Consensus statements for evaluation and nonpharmacological Management of Psoriatic Arthritis in UAE

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Abstract
Objective: Psoriatic arthritis (PsA), a chronic inflammatory arthropathy, is often underdiagnosed in Middle Eastern countries, substantially impacting the treatment of affected individuals. This article aims to highlight current unmet clinical needs and provide consensus recommendations for region-specific evaluation methods and nonpharmacological therapies in the United Arab Emirates (UAE).

Method: An extensive literature review was conducted, focusing especially on global and regional guidelines for the evaluation and treatment of PsA. These form the basis of the consensus statements formulated. Additionally, an expert panel of key opinion leaders from the UAE reviewed these guidelines and available literature at an advisory board meeting to identify unmet needs, bridge clinical gaps in the UAE, and develop consensus statements for the evaluation and treatment of PsA.

Result: The consensus statements were developed based on overarching principles for the management of PsA, evaluation of patients with PsA, and nonpharmacological approaches for the management of PsA. The overarching principles included adopting a targeted, multidisciplinary approach, along with collaboration between rheumatologists and dermatologists in cases of clinically significant skin involvement. The panel also highlighted the value of composite disease severity measures for characterizing clinical manifestations of PsA. In terms of nonpharmacological management approaches, lifestyle modification (comprising dietary change, exercise, and cessation of smoking) and psychotherapy were recommended.

Conclusion: The consensus statements will aid healthcare professionals in clinical decision-making in the context of PsA.

KEYWORDS
assessment tools, guidelines, nonpharmacological approach, overarching principles, psoriatic arthritis, severity
1 | INTRODUCTION

Psoriatic arthritis (PsA), an autoimmune disorder characterized by chronic inflammation of the skin and joints, affects approximately 2%-3% of the general population. The global prevalence of PsA varies by geographic region and ranges from 0.001% to 0.42%, whereas the prevalence of PsA is 0.01%-0.3% in Middle Eastern countries. Evidence of nail dystrophy, scalp lesions, intragluteal and/or perianal lesions, involvement of three or more sites, male sex, and family history of PsA are risk factors for the development of PsA in patients with psoriasis. Approximately 20% of patients diagnosed with PsA may develop a more aggressive form of arthritis, resulting in joint damage. Studies have shown that in many patients, PsA may progress to erosive disease in as little as 2 years after onset.

Beyond musculoskeletal and skin manifestations, PsA is associated with comorbidities that contribute to the disease burden substantially. The most frequently associated comorbidities include cardiovascular disease, obesity, type 2 diabetes mellitus, metabolic syndrome, hyperlipidemia, hypertension, nonalcoholic fatty liver disease, hyperuricemia, gout, Crohn disease, and depression. Studies have reported that more than 50% of patients diagnosed with PsA are affected by at least one comorbidity. Comorbidities impact disease activity, physical functioning, and the quality of life of patients with PsA and, therefore, are an important consideration in treatment decision-making.

A key aspect of PsA treatment is understanding the classification criteria and outcome measures used to assess disease activity. Psoriatic arthritis is different from other forms of chronic inflammatory arthritis in terms of its complex clinical presentation. Therefore, it is important for clinicians and rheumatologists to use appropriate classification criteria in clinical practice to optimize care for patients with PsA. Currently, CIASSification criteria for Psoriatic Arthritis (CASPAR) are widely used for recruitment in randomized clinical trials and longitudinal observational studies, and are validated in primary healthcare settings. However, the criteria require the healthcare practitioner to differentiate inflammatory arthritis from other nonspecific aches and pains in tendons and joints, which would pose a challenge for practitioners other than rheumatologists. For this reason, classification criteria that can better define the inflammatory musculoskeletal disease component are required. Furthermore, there are several validated outcome measures defining low, medium, and high disease activity. However, there is no consensus on the use of any specific outcome measure to assess disease activity and evaluate treatment response in patients with PsA.

Therapeutic decisions in PsA are guided by a patient-centric approach in collaboration with dermatologists, primarily aimed at addressing disease activity, comorbidities, structural damage, and patient-reported outcomes. Considering the heterogeneity in the clinical manifestations of PsA, it is important to ensure standardized treatment practices to assist practising physicians; rheumatologists, and dermatologists. Dermatologists and rheumatologists should collaborate and coordinate their efforts to achieve optimal care for patients with PsA. Treatment recommendations developed by members of the European League Against Rheumatism (EULAR) and the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) have been widely adopted in clinical practice.

Apart from pharmacological therapies, nonpharmacological approaches such as lifestyle modification—including overcoming obesity, smoking cessation, reduction in alcohol intake, and low-impact physical exercises—are beneficial in the context of PsA. The objectives of this article are to address the gaps in clinical practice recommendations for the assessment of PsA severity and nonpharmacological therapeutic approaches for the treatment of PsA to assist practising physicians in the United Arab Emirates (UAE).

