Consensus on a Core Set of Domains for Psoriatic Arthritis

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ABSTRACT. A psoriatic arthritis (PsA) module was convened at OMERACT 8 in order to achieve consensus on the core domains that should be included in randomized controlled trials and longitudinal observational cohorts of subjects with PsA. Following a plenary session at which current status of measures used to assess PsA were reviewed, and discussion at breakout groups, the group achieved consensus on 6 core domains: peripheral joint activity, skin activity, pain, patient global assessment, physical function, and health-related quality of life. In addition the following domains were considered important but not mandatory: spinal disease, dactylitis, enthesitis, fatigue, nail disease, radiography, physician global assessment, and acute-phase reactants. A research agenda was proposed to include development and validation of instruments for the domains where none existed, and in particular further research was recommended for the following areas: magnetic resonance imaging and ultrasound of joints, enthesitis, skin and synovial tissue analysis, and "participation." (J Rheumatol 2007;34:1167–70)

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Psoriatic arthritis (PsA) has been considered a mild form of arthritis, but recent evidence supports the notion that PsA is more common and more severe than previously thought[1]. Recent therapeutic advances including the availability of anti-tumor necrosis factor and anti-T cell agents have heightened interest in PsA in recent years, and have raised the issue of appropriate outcome measures for PsA[2]. Therefore, it is of utmost importance that we identify a core set of domains for the assessment of patients with PsA, and that we select and/or develop appropriate instruments to assess these domains.

Following a successful workshop on PsA at OMERACT 7, during which the domains that should be included in both clinical trials and longitudinal observational cohorts were outlined (Table 1)[3], a PsA module was included in OMERACT 8.

The objectives for the PsA module at OMERACT 8 were: (1) Achieve consensus on the core set of domains to be assessed in randomized controlled trials (RCT) and longitudinal observational studies (LOS) in PsA; (2) Review and endorse outcome measures to assess these domains based on evidence derived from RCT; and (3) Set up a new research agenda to identify and/or develop other assessment tools.

Prior to presentations at OMERACT 8, a series of questions was posed to the audience regarding domains to be included in RCT (Table 1). Philip Mease presented an analysis based on phase 2 trials with etanercept and infliximab, showing that tender and swollen joint counts, American College of Rheumatology 20/50/70 responses and Disease Activity Score (DAS), as well as the EULAR response criteria using the DAS score functioned well, as did the Psoriatic Arthritis Response Criteria (PsARC)[4]. In these RCT, C-reactive protein did not function well in distinguishing the active treatment group from the placebo treated patients. Dafna Gladman presented results of spinal assessment from INSPIRE (International Spondyloarthritis Inter-rater Reliability Exercise), which found that measurements of spinal mobility used in ankylosing spondylitis (AS) are also reliable in PsA[5]. Paul Healy presented the Leeds Dactylitis Index (LDI)[6], which has proven reliable both in a study from Leeds and in the INSPIRE study. Additionally, in a longitudinal study, counting digits with dactylitis identified improvement, as did the more specific LDI. Philip Helliwell presented data on the reliability of methods to assess enthesitis in PsA. Will Taylor discussed the concept of "participation" and work to date to assess this domain in PsA, and briefly reviewed the measurement properties of health-related quality of life (HRQOL) instruments and physical function scales used in PsA clinical trials. New data were presented suggesting that Medical Outcomes Study Short Form-36 Health Survey Physical Function (SF-36 PF) subscore may be a better generic measure of physical function than the Health Assessment Questionnaire-Disability Index (HAQ-DI) in PsA. Jerry Krueger presented data comparing instruments to assess skin involvement in PsA, including the Psoriasis Activity and Severity Index (PASI) and National Psoriasis Foundation (NPF) scoring system. Desiree van der Heijde presented the results of comparing 4 methods to read a set of radiographs from the Infliximab Multinational Psoriatic Arthritis Controlled Trial (IMPACT). While there was good reproducibility among readers for each method, it was not possible to identify a preferred method. This may be due in part to the very short duration of placebo treatment for comparison — a further study is required. Oliver FitzGerald presented data from tissue analyses in PsA. Four PsA patients from the US, Canada, UK, and Sweden were invited to participate, along with rheumatoid arthritis patients, in the OMERACT meeting. From that group, Peter Grimm presented the patient perspective.

