

Online supplement – Supplementary Table 1. Categorization of levels of evidence and grades of recommendation [1]

1a	SLR of randomised controlled trials	A: directly derived from level 1 evidence
1b	At least one randomised controlled trial	
2a	At least one controlled study without randomisation	B: derived from 2 or extrapolated from 1
2b	At least one quasi-experimental study	
3	Descriptive studies (comparative, correlation, case-control)	C: derived from 3 or extrapolated from 1 or 2
4	Expert opinion	D: derived from 4 or extrapolated from 1, 2 or 3

Online supplementary text 1- Methods

At the first meeting in January 2010, the expert committee (as defined in the article) prioritised the research questions and defined the appropriate search terms.

With respect to drug therapy, several important questions were addressed through an evidence-based approach, such as: (1) How do the various synthetic DMARDs compare? (2) Which agents improve musculoskeletal symptoms, skin disease, or both? (3) Is combination therapy of additional benefit? (4) Is there a role for switching between biologicals? (5) Are there particular safety aspects or signals of note? (6) Are glucocorticoids beneficial or do they put patients at risk of exacerbation of the skin disease? (7) What are the specific goals of therapy? (8) How should treatment effects be assessed? (9) What research is necessary to fill in current gaps in knowledge regarding PsA therapy?

Subsequently, the 2 fellows (CGV and ZA), with the help of their mentors (HMO, DVDH, LG, OF), performed the respective systematic literature reviews, divided into 2 areas: (a) synthetic DMARDs and non-steroidal anti-inflammatory drugs

(NSAIDs) (CGV); (b) biologic DMARDs and glucocorticoids (intraarticular and systemic) (ZA). Both fellows also addressed the following aspects: combination therapy, therapeutic strategies, effects on extraarticular disease, prognosis and natural history. The literature search was performed in PubMed Medline, Embase and the Cochrane library and also recent congress abstracts, up to January 2010. All meta-analyses, systematic reviews, randomized controlled trials, non-randomised controlled trials and observational studies including data from registries were analysed. If possible, outcome was quantified using effect sizes which are unit-less and therefore allow for the analysis of efficacy irrespective of the measures evaluated in individual clinical trials. The literature review is published separately (please see reference 31 of the article).

Categorizations of evidence and strength of recommendation were determined (Supplementary Table 1).

At the second task force meeting in May 2010, the fellows presented the results of the systematic literature review in an aggregated form. The taskforce was divided into 2 subgroups, which debated and evaluated the evidence presented, and formulated preliminary sets of recommendations. These proposals were reported to the entire committee which discussed the suggestions on the recommendations in detail, amended them as deemed appropriate in the course of the consensus finding and took the final decisions. An ultimate round of refinement of the wording was done via electronic communication, as well as the voting (please see article text).

Subsequently, the explanations of the bullet point were formulated and underwent review by the panel. The final decisions on the detailed manuscript and the graphic representation of the recommendations were made between December 2010 and January 2011.

The recommendations are targeted at the following groups of stakeholders: (a) firstly, physicians; the recommendations are mainly aimed at rheumatologists, but also other physicians dealing with patients with PsA (irrespective of clinical expression), including general practitioners and other specialists. (b) Patients with PsA can use these recommendations for information on current treatment goals, strategies and opportunities. (c) Other stakeholders include officials in governments, social security agencies and reimbursement agencies.

Online supplementary text 2- overarching principles

A. Nature of psoriatic arthritis

Because of the heterogeneity inherent in PsA [2], appropriate assessment of a PsA patient requires a comprehensive approach to all facets of the disease, including not only peripheral arthritis, but also involvement of the skin and nails, spine, and entheses. The diagnosis of PsA in its earliest stage can be extremely challenging [3]. Several criteria developed for classification of PsA are available [4-7]; the CASPAR (Classification Criteria for PsA) criteria [5] work well for both early and late disease and are also frequently used for diagnostic purposes.

B. General treatment principle

Two themes govern the contents of this principle, firstly the term “best care” which the task force felt to be conveyed by the subsequent recommendations, and secondly the phrase “shared decision” with the patient, which refers to the necessity to discuss treatment aims, management plans and reasons for the recommended approaches with the patient. Sharing the decisions within the health care team, including the dermatologist, is also useful.

The optimal management of patients with PsA requires a combination of non-pharmacological and pharmacological treatment modalities; non-pharmacological therapies are important but are not the focus of these recommendations.