2 | MATERIALS AND METHODS

Six experts from the Emirates Society for Rheumatology representing different healthcare sectors of the UAE set up advisory board meetings to develop the consensus guidelines. The panel reviewed international and regional guidelines to determine clinical gaps in the evaluation of patients with PsA, as well as nonpharmacological approaches for the management of PsA. This would facilitate the development of consensus statements positioned around the identified gaps for the UAE.

2.1 | Targeted literature review

An extensive literature review was conducted considering unmet needs in clinical practice in the UAE. The current international and regional guidelines were reviewed by the panel of experts, and comparisons were made with the American College of Rheumatology/National Psoriasis Foundation Guideline (ACR/NPF) for the Treatment of Psoriatic Arthritis 2018, EULAR 2019, GRAPPA 2015, and the 2014 Saudi Practical Guidelines on the Biologic Treatment of Psoriasis.

Based on a review of international and regional guidelines, consensus statements were developed for the following categories—overarching principles, evaluation of patients with PsA, and management of PsA using nonpharmacological approaches. Additionally, overarching principles from the GRAPPA 2020 treatment recommendations were adapted based on regional and cultural specifications for the UAE. Key findings from the review were presented to the advisory board as statements from the expert panel. The prime objectives were:

1. To review similarities/differences between various international and regional guidelines for PsA treatment.
2. To identify and discuss gaps and unmet needs in current clinical practice for the evaluation and nonpharmacological management of PsA in the UAE.
The consensus statements were generated following the first advisory board meeting; the statements were authenticated and confirmed during the second advisory board meeting. The final statements formulated were then approved by all the members of the panel and put forth as recommendations.

The consensus statements have been presented in two separate parts. The present article, which is the first part, focuses on overarching principles, evaluation of PsA, and nonpharmacological treatment options for PsA. The second part covers consensus statements related to the pharmacological management of PsA (dosing and administration recommendations, treatment recommendations for PsA domains, and consensus statements on efficacy and safety profiles of nonbiological and biological therapies), monitoring requirements for therapies, and management of comorbidities.

3 | RESULTS

3.1 | Overarching principles

Based on current international guidelines, the following principles have been proposed for the management of PsA:

1. For the treatment of PsA, clinicians should adapt to both the treat-to-target and multidisciplinary approaches.

2. In patients with active PsA, using the treat-to-target strategy is recommended, where treatment should be aimed at reaching the target of remission or, alternatively, low disease activity, by regular assessment of disease activity and appropriate adjustment of therapy.

3. Rheumatologists should primarily care for the musculoskeletal manifestations of patients with PsA.

4. In the presence of clinically significant skin involvement, a rheumatologist and a dermatologist should collaborate in the diagnosis and management.

5. Treatment should aim to offer the best care and must be based on shared decision-making between the patient and rheumatologist, considering disease factors (activity, previous treatment, structural damage, comorbidities), treatment factors (safety and efficacy), and patient factors (access and preference).

3.2 | Evaluation of patients with psoriatic arthritis

The 2009 GRAPPA recommendations state that patients can be stratified into “mild,” “moderate,” and “severe” categories for each of the clinical manifestations of PsA (peripheral arthritis, skin disease, spinal disease, enthesitis, and dactylitis). However, it was understood that patients may present with different levels of disease activity and clinical manifestations, and therefore, the 2015 updated GRAPPA statements removed these rigid categorizations and designed treatment approaches based on the disease activity, prognostic factors, comorbidities, and local access to therapies for the individual domains of PsA, namely peripheral arthritis, axial disease, enthesitis, dactylitis, skin psoriasis, psoriatic nail disease, uveitis, and inflammatory bowel disease.

The expert panel acknowledged the value of composite disease severity measures for characterizing the clinical manifestations of PsA. The Psoriatic Arthritis Disease Activity Score (PASDAS) is a widely adopted weighted index measure that incorporates evaluator and patient assessments of visual analogue scale (VAS) scores, tender and swollen joint counts, dactylitis, enthesitis, health-related quality of life, and C-reactive protein levels. The Disease Activity for Psoriatic Arthritis (DAPSA) is a composite activity measure adapted from the disease activity index for the assessment of reactive arthritis (DAREA). The DAPSA has been clinically validated and performs well on arthritis domains, but was found to be less powerful than the Composite Psoriatic Disease Activity Index (CPDAI) for the other clinical domains of PsA. The CPDAI is a composite measure that includes assessments for six domains of PsA: peripheral arthritis, functional disability, skin, dactylitis, enthesitis, and spinal manifestations. Unlike DAPSA, the CPDAI composite measure evaluates the extent of disease activity, as well as the effect of a particular domain on physical function and health-related quality of life, which includes the mental, emotional, and social functioning domains. Overall, the PASDAS has been shown to perform better than the DAPSA and CPDAI measures, specifically for estimating high and low disease activity. The expert panel urges that the PASDAS scoring assessment should be performed by a trained healthcare professional (trained nurse or rheumatology fellow), because rheumatologists do not routinely use this instrument.