Table 1. Results of voting at the PsA module plenary session at OMERACT 8 compared to OMERACT 7 workshop results.

Item	2004 (%)	1st Vote (%)	2nd Vote (%)
Peripheral joint activity	99	97	96
Patient global	96	95	95
HRQOL	78	92	92
Skin assessment	86	91	86
Enthesitis	60	81	63
Imaging	66	74	72
Dactylitis	48	77	66
Spinal disease	61	75	59
Physician global	41	71	57
Acute phase reactants	64	56	9
Tissue analysis	38	19	9

Following the plenary presentation participants voted again on domains for assessment in PsA RCT, with some changes, most notably for acute phase reactants (Table 1). In comparison to the voting at OMERACT 7, there was more enthusiasm for inclusion of measures to assess HRQOL, dactylitis, and physician global assessment of disease activity.

Breakout groups then reviewed and discussed domains and instruments for their assessment, with emphasis on: peripheral joints (2 groups); spinal involvement (2); HRQOL and participation (2); radiographic and magnetic resonance imaging (MRI) (1); and tissue analysis (1).

The discussions at the breakout groups confirmed the need to assess peripheral joint disease. All breakout groups confirmed that it was an important domain. It was further recommended that the 68 tender/66 swollen joint count be performed.

Enthesitis and dactylitis were also considered important domains in PsA. For enthesitis, several instruments exist that have been used in AS. These instruments partially meet the requirement of the OMERACT filter. One group discussed the "truth" aspect of the OMERACT filter, noting that ultrasonographic enthesitis does not always correlate with tenderness at the insertion of the enthesis, and vice versa. Data on responsiveness and reliability of the Mander, Maastricht AS Enthesitis Score, Berlin, and Spondyloarthritis Research Consortium Canada (SPARCC) enthesitis indices were pre-

sented, and their relative merits discussed. The group felt that the Mander index was too time-consuming, thus failing the feasibility aspect of the filter. A new index, derived from patients with PsA, was presented; in this index only 6 sites are used to assess for entheseal tenderness. After much discussion the group rated the SPARCC and the new Leeds enthesitis index (LENIN) most highly. In another group the recommendation was for simple enthesitis scores. All of these measures require further validation in clinical trials.

The instruments available to measure dactylitis are less extensive and their psychometric properties are less well established. A number of measures exist, ranging from a simple counting of dactylitic digits to a new instrument that measures the circumference of the affected digit and also assesses the degree of tenderness. In a recent clinical trial all available measures were compared. The new LDI is the only measure with reliability data and, although not performing as well as a simple count (in terms of effect size), was thought to be the best option for clinical trials since it provides the best approximation to "truth." While in one group it was recommended that a simple approach may suffice, the conclusion of another breakout group was that valid instruments are available to assess enthesitis and dactylitis in PsA. These instruments await validation in clinical trials.

Radiographs of hands and feet were considered useful for scoring bone damage in PsA. They have a role in clinical trials. Current scoring methods rely on the measurement of periarticular erosions, and there is a need for more research into the effect of the biologic agents on entheseal new bone formation, bone fusion, and periostitis. MRI was still viewed as a research tool in PsA. There was no consensus on ultrasound, but its potential value for the assessment of enthesitis was recognized.

Table 2. Results of the final vote for the PsA module at OMERACT 8.

