Psoriatic Arthritis Screening Tools

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ABSTRACT. Psoriatic arthritis (PsA) is an inflammatory arthritis associated with psoriasis, with an indolent and progressive course. A delay in diagnosis and treatment may lead to an erosive arthropathy, leading further to physical disability and deformity. To help clinicians screen for PsA, the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) has led an effort to develop and validate 3 PsA screening tools. Administration of a well designed screening tool can increase detection of PsA, help determine the prevalence of PsA in a given population, record clinical data for genotype-phenotype studies, and track response to therapy. The development and validation of these screening tools was a major focus at the GRAPPA annual meeting at Boston in September 2007; we summarize that portion of the meeting. (J Rheumatol 2008;35:1423–5)

Key Indexing Terms:
PSORIATIC ARTHRITIS PSORIASIS SCREENING

Psoriatic arthritis (PsA) is an inflammatory arthritis associated with psoriasis, with an indolent and progressive course. A delay in diagnosis and treatment may lead to an erosive arthropathy, further leading to physical disability and deformity[1-4]. Because psoriasis skin lesions usually precede the onset of joint symptoms by 10 years[5], and dermatologists manage 95% of psoriasis cases in the US[6], dermatologists are in an ideal position to screen individuals for PsA early in the disease course. Combined dermatology-rheumatology clinics provide another ideal environment to screen individuals with psoriasis for PsA[7].

GRAPPA (Group for Research and Assessment of Psoriasis and Psoriatic Arthritis) has led an effort to develop and validate 3 PsA screening tools. This was a major focus at the annual meeting of GRAPPA at Boston in September 2007 and is summarized in this article.

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Supported by an unrestricted financial grant from Abbott, Centocor, Wyeth, Amgen, and UCB Pharma.

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Description of Screening Tools

Abrar A. Qureshi (Deparment of Dermatology, Brigham and Women's Hospital, Harvard Medical School) led this discussion, which focused on 3 survey methods to screen individuals for PsA, summarized in Table 1.

Elaine Husni (Rheumatic and Immunologic Diseases, Cleveland Clinic Foundation) presented a summary of the Psoriatic Arthritis Screening and Evaluation (PASE) tool that was developed and validated at the Center for Skin and Related Musculoskeletal Diseases Clinic, a combined dermatology-rheumatology clinic at Brigham and Women's Hospital in Boston. The PASE was designed to help dermatologists identify individuals with psoriasis who would benefit from a prompt referral to rheumatology; it was not meant to be used as a diagnostic tool or as a substitute for a thorough rheumatologic examination. PASE consists of 15 questions divided into 2 subscales, 7 questions that assess symptoms, and 8 questions that assess function. The scoring system provides a numeric scale; those individuals who are more likely to have PsA will score higher than individuals without PsA. Results of pilot-testing in 71 individuals were analyzed to validate this concept: scores of individuals without PsA (including those with osteoarthritis) were significantly lower than scores of those with PsA (without osteoarthritis). Further, PASE was able to distinguish severe PsA subtypes (mutilans) from less severe subtypes[8]. Validation in a larger sample size has been completed and will be published shortly. Table 1 shows the sensitivity and specificity of the PASE after validation in this larger sample size.

Dafna Gladman (Division of Rheumatology, University of Toronto) first presented short summaries of 2 existing screening tools: the Psoriatic Arthritis Questionnaire (PAQ) developed by Paul Peloso, and the Alenius modification of the PAQ. At a score cutoff of 7 out of 10, the Peloso PAQ had a sensitivity of 0.85 and specificity of 0.88. On the other

Table 1. Comparison of 3 psoriatic arthritis screening tools discussed at GRAPPA 2007.

	ToPAS	PEST	PASE
Setting	Dermatology/rheumatology clinic Dermatology clinic Rheumatology clinic Psoriatic arthritis clinic Family medicine clinic	Community setting and hospital clinic	Dermatology/Rheumatology clinic Dermatology clinic
Based on	Rheumatology, dermatology, and methodology input	Alenius[9]	De novo dermatology-rheumatology input and Delphi exercise
Skin/nail assessment	Yes	Yes	No
Sensitivity	0.92† 0.92‡ 0.89** 0.95††	0.97‡	0.88*
Specificity	0.95† 0.85‡ 0.86** 1.0††	0.79‡	0.83*
"Active" disease	Yes	Yes	Yes
"Remission"	Yes	Yes	No
Marker of treatment response	No	No	Yes
Axial disease	Yes	Yes	Yes (axial disease subscale being developed)
Unique features	Pictures of skin/nail involvement	Figure of mannequin to indicate areas of soreness	Symptom and function subscales

* Combined dermatology-rheumatology clinic; † General dermatology clinic; ‡ Community and general rheumatology clinic; ** Psoriasis and psoriatic arthritis clinic; †† Family medicine clinic. ToPAS: Toronto Psoriatic Arthritis Screening tool; PEST: Psoriasis Epidemiology Project; PASE: Psoriatic Arthritis Screening and Evaluation Tool.