For assessment of peripheral joint involvement, the Psoriatic Arthritis Response Criteria (PsARC) is an easy instrument that can be used in clinical practice. The PsARC evaluates tender and swollen joint scores, and physician’s and patient’s global assessment of disease activity. The PsARC was able to distinguish between outcomes in the treated and placebo groups in several trials. PsARC is no longer part of the Outcome Measures in Rheumatology Clinical Trials core domain set, but some insurance companies in the UAE mandate it for approval of immunosuppressive therapy.

The Minimal Disease Activity (MDA) scoring instrument is a clinically validated, reliable indicator of the state of disease activity at a given point. The MDA aids in the assessment of the treatment target. The MDA consists of seven outcome measures, including evaluation of tender joints, swollen joints, Psoriasis Area and Severity Index (PASI) or body surface area (BSA) patient pain VAS, Patient Global Assessment, Health Assessment Questionnaire (HAQ), and tender enthesal points. The MDA is achieved when five out of seven criteria are met. The MDA can be widely adopted in the routine rheumatology clinic, owing to the ease of evaluating the individual component measures and the absence of blood tests. Very low disease activity (VLDA), a modified MDA, has been developed and validated in recent studies. It represents the most stringent target for remission in PsA. The VLDA state is achieved when seven out of seven criteria are met.

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The Ankylosing Spondylitis Disease Activity Score (ASDAS) is a recently developed composite disease activity score endorsed by the Assessment of SpondyloArthritis International Society (ASAS). The preferred version selected by the ASAS is the ASDAS-C-reactive protein, and the alternative is the ASDAS-erythrocyte sedimentation rate. The ASDAS score correlated well with disease activity and showed good discriminative power, in terms of both physician and patient global assessments of disease severity. The expert panel recognized the lack of validation of ASDAS in patients with PsA and axial involvement. However, the panel suggests that in such cases, the ASDAS be used.

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The expert panel acknowledged the pivotal role of rheumatologists in the care of patients with PsA and agreed that, for this reason, stratification of disease severity should primarily be based on rheumatological assessment. Severe PsA should be established in accordance with the ACR/NPF criteria: poor prognostic factors (erosive disease, dactylitis, elevated levels of inflammatory markers such as erythrocyte sedimentation rate and C-reactive protein attributable to PsA), long-term damage that interferes with function (eg joint

| Components | DAPSA | CPDAI | PASDAS | MDA | PsARC | ASDAS |
|------------|-------|-------|-------|-----|-------|-------|
| **Clinical assessment** |       |       |       |     |       |       |
| Tender joint count | 68    | 68    | 68    | 68  | 68    | 68    |
| Swollen joint count | 66    | 66    | 66    | 66  | 66    | 66    |
| PASI | X      | X     |       |     |       |       |
| Enthesitis (LEI) | X      | X     |       |     |       |       |
| Dactylitis count | X      | X     |       |     |       |       |
| VAS physician | X      |       |       |     |       |       |
| Physician Global |       |       |       | X   |       |       |

| Patient questionnaire |       |       |       |     |       |       |
| VAS global | X      | X     | X     | X   | X     | X     |
| VAS skin | X      | X     | X     |     |       |       |
| VAS joints |       |       |       |     |       |       |
| VAS pain | X      |       |       |     |       |       |
| Back pain | X      |       |       |     |       |       |
| HAQ | X      |       |       |     |       |       |
| DLQI | X      |       |       |     |       |       |
| BASDAI | X      |       |       | X   |       |       |
| ASQoL | X      |       |       |     |       |       |
| SF-36 PCS |       |       |       |     |       |     |
| PsAQoL |       |       |       |     |       |     |
| ASAS partial remission |       |       |       |     |       |     |

| Laboratory assessment |       |       |       |     |       |       |
| CRP | X      |       |       |     |       |       |
| ESR | X      |       |       |     |       |       |

Note: Consistent use of scoring method for assessment is important in clinical practice.

Abbreviations: ASDAS, Ankylosing Spondylitis Disease Activity Score; ASQoL, Ankylosing Spondylitis Quality of Life; BASDAI, Bath Ankylosing Spondylitis Disease Activity Index; CPDAI, Composite Psoriatic Disease Activity Index; CRP, C-reactive protein; DAPSA, Disease Activity Index for Psoriatic Arthritis; DAS28, Disease Activity Score 28; DLQI, Dermatology Life Quality Index; ESR, erythrocyte sedimentation rate; LEI, Leeds Enthesitis Index; MDA, minimal disease activity; PASDAS, Psoriatic Arthritis Disease Activity Score; PASI, Psoriasis Area and Severity Index; PsAQoL, Psoriatic Arthritis-specific Quality of Life; PsA, psoriatic arthritis; PsARC: Psoriatic Arthritis Response Criteria; SF-36 PCS, Short Form 36 Physical Component Scale; VAS, visual analogue scale.
TABLE 2 Consensus statements on assessing disease activity in PsA

1. Assessment of PsA requires consideration of major disease domains, including peripheral arthritis, axial disease, enthesitis, dactylitis, psoriasis, nail disease, uveitis, and inflammatory bowel disease.

