Toronto Psoriatic Arthritis Screening (ToPAS) Questionnaire: A Report from the GRAPPA 2009 Annual Meeting

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ABSTRACT. The Toronto Psoriatic Arthritis Screening questionnaire (ToPAS) was developed as a tool to screen for psoriatic arthritis (PsA) in patients with psoriasis as well as in the general population. Thus, it differs from PsA-specific screening tools and may be used to screen for PsA in epidemiologic and family investigations. In a presentation at the 2009 annual meeting of GRAPPA (Group for Research and Assessment of Psoriasis and Psoriatic Arthritis) in Stockholm, Sweden, the authors described the development, testing, and validation of the ToPAS tool. Results of a comparison of the ToPAS questionnaire with the Psoriatic Arthritis Screening and Evaluation (PASE) questionnaire were also presented. Modification and further validation of the ToPAS are under way. (J Rheumatol 2011; 38:546–7; doi:10.3899/jrheum.101117)

Key Indexing Terms:
PSORIATIC ARTHRITIS SCREENING QUESTIONNAIRE PSORIASIS
TORONTO PSORIATIC ARTHRITIS SCREENING QUESTIONNAIRE

In a presentation at the 2009 annual meeting of GRAPPA (Group for Research and Assessment of Psoriasis and Psoriatic Arthritis) in Stockholm, Sweden, the authors described the development, testing, and validation of the Toronto Psoriatic Arthritis Screening questionnaire (ToPAS), which was developed as a tool to screen for psoriatic arthritis (PsA) in patients with psoriasis as well as in the general population[1]. The ToPAS thus differs from other screening tools for PsA, since the other questionnaires were developed to screen for PsA specifically in patients with psoriasis. Therefore, the ToPAS may be used to screen for PsA in epidemiologic and family investigations.

The questions developed for the initial ToPAS were based on expert opinions of rheumatologists and dermatologists following their thorough review of symptoms and signs among patients with PsA. Subsequently, the questions were appropriately modified for clarity and face validity after input from other rheumatologists and epidemiologists and from patients attending a PsA clinic as well as a rheumatology clinic. A pilot questionnaire incorporating these modifications was produced and tested among patients with PsA and patients with other rheumatologic conditions. The questionnaire includes pictures of psoriasis and nail lesions and questions that focus on pain and stiffness in the joints and back. The instrument identified patients with PsA among patients with psoriasis and among a population of subjects attending a family medicine clinic. As part of a validation exercise, the final ToPAS questionnaire was then administered to patients attending 5 different clinics: PsA, psoriasis, general dermatology, general rheumatology (excluding patients with PsA), and family medicine. Consenting patients completed the ToPAS prior to a clinical evaluation by a rheumatologist.

All patients were assessed by a rheumatologist according to a standard protocol, including a complete medical history, physical examination, and routine laboratory tests, as well as rheumatoid factor and antinuclear antibody tests. Aside from patients attending the PsA clinic (where radiographs are performed according to a standard protocol), radiographs were performed only if there was a clinical suspicion of arthritis (joint or back pain or limitation of movement, or joint deformities). Based on the protocol and radiographs (where indicated), the rheumatologist diagnosed a patient with PsA if an inflammatory arthritis was noted in the presence of psoriasis. The diagnosis of PsA was confirmed by review of all the data collected and was finalized by consensus of a team of 4 rheumatologists. All 134 patients who attended the PsA clinic were confirmed to have PsA, whereas only 30 of 123 (24.4%) patients who attended the psoriasis clinic had PsA; 2 (1.7%) of 118 patients screened in the general dermatology clinic had PsA; no PsA patients were identified in 135 patients in a general rheuma-

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Dr. Chandran is supported by a Canadian Institutes of Health Research-Clinical Research Initiative Fellowship and by the Krembil Foundation.

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tology clinic (patients with PsA were excluded as they may have been included in the PsA clinic); and 3 (1.7%) of 178 patients from a family medicine clinic had PsA.

Analyses were based on 3 different logistic regression models. Receiver-operating characteristic (ROC) curves were constructed to investigate the associations between the outcome variable, PsA (yes/no), and responses to 11 ToPAS questions for the 5 different patient groups together. Results from the logistic regression analyses revealed that 3 domains were important: a skin domain included 3 questions (1A, 3, and 4A) that were valued from 0 to 3 (where 3 indicates answers of yes to all 3 questions and 0 indicates 3 answers of no); a joint domain also included 3 questions (5A, 6, 10), again valued from 0 to 3 (3 = yes to the 3 questions and 0 = 3 answers of no); and a fingernail domain included 2 questions (2A or 2B), which were valued 1 if either question was answered yes and 0 otherwise. Based on the results of the analyses from these models, a simplified discriminatory score was developed. The score was calculated as (skin domain) + (nail domain) + (2 x joint domain). The overall sensitivity and specificity based on this simplified score, and a cutpoint of 8, were 86.8% and 93.1%, respectively. ROC analysis showed that the area under the curve for this score was 0.95. The overall positive predictive value was 83%, and the negative predictive value was 94.8%. When tested in the various aforementioned patient groups, the score at a cutpoint of 8 had sensitivity ranging from 89.1% to 92.6% and a specificity of 86.3% to 100%.

The ToPAS questionnaire was compared to the Psoriatic Arthritis Screening and Evaluation (PASE) questionnaire in a recent study from The Netherlands[2]. The subjects included 83 members of the Dutch Psoriasis Society, 33 of whom were diagnosed with PsA. All subjects completed both ToPAS and PASE questionnaires. The area under the ROC curve was 0.85 (95% CI 0.76–0.93) for ToPAS and 0.75 (95% CI 0.65–0.86) for PASE. Thus, both instruments performed well and are suitable for screening for PsA; ToPAS performed slightly better.

The ToPAS questionnaire is a useful tool for screening for PsA in patients with psoriasis and in the general population. The area under the curve of 0.95 in the ROC analysis indicates that it can perform very well as a screening tool. The pictorial depiction of some of the disease features makes it appealing. Although the ToPAS includes questions about inflammatory back pain, those did not add to the sensitivity and specificity of the instrument. Recently, to develop an even more accurate screening tool, this questionnaire was modified with the addition of photographs that depict arthritic joints and dactylitis and rewording of some of the questions, particularly those related to axial disease. A formal validation of the newer version of the ToPAS (ToPAS 2) is under way.

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