Item	Vote in favour (%)
Core set	72
Peripheral joint assessment	
Skin assessment	
Pain	
Patient global	
Physical function	
Health-related quality of life	
Spinal assessment	80
Dactylitis	80
Enthesitis	78
Physician global	65
Radiological assessment	86
Acute phase reactants	67
Fatigue	70
Tissue analysis	45
Participation	not available

Patient reported outcomes such as the patient global assessment (PGA) and pain assessment were considered important. The PGA is very dependent on the wording, and no consensus was reached regarding the use of a single PGA or a separate one for skin and joint manifestations. Pain was also considered important, but whether a visual analog scale or a numeric rating scale should be used was not clear. Fatigue was also thought to be an important domain, but it was concluded

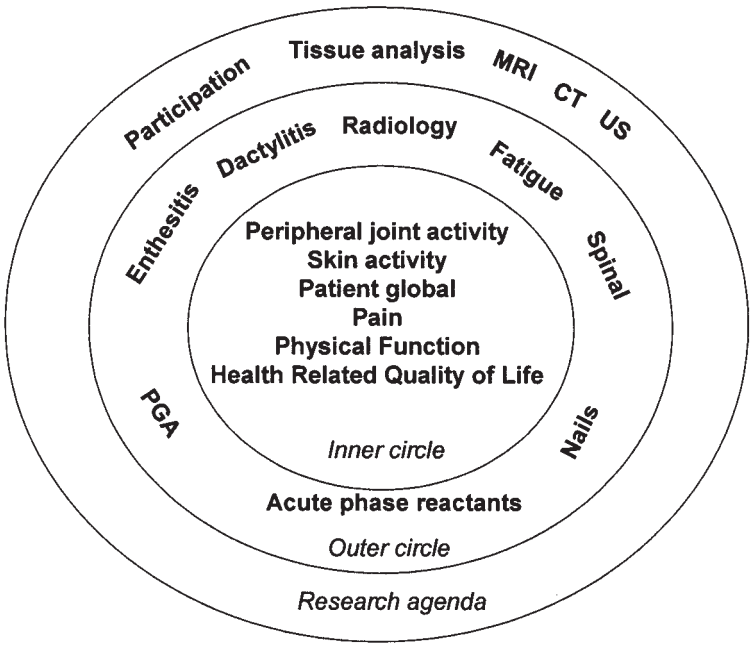

Figure 1. Domains for PsA. PGA: physician global assessment, MRI: magnetic resonance imaging, CT: computed tomography, US: ultrasound.

that further research was necessary to identify its relationship to pain and to determine the best instrument to assess it. HRQOL was deemed important. Whether a disease-specific or a generic instrument was better was not resolved. Physical function was also considered important. Both the HAQ-DI and the physical function component of the SF-36 are suitable to measure physical function in PsA. One of the groups felt that there was enough information to determine that the SF-36 was more responsive to short-term changes in perceived health than the HAQ-DI. Participation was an important concept but more research was needed. No firm consensus was reached regarding specific measures of HRQOL, although subsequent plenary discussion strongly recommended that RCT data be made available to apply the OMERACT filter to HRQOL instruments used in these studies.

Following the breakout group discussions, the list of important domains was long, and limited because there were no available validated instruments for some of the domains. Participants then considered 3 categories: "inner core," "outer core," and research agenda (Figure 1). The items included in the inner core must be included in all RCT and LOS; other domains recommended but not mandatory are included in the outer core. Some of these items require further study. A set of items requiring further research were put in the research agenda (outer circle, Figure 1).

It was proposed that peripheral joint activity, skin activity, pain, PGA, physical function, and HRQOL be included in the core set. Spinal disease, dactylitis, enthesitis, fatigue, nail disease, radiography, physician global assessment, and acute-phase reactants were in the middle core set. Other imaging techniques such as MRI and ultrasound of joints and entheses should be researched, as should tissue analysis and participation.

Of 137 members present, 72.3% voted in favor of the core set proposed above (Table 2, Figure 1). Thus this core set of domains must be included in RCT and LOS in PsA. Table 3 shows the results of votes for individual items to be included in the outer core and research agenda. The results of the PsA module are shown in Figure 1.

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1. Biomarkers and Surrogate Endpoints
2. Imaging
3. Outcome Measures
4. Workshops and Special Interest Groups

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