2. Instruments that could be considered for measuring activity in patients with PsA include: PASDAS and DAPSA scores, the PsARC, MDA score, and the ASDAS.

PsARC is an easy instrument that can be considered for assessment of disease activity in patients with PsA in clinical practice. Although PsARC is no longer part of the OMERACT core domain set, some insurance companies mandate it for approval of immunosuppressive therapy.

MDA score can be considered a valid and reliable instrument for the assessment of disease activity state and treatment target in patients with PsA.

The ASDAS score can be considered in the assessment of PsA with axial involvement, despite the lack of validation studies.

A combination of two or three of the most preferred instruments can be used to assess disease activity, and the practitioner should have the option to choose an instrument based on patient characteristics and disease involvement.

Stratification of disease activity should be assessed considering one or more of the following parameters:

- Involvement of joints
- Damage on imaging modalities
- Loss of physical function
- Quality of life impact
- Patient-reported outcomes (eg SF-12/36, HAQ-DI, FACIT-F scale)
- Axial involvement

For stratification of disease activity of PsA, only rheumatological assessment instruments should be considered.

Severe PsA disease includes the presence of one or more of the following (ACR/NPF):

- Poor prognostic factors (erosive disease, dactylitis, extensive skin disease)
- Long-term damage that interferes with function (eg joint deformities)
- Highly active disease that causes major impairment to quality of life
- Rapidly progressive disease

3. Regular assessment of the following is recommended:

- Pain
- Functional limitation
- Quality of life and
- Structural damage (eg X-ray, ultrasound, MRI)

4. Assessment and timely referral of comorbidities and related conditions, such as metabolic syndrome, obesity, cardiovascular disease, psychiatric disease, fibromyalgia, fatty liver disease, malignancies, chronic infections (eg hepatitis B virus/hepatitis C virus), and bone health, is recommended.

Abbreviations: ACR, American College of Rheumatology; ASDAS, Ankylosing Spondylitis Disease Activity Score; DAPSA, Disease Activity in Psoriatic Arthritis; FACIT-F, Functional Assessment of Chronic Illness Therapy-Fatigue; HAQ-DI, Health Assessment Questionnaire-Disability Index; MDA, minimal disease activity; MRI, magnetic resonance imaging; NPF, National Psoriasis Foundation; OMERACT, Outcome Measures in Rheumatology Clinical Trials; PASDAS, Psoriatic Disease Activity Score; PsA, psoriatic arthritis; PsARC, Psoriatic Arthritis Response Criteria; QoL, quality of life; SF-12/36, Short Form-12/36.

deformities), and highly active disease that causes major impairment to quality of life and rapidly progressive disease.26

The important disease activity measures routinely used in clinical practice are provided in Table 1, along with their respective components. Consensus statements on assessing PsA disease severity are presented in Table 2.

3.3 | Nonpharmacological therapies

It is known that comorbid medical conditions and lifestyle factors (such as obesity, smoking, alcohol intake) and environmental triggers are risk factors for the development of PsA.23,56,57 Patients with obesity and PsA are likely to experience chronic inflammation and have more severe disease activity when compared with patients with a normal body mass index. Obesity is an independent risk factor for PsA, but it is also true that patients with obesity have poorer outcomes and response to pharmacological therapies.22,58 Although the evidence is limited to draw definitive conclusions,59 weight-loss interventions can be particularly effective in improving disease activity in this population.60,61 These patients may directly benefit from the use of a hypocaloric diet plan, either alone or in combination with aerobic physical exercise.62 There is evidence that intermittent fasting, such as the circadian system of fasting observed during Ramadan, is associated with improved disease activity in patients with PsA, regardless of the pharmacological therapy they receive.63

In accordance with the recommendations of the ACR/NPF,26 the expert panel agreed that any form of physical exercise is preferable
to none in patients with active PsA. Despite limited evidence, physical exercise has been shown to improve cardiorespiratory function and health-related quality of life in patients with active PsA. Patients with active PsA may also benefit from the use of nonpharmacological interventions such as physical exercise, occupational therapy, massage therapy, and acupuncture. The expert panel opined that low-impact physical exercises, such as tai chi, swimming, and yoga, should be encouraged in patients who cannot tolerate high-impact exercises such as running.

Despite the fact that there have been few studies examining the effect of smoking on treatment outcomes in PsA patients, it is well established that smoking is strongly linked to radiographic progression and poor prognosis in rheumatoid arthritis (RA). Smoking cessation is associated with lower disease activity and improved cardiovascular outcomes in patients with RA. Therefore, in accordance with ACR/NPF, smoking cessation (cigarettes or tobacco) is recommended in patients with PsA.