hand, the Alenius modification of the PAQ had a sensitivity of 0.60 and specificity of 0.62, with a score cutoff of 4 out of 10[9]. Dr. Gladman summarized another screening tool, the Toronto Psoriatic Arthritis Screening tool (ToPAS), which she and her team have developed and validated at 5 clinical sites in Toronto: clinics for PsA, psoriasis, general dermatology, general rheumatology, and family medicine[10]. Dr. Gladman presented the questionnaire, comprising pictures of psoriatic skin lesions along with questions about pain and stiffness in the joints and back, and suggested it could also be used for epidemiology studies and family investigations. ToPAS was administered to consecutive patients at the 5 clinical sites, with a rheumatologist examining each patient. Stepwise analysis of the results revealed high sensitivities and specificities at all clinical sites. It was concluded that the ToPAS was an excellent tool to screen for PsA in psoriatic individuals and in the general population.

Philip Helliwell (Academic Unit of Muskuloskeletal and Rehabilitation Medicine, University of Leeds) presented a summary of a screening questionnaire that had been used as part of the Psoriasis Epidemiology ProjecT (PEST) in Leeds and Bradford. The PEST questionnaire was based on both the PAQ by Peloso and the Alenius modification of the PAQ, with the addition of new questions and a picture of a mannequin for patients to indicate areas of soreness. This questionnaire was sent to 750 individuals with psoriasis as diagnosed by their general practitioner. Preliminary analysis of 50 responses revealed that 6 individuals had PsA. An Alenius cutoff score of 4 gave the sensitivity and specificity shown in Table 1. Increasing that cutoff score to 5 improved the figures to those that Alenius, *et al* achieved in their original article. Questions regarding joint pain and morning stiffness tended to be more sensitive and less specific than questions regarding nail changes.

Summary of Breakout Group Discussions

Following the presentation of screening tools, GRAPPA participants joined one of 2 breakout groups to discuss the application and further validation of these tools in research and clinical practice. Elaine Husni and Kristina Duffin (Department of Dermatology, University of Utah) presented summaries of these discussions. Both groups reached consensus regarding the properties of a well designed screening tool. For example, a screening tool used in clinical practice

should be highly sensitive and quick and easy to administer, whereas a screening tool used for research purposes should be highly specific and include more comprehensive data. One group entertained the possibility of creating a composite screening tool that could perform well in both research and clinical practice. However, it was ultimately decided that GRAPPA should validate 2 separate tools, preferably in different patient populations and clinical settings, e.g., in a community-based setting versus a university/academic setting. Both groups agreed that all psoriasis patients in dermatology clinics should be screened; however, there was no clear consensus on whether screening should occur in all family medicine or internal medicine clinics. One group even suggested screening orthopedic patients undergoing surgery for single-joint synovitis, which could also represent undiagnosed PsA. One group clarified that the basic purpose of a screening tool for PsA is to accelerate referral to a rheumatologist to establish a definitive diagnosis, not to serve as a substitute for diagnosis or to compare drug efficacy.

Many rheumatologists expressed concern that a screening tool for PsA should have some degree of specificity, otherwise dermatologists might refer all cases of osteoarthritis, fibromyalgia, and rheumatoid arthritis. It was suggested that a screening tool could include a question to help distinguish patients with fibromyalgia. A related suggestion was the possibility that dermatologists could learn physical examination skills to increase the specificity of the screening tool, such as a knee evaluation to assess for a knee effusion. Although this might lead to false-negative diagnoses, many rheumatologists agreed that teaching these skills to dermatologists would increase the specificity of screening for PsA. The inclusion of pictures in a screening questionnaire also seemed a sensible idea, especially given the need to create plain-language documents to reach as wide an audience as possible.

DISCUSSION

In summary, members of GRAPPA have developed 3 instruments to screen for PsA, each having unique features and all currently being validated in different populations. Possible benefits of administration of a well designed screening tool include: increasing detection of PsA; helping determine the prevalence of PsA in a given population; recording clinical data for genotype-phenotype studies[11]; and tracking response to therapy. Of the 3 instruments discussed at GRAPPA, the most rigorous methods for validation have been applied to ToPAS and PASE. Both instruments possess good sensitivities for screening purposes; however, PASE has the unique ability to monitor a patient's response to therapy in addition to screening for PsA, perhaps owing to its functional component. The ToPAS questionnaire has a unique ability to record visual data through its picture format.

The GRAPPA research agenda includes further validation of 2 screening tools, one for clinical purposes and another for epidemiological purposes. The ToPAS may serve both purposes; however, it would benefit from undergoing validation in large epidemiology studies. The PASE, on the other hand, could serve as a screening tool for clinical purposes; however, it could benefit from undergoing validation in a non-tertiary care referral center, such as a community clinic.

To optimize best practices, all psoriasis patients should be screened for PsA to help prevent irreversible joint damage. Regardless of which questionnaire is used for screening, GRAPPA is best poised to continue comprehensive validation and critical feedback for all 3 tools through its multidisciplinary members and access to extensive clinical and epidemiological patient populations.

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