C. Rheumatologists as the main specialists and involvement of a dermatologist

This statement stems from indirect evidence that in RA, patients followed by rheumatologists, in comparison with other physicians, are diagnosed earlier, receive DMARD therapy more frequently and have better outcomes [8, 9]. With the advent of modern therapies and strategies, good knowledge of treatment indications and contra-indications as well as recognition and management of adverse events is increasingly important. Therefore, patients with suspected PsA should be referred to a rheumatologist as early as possible. However, the task force intentionally added the

term “primarily” to this statement, since the management of PsA patients should be shared with primary care physicians and other health professionals in a multidisciplinary approach. Multidisciplinary treatment may be useful in all cases, but particularly in patients with severe PsA. Collaboration between rheumatologists, dermatologists and general practitioners may be essential; and occupational therapy, physical therapy, psychological counseling, intervention of a nurse practitioner and cooperation with an orthopedic surgeon may be helpful for some patients. Also, in countries lacking sufficient numbers of rheumatologists, this task may have to be taken over by other physicians with experience in caring for patients with PsA. Furthermore, this statement is related to the musculoskeletal manifestations of PsA; the group felt that significant skin/nail involvement should lead to collaboration with a dermatologist. Indeed, extensive skin disease with little to no joint involvement would be cared for primarily by dermatologists. However, patients with no joint involvement are not the focus of the present recommendations.

D. Objectives of treatment

In RA, attaining a state of remission or low disease activity leads to better structural and functional outcomes than allowing residual disease activity [10, 11]. Thus, remission is the primary therapeutic aim especially in RA [12] and a new definition of remission has been recently elaborated by the American College of Rheumatology and EULAR [13]. In PsA, there exist only few data regarding natural history and even less regarding remission or treatment objectives [14-18]. Since also in PsA inflammation is related to long-term outcomes for joint involvement [19-24], by analogy with RA, this overarching principle states that the abrogation of inflammation is a component of the therapeutic goal, and that remission is in itself an objective. However, the group felt that in the absence of remission, a low or minimal disease activity state [25, 26] is an alternative target, especially for long-standing disease. Nevertheless, the detailed definition of remission in PsA, its predictors and its relationship with long-term outcomes are still a part of the research agenda and more thorough assessment of prognostic markers of severity (related to risk of progressive disease, structural damage and bad functional outcome) must be addressed (Table 2). Prognostic elements may include extent and severity of joint involvement,

dactylitis, baseline structural damage, and baseline inflammatory indices [19-24, 27-29].

This statement also comprises other important aspects, namely aiming at improvement of long-term outcome of PsA by maximising physical functioning and quality of life as well as prevention of structural damage or its progression.

E. Monitoring and treatment adjustment

This is a general statement related to monitoring. Because of the lack of data regarding the best interval for patient monitoring, the statement only concerns 'regular monitoring'. The interval between two consecutive visits may depend on the disease activity, and on the current treatment taken by the patient (e.g., synthetic DMARDs or biologicals). The group recommends the treatment target should preferably be reached within about 4 months after a treatment change [30]. Similarly, treatment should be adjusted 'appropriately': due to the paucity of data, the group did not feel that more detailed recommendations could be formulated at this point, but more data regarding monitoring and treatment strategies (e.g., tight control [31]) are needed.

In clinical trials, widely used outcomes to monitor patients with PsA include joint counts, skin assessment usually by Physician Global Assessment or Psoriasis Area Severity Index (PASI), Dermatology Quality of Life Index (DLQI) and nail assessment by Nail Psoriasis Severity Index (NAPSI) [32] or modified NAPSI (mNAPSI), pain (by visual analog scale) and the Health Assessment Questionnaire (HAQ) [33], specific measures for dactylitis, enthesitis, or axial involvement as well as health-related quality of life. The mainstay for disease activity assessment are composite measures such as American College of Rheumatology response rates [34], PsA Response Criteria (PsARC) [35] and the Disease Activity Score (DAS28) defined for RA [36-38]; further, the Simplified Disease Activity Index and the Clinical Disease Activity Index (SDAI, CDAI), DAREA (Disease Activity index for REactive Arthritis)/DAPSA (Disease Activity index for PSoriatic Arthritis) and the Composite Psoriatic Disease Activity Index (CPDAI) have been recently validated in PsA [39-41].

An OMERACT (Outcome Measures in Rheumatology) consensus recommended assessing peripheral joints, pain, patient global assessment, physical function, quality

of life, fatigue, and acute phase reactants [42]. Fatigue was considered as a measure that still needs more research activities. The current recommendation from this group, in line with RA recommendations and in light of their validity and sensitivity to change, is to use one of the available validated composite scores to assess PsA activity. However, more studies are needed to fully address this issue and define the most pertinent assessment tools.

Online supplementary text 3 – elaboration of the figure

This graphic representation was originally requested by some of the task force members and its depiction elicited a thorough debate. It was felt by some that no such figure should be produced, because a single Figure might not be representative of this complex disease or might not sufficiently capture the diversity of therapeutic approaches. Others, though, indicated that having a figure may facilitate understanding the complexity of PsA and its treatment approaches and the conveyance of the recommendations to various stakeholders. In the course of these discussions, the figure underwent several rounds of amendments and subsequently a vote for agreement. Scores of 1 and 2 were each given once, scores of 6, 7, 8, 9 and 10 given 1, 6, 5, 9 and 8 times, respectively, arriving at a mean level of agreement of 7.9. Thus it appeared that apart from two members of the task force who generally objected to the principle of a figure and thus voted disagreement, the other members were in high agreement.

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