A significantly high proportion of patients with PsA report poor quality of life, depressive symptoms, anxiety, mood disturbances, and changes in sleep quality. It has been reported that higher disease activity and pain scores are correlated with the presence of a comorbid mental condition. Psychological interventions, therefore, are an important part of the multidisciplinary care plan for the management of PsA. Although studies are lacking for PsA, psychological interventions such as cognitive behavioral therapy, biofeedback, counseling, mindfulness, relaxation (eg tai chi and yoga), and patient education have been shown to have a positive effect on the physical and psychological distress associated with RA.

Considering the value of these interventions in improving quality of life, which can ultimately have a positive impact on disease outcomes, the expert panel recommends the use of psychotherapy in the routine clinical management of PsA. Consensus recommendations for the use of nonpharmacological therapies for PsA are presented in Table 3.

### TABLE 3 Consensus recommendations for use of nonpharmacological therapies for psoriatic arthritis (PsA)

| Recommendations          |
|--------------------------|
| **Diet**                 |
| Patients with PsA should be provided dietary counseling |
| Intermittent fasting can have beneficial effects on PsA disease activity, including PsA-related disorders, such as enthesitis and dactylitis, regardless of the implicated drug therapy |
| In patients with overweight and obesity, weight loss should be emphasized |
| Limited intake of alcohol should be encouraged |
| **Exercise**             |
| In patients with PsA, some form or combination of physical therapy, exercise, occupational therapy, acupuncture, and massage therapy should be considered |
| Low-impact exercises such as yoga, tai chi, and swimming should be encouraged |
| High-impact exercises such as running can be considered in patients who have no contraindication to these exercises |
| **Smoking**              |
| Smoking (cigarettes and tobacco) cessation should be emphasized |
| **Psychotherapy**        |
| Psychotherapy should be considered for patients with PsA, as depression is prevalent in these patients |

### 4 CONCLUSION

The present consensus statements are in agreement with established global guidelines on the different aspects of PsA, especially highlighting the evaluation of PsA and nonpharmacological therapies for PsA. These consensus statements can assist healthcare professionals in the UAE to effectively evaluate and treat patients with PsA.

### AUTHOR CONTRIBUTIONS

KAA had a substantive role in drafting the final manuscript. The authors are fully responsible for all the content and editorial decisions; the authors involved themselves at all stages of manuscript development and approved the final version.

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### CONFLICT OF INTEREST

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### REFERENCES

1. Gladman DD, Antoni C, Mease P, Clegg DO, Nash P. Psoriatic arthritis: epidemiology, clinical features, course, and outcome. Ann Rheum Dis. 2005;64(Suppl 2):i14-i17.
2. Stolwijk C, van Onna M, Boonen A, van Tubergen A. Global prevalence of Spondyloarthritis: a systematic review and meta-regression analysis. Arthritis Care Res (Hoboken). 2016;68(9):1320-1331.
3. Alamanos Y, Voulgaris PV, Drosos AA. Incidence and prevalence of psoriatic arthritis: a systematic review. J Rheumatol. 2008;35(7):1354-1358.
4. Gelfand JM, Gladman DD, Mease PJ, et al. Epidemiology of psoriatic arthritis in the population of the United States. J Am Acad Dermatol. 2005;53(4):573.
5. Al-Awadhi AM, Olusi SO, Moussa M, et al. Musculoskeletal pain, disability and health-seeking behavior in adult Kuwaitis using a validated Arabic version of the WHO-ILAR COPCORD Core questionnaire. Clin Exp Rheumatol. 2004;22(2):177-183.
6. Al Saleh J, Sayed ME, Monsef N, Darwish E. The prevalence and the determinants of musculoskeletal diseases in Emiratis
attending primary health care clinics in Dubai. Oman Med J. 2016;31(2):117-123.

7. Wilson FC, Icen M, Crowson CS, McEvoy MT, Gabriel SE, Kremer HM. Incidence and clinical predictors of psoriatic arthritis in patients with psoriasis: a population-based study. Arthritis Rheum. 2009;61(2):233-239.

8. Thumboo J, Uramoto K, Shebib MI, et al. Risk factors for the development of psoriatic arthritis: a population based nested case control study. J Rheumatol. 2002;29(4):757-762.

9. Tey HL, Ee HL, Tan AS, Theng TS, Wong SN, Khoo SW. Risk factors associated with having psoriatic arthritis in patients with cutaneous psoriasis. J Dermatol. 2010;37(5):426-430.

10. Kane D, Stafford L, Bresnihan B, FitzGerald O. A prospective, clinical and radiological study of early psoriatic arthritis: an early synovitis clinic experience. Rheumatology (Oxford). 2003;42(12):1460-1468.

