after the assessment of SARM.[1] Multidisciplinary care may help to facilitate the diagnosis of joint diseases and provide more comprehensive treatments for patients with both psoriasis and PsA. A 2-year study in an Italian R-D clinic demonstrated that using specific working procedures and treatment flowcharts through the close cooperation of dermatologists and rheumatologists can yield a significant therapeutic efficacy on PsA as well as the improvement of health-related quality of life.[8]

With the development of the multidisciplinary management, it has been proven to improve the diagnosis and treatment of PsA because of the faster, earlier, more accurate diagnosis, and better therapeutic results. For physicians, strengthening interdisciplinary cooperation can increase opportunities for continuing education and satisfaction of practitioner.[1] However, challenges are inevitable. First, dermatologists, rheumatologists, and radiologists need a closer collaboration, because imaging examinations (eg, ultrasound, MRI) provide accurate information for the early diagnosis and treatment evaluation of PsA. In China, patients usually ask for medical help of joint pain in the departments of orthopedics, pain, rehabilitation, and traditional Chinese medicine. A closer coordination with these specialties is a considerable challenge. Second, the assessment of rheumatism and skin diseases is time-consuming and requires clinical experiences of specialists in relevant departments. Generally, a dermatologist provides an out-patient care for 15 to 20 patients half a day, while a rheumatologist only treats 6 to 8 patients on average. A highly effective arrangement of out-patient time involving both dermatologists and rheumatologists is quite difficult.[3] Third, multidisciplinary R-D clinics usually open once a month to once a week in European and American countries. Thus, coordinating the schedules between patients and multidisciplinary R-D clinics that ensures the rational use of medical resources is also a major challenge.[1,3] Furthermore, high medical cost remains an issue that hinders these combined clinics.[3]

In conclusion, considering the comorbidities of PsA and the need for long-term treatment, multidisciplinary management may be the most effective treatment for PsA. Interdisciplinary management by dermatologists, rheumatologists, and other specialists, including psychiatrists, general practitioners, cardiologists, and pain specialists significantly contributes to prevent irreversible joint damage of PsA and high mortality risks of comorbidities. Multidisciplinary management can also improve the satisfaction of PsA patients, reduce the number of repeated inspections, and save medical care resources.

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Conflicts of interest

None.

References

1. Baum EW, Schwartzman S. ALIGN PsA: advancing a multidisciplinary approach in PsA. Semin Cutan Med Surg 2018;37:S125–S134. doi: 10.12788/j.sder.2018.057.
2. Belinchón I, Salgado-Boquete L, López-Ferrer A, Ferran M, Coto-Segura P, Rivera R, *et al*. Dermatologists' role in the early diagnosis of psoriatic arthritis: expert recommendations. Actas Dermosifiliogr 2020;111:835–846. doi: 10.1016/j.adengl.2020.10.025.
3. Soleymani T, Reddy SM, Cohen JM, Neimann AL. Early recognition and treatment heralds optimal outcomes: the benefits of combined rheumatology–dermatology clinics and integrative care of psoriasis and psoriatic arthritis patients. Curr Rheumatol Rep 2017;20:1. doi: 10.1007/s11926-017-0706-0.
4. Haberman R, Perez-Chada LM, Merola JF, Scher J, Ogdie A, Reddy SM. Bridging the gaps in the care of psoriasis and psoriatic arthritis: the role of combined clinics. Curr Rheumatol Rep 2018;20:76. doi: 10.1007/s11926-018-0785-6.
5. Jo SJ, Foley P, Oakley SP, Zhang J, Zheng M, Shin K, *et al*. Initial assessment of the early arthritis for psoriatic patients diagnostic questionnaire in dermatology clinics in Australia, Korea and China. Int J Rheum Dis 2019;22:1512–1520. doi: 10.1111/1756-185X.13604.
6. Abji F, Pollock RA, Liang K, Chandran V, Gladman DD. Brief report: CXCL10 is a possible biomarker for the development of psoriatic arthritis among patients with psoriasis. Arthritis Rheumatol 2016;68:2911–2916. doi: 10.1002/art.39800.
7. Argobi Y, Smith GP. Analysis of the first 5 years of an interdisciplinary rheumatology–dermatology clinic. Clin Exp Dermatol 2021;46:270–275. doi: 10.1111/ced.14390.
8. Luchetti MM, Benfaremo D, Campanati A, Molinelli E, Ciferri M, Cataldi S, *et al*. Clinical outcomes and feasibility of the multidisciplinary management of patients with psoriatic arthritis: two-year clinical experience of a dermo-rheumatologic clinic. Clin Rheumatol 2018;37:2741–2749. doi: 10.1007/s10067-018-4238-4.

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