11. Kimball AB, Gladman D, Gelfand JM, et al. National Psoriasis Foundation clinical consensus on psoriasis comorbidities and recommendations for screening. J Am Acad Dermatol. 2008;58(6):1031-1042.

12. Husni ME, Merola JF, Davin S. The psychosocial burden of psoriatic arthritis. Semin Arthritis Rheum. 2017;47(3):351-360.

13. Crown WH, Bresnahan BW, Orsini LS, Kennedy S, Leonardi C. The burden of illness associated with psoriasis: cost of treatment with systemic therapy and phototherapy in the US. Curr Med Res Opin. 2004;20(12):1929-1936.

14. Lai TL, Yim CW, Wong PY, Leung MC, Ng WL. Hyperuricemia in Asian psoriatic arthritis patients. Int J Rheum Dis. 2018;21(4):843-849.

15. Falten R, Duret PM, Gottenberg JE, Spielmann L, Messer L. At the crossroads of gout and psoriatic arthritis: ‘psout’. Clin Rheumatol. 2020;39(5):1405-1413.

16. Gupta S, Syrimi Z, Hughes DM, Zhao SS. Comorbidities in psoriatic arthritis: a systematic review and meta-analysis. Rheumatol Int. 2021;41(2):275-284.

17. Leung YY, Ogdie A, Orbai AM, et al. Classification and outcome measures for psoriatic arthritis. Front Med (Lausanne). 2018;5:246.

18. Betteridge N, Boehncke WH, Bundy C, Gossec L, Gratasoc J, Augustin M. Promoting patient-centred care in psoriatic arthritis: a multidisciplinary European perspective on improving the patient experience. J Eur Acad Dermatol Venereol. 2016;30(4):576-585.

19. Lubrano E, Scipiggiano S, Azuaga AB, Ramirez J, Canete JD, Perrotta FM. Impact of comorbidities on disease activity, patient global assessment, and function in psoriatic arthritis: a cross-sectional study. Rheumatol Ther. 2020;7(4):825-836.

20. Coates LC, Kavanaugh A, Mease PJ, et al. Group for research and assessment of psoriasis and psoriatic arthritis 2015 treatment recommendations for Psoriatic arthritis. Arthritis Rheumatol. 2016;68(Suppl 10):1060-1071.

21. Gossec L, Baraliakos X, Kerschbaumer A, et al. EULAR recommendations for the management of psoriatic arthritis with pharmacological therapies: 2019 update. Ann Rheum Dis. 2020;79(6):700-712.

22. Kumthekar A, Ogdie A. Obesity and psoriatic arthritis: a narrative review. Rheumatol Ther. 2020;7(3):447-456.

23. Li W, Han J, Qureshi AA. Smoking and risk of incident psoriatic arthritis in US women. Ann Rheum Dis. 2012;71(6):804-808.

24. Roelsgaard IK, Lkaidel E, Rollesfai S, et al. Smoking cessation is associated with lower disease activity and predicts cardiovascular risk reduction in rheumatoid arthritis patients. Rheumatology (Oxford). 2020;59(8):1979-2004.

25. Sokka T, Hakkinen A, Kautainen H, et al. Physical inactivity in patients with rheumatoid arthritis: data from twenty-one countries in a cross-sectional, international study. Arthritis Rheum. 2008;59(1):42-50.

26. Singh JA, Guyatt G, Ogdie A, et al. 2018 American College of Rheumatology/National Psoriasis Foundation guideline for the treatment of psoriatic arthritis. Arthritis Rheumatol. 2019;71(1):5-32.

27. Hamadah IR, Al Raddadi AA, Bahamdan KA, et al. Saudi practical guidelines on biologic treatment of psoriasis. J Dermatol Treat. 2015;26(3):223-229.

28. Coates LC, Corp N, van der Windt DA, Soriano ER, Kavanagh A. GRAPPA treatment recommendations: an update from the 2020 GRAPPA annual meeting. J Rheumatol. 2021;47:1796.e1-1796.e16.

29. Ritchlin CT, Kavanagh A, Gladman DD, et al. Treatment recommendations for psoriatic arthritis. Ann Rheum Dis. 2009;68(9):1387-1394.

30. Eberl G, Studnicka-Benke A, Hitzelhammer H, Gschnait F, Smolen JS. Development of a disease activity index for the assessment of reactive arthritis (DAREA). Rheumatology (Oxford). 2000;39(2):148-155.

31. Schoels M, Aletaha D, Funovits J, Kavanagh A, Baker D, Smolen JS. Application of the DARE/A/DAPSA score for assessment of disease activity in psoriatic arthritis. Ann Rheum Dis. 2010;69(8):1441-1447.

32. Nell-Duxneuner VP, Stamm TA, Machold KP, Pfluegbeli S, Aletaha D, Smolen JS. Evaluation of the appropriateness of composite disease activity measures for assessment of psoriatic arthritis. Ann Rheum Dis. 2010;69(3):546-549.

33. Salaffi FCA, Carotti M, Gasparini S, Gutierrez M. Disease activity in psoriatic arthritis: comparison of the discriminative capacity and construct validity of six composite indices in a real world. Biomed Res Int. 2014:2014.1:12.

34. Wong PCHLY, Li EK, Lam LS. Measuring disease activity in psoriatic arthritis. International Journal of rheumatology. Int J Rheumatol. 2012;2012:1-10.

35. Mumentz A, Gallagher P, Kirby B, et al. Development of a preliminary composite disease activity index in psoriatic arthritis. Ann Rheum Dis. 2011;70(2):272-277.

36. Hellilwll PS, Kavanagh A. Comparison of composite measures of disease activity in psoriatic arthritis using data from an interventional study with golimumab. Arthritis Care Res (Hoboken). 2014;66(5):749-756.

37. Hellilwll PS, FitzGerald O, Fransen J, et al. The development of candidate composite disease activity and responder indices for psoriatic arthritis (GRACE project). Ann Rheum Dis. 2013;72(6):986-991.

38. Hellilwll P, Coates LC, FitzGerald O, et al. Disease-specific composite measures for psoriatic arthritis are highly responsive to a Janus kinase inhibitor treatment that targets multiple domains of disease. Arthritis Res Ther. 2018;20(1):242.

39. Gladman DD, Mease PJ, Healy P, et al. Outcome measures in psoriatic arthritis. J Rheumatol. 2007;34(5):1159-1166.

40. Clegg DO, Reda DJ, Mejias E, et al. Comparison of sulfasalazine and placebo in the treatment of psoriatic arthritis. A Department of Veterans Affairs Cooperative Study. Arthritis Rheum. 1996;39(12):2013-2020.

41. Mease PJ, Goffe BS, Metz J, VorderStoop A, Finck B, Burge DJ. Etanercept in the treatment of psoriatic arthritis and psoriasis: a randomised trial. Lancet. 2000;356(9227):385-390.

42. Kaltwasser JP, Nash P, Gladman D, et al. Efficacy and safety of leflunomide in the treatment of psoriatic arthritis and psoriasis: a multinational, double-blind, randomized, placebo-controlled clinical trial. Arthritis Rheum. 2004;50(6):1939-1950.

43. Coates LCSV, Wilson H, Revicki D, Stolshef B, Samad A. Measurement properties of the minimal disease activity criteria for psoriatic arthritis. RMD Open. 2019;5:e001002.

44. Gossec L, McGonagle D, Korotaeva T, et al. Minimal disease activity as a treatment target in psoriatic arthritis: a review of the literature. J Rheumatol. 2018;45(1):6-13.

45. Coates LC, Hellilwll PS. Validation of minimal disease activity criteria for psoriatic arthritis using interventional trial data. Arthritis Care Res (Hoboken). 2010;62(7):956-969.

46. Coates LC, Rahman P, Psaradellis E, et al. Validation of new potential targets for remission and low disease activity in psoriatic arthritis in patients treated with golimumab. Rheumatology (Oxford). 2019;58(3):522-526.
47. Lipton S DA. The new ASAS classification criteria for axial and peripheral spondyloarthritis: promises and pitfalls. Int J Clin Rheumatol. 2012;7(6):675, 682.

48. van der Heijde D, Lie E, Kvien TK, et al. ASDAS, a highly discrimina-
tory ASAS-endorsed disease activity score in patients with anky-
losing spondylitis. Ann Rheum Dis. 2009;68(12):1811-1818.

49. Rudwaleit M, van der Heijde D, Landewe R, et al. The development
of assessment of SpondyloArthritis international society classifica-
tion criteria for axial spondyloarthritis (part II): validation and final
selection. Ann Rheum Dis. 2009;68(6):777-783.

50. Akgul O, Ozgocmen S. Classification criteria for spondyloarthropa-
thes. World J Orthop. 2011;2(12):107-115.

51. Orbai AM, Ogdie A. Patient-reported outcomes in psoriatic arthri-
tis. J Rheumatol. 2015;42(5):835-840.

52. Wervers K, Luime JJ, Tchetverikov I, et al. Comparison of dis-
ease activity measures in early psoriatic arthritis in usual care.
Rheumatology (Oxford). 2019;58(12):2251-2259.

53. Mease P. Psoriatic arthritis and spondyloarthritis assessment and
management update. Curr Opin Rheumatol. 2013;25(3):287-296.

54. Kılıç G, Kılıç E, Nas K, et al. Comparison of ASDAS and BASDAI
as a measure of disease activity in axial psoriatic arthritis. Clin
Rheumatol. 2015;34(3):515-521.

55. Machado P, Landewé R, Lie E, et al. Ankylosing spondylitis disease
activity score (ASDAS): defining cut-off values for disease activity
states and improvement scores. Ann Rheum Dis. 2011;70(1):47-53.

56. Ogdie A, Gelfand JM. Clinical risk factors for the development of
psoriatic arthritis among patients with Psoriasis: a review of avail-
able evidence. Curr Rheumatol Rep. 2015;17(10):64.

57. Wu S, Cho E, Li WQ, Han J, Qureshi AA. Alcohol intake and
risk of incident psoriatic arthritis in women. J Rheumatol.
2015;42(5):835-840.

58. Russollino A, Iervolino S, Peluso R, et al. Obesity and psoriatic ar-
thritis: from pathogenesis to clinical outcome and management.
Rheumatology (Oxford). 2013;52(1):62-67.

59. Almodovar R, Zarco P, Oton T, Carmona L. Effect of weight loss
on activity in psoriatic arthritis: a systematic review. Reumatol Clin
(Engl ed). 2018;14(4):207-210.

60. Klingberg E, Bilberg A, Bjorkman S, et al. Weight loss improves
disease activity in patients with psoriatic arthritis and obesity: an
interventional study. Arthritis Res Ther. 2019;21(1):17.

61. Mahil SK, McSweeney SM, Kloczko E, McGowan B, Barker JN,
Smith CH. Does weight loss reduce the severity and incidence of
psoriasis or psoriatic arthritis? A critically appraised topic. Br J
Dermatol. 2019;181(5):946-953.

62. Naldi L, Conti A, Cazzaniga S, et al. Diet and physical exer-
cise in psoriasis: a randomized controlled trial. Br J Dermatol.
2014;170(3):634-642.

63. Adawi M, Damiani G, Bragazzi NL, et al. The impact of intermittent fast-
ing (Ramadan fasting) on psoriatic arthritis disease activity, Enthesitis,
and dactylitis: a multicentre study. Nutrients. 2019;11(3):601.

64. Baillet A, Zeboulou N, Gossec L, et al. Efficacy of cardiorespi-
ratory aerobic exercise in rheumatoid arthritis: meta-analysis
of randomized controlled trials. Arthritis Care Res (Hoboken).
2010;62(7):984-992.

65. Siegel P, Tencza M, Apodaca B, Poole JL. Effectiveness of occupa-
tional therapy interventions for adults with rheumatoid arthritis: a
systematic review. Am J Occup Ther. 2017;71(1):7101180050p11.

66. Tillet W, Jadon D, Shaddock G, et al. Smoking and delay to diag-
nosis are associated with poorer functional outcome in psoriatic
arthritis. Ann Rheum Dis. 2013;72(8):1358-1361.

67. Saag KG, Cerhan JR, Kolluri S, Ohashi K, Hunninghake GW,
Schwartz DA. Cigarette smoking and rheumatoid arthritis severity.
Ann Rheum Dis. 1997;56(8):463-469.

68. Soderlin MK, Peterson IF, Geborek P. The effect of smoking on
response and drug survival in rheumatoid arthritis patients treated
with their first anti-TNF drug. Scand J Rheumatol. 2012;41(1):1-9.

69. Rojas-Serrano J, Perez LL, Garcia CG, et al. Current smoking status
is associated to a non-ACR 50 response in early rheumatoid arthri-
tis. A Cohort Study. Clin Rheumatol. 2011;30(12):1589-1593.

70. Saevardsdottir S, Wedren S, Seddighzadeh M, et al. Patients with
early rheumatoid arthritis who smoke are less likely to respond to
treatment with methotrexate and tumor necrosis factor inhibitors:
observations from the epidemiological investigation of rheumatoid
arthritis and the Swedish rheumatology register cohorts. Arthritis Rheum.
2011;63(1):26-36.

71. Strohal R, Kirby B, Puig L, et al. Psoriasis beyond the skin: an expert
group consensus on the management of psoriatic arthritis and com-
mon co-morbidities in patients with moderate-to-severe psoriasis. J
Eur Acad Dermatol Venereol. 2014;28(12):1661-1669.

72. Gezer O, Batmaz I, Sariyildiz MA, et al. Sleep quality in patients
with psoriatic arthritis. Int J Rheum Dis. 2017;20(9):1212-1218.

73. Kotsis K, Voulgaris PV, Tsifetaki N, et al. Anxiety and depressive
symptoms and illness perceptions in psoriatic arthritis and associ-
atations with physical health-related quality of life. Arthritis Care Res
(Hoboken). 2012;64(10):1593-1601.

74. Zhao SS, Miller N, Harrison N, Duffield SJ, Dey M, Goodson NJ.
Systematic review of mental health comorbidities in psoriatic arth-
rthritis. Clin Rheumatol. 2020;39(1):217-225.

75. Knittle K, Maes S, de Gucht V. Psychological interventions for rheu-
matoid arthritis: examining the role of self-regulation with a sys-
tematic review and meta-analysis of randomized controlled trials.
Arthritis Care Res (Hoboken). 2010;62(10):1460-1472.

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