Assessing Psoriasis Severity and Outcomes for Clinical Trials and Routine Clinical Practice

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KEYWORDS

• Psoriasis • Psychosocial morbidity • Quality of life • Severity assessment • Outcome measures • Self-assessment • PROM • COSMIN

KEY POINTS

- Psoriasis is a disease with the potential to be life ruining.
- To justify health expenditure on its management, it is vital to be able to show that interventions make a difference to a patient's skin disease and ability to function normally.
- With modern methods of validating health care measurement instruments, more appropriate tools are being developed for use in clinical trials and routine clinical practice.
- The place of long-established tools is examined in the light of new tools that have recently been promoted.

ASSESSMENT AND OUTCOMES

Historically, dermatologists and others looking after patients with psoriasis have tended to record response to treatment, if at all, with rather imprecise phrases such as "nearly clear," "a bit better," "slightly improved," "worse," or "flared up." This probably still holds true for the majority of consultations between psoriasis patients and health care professionals. If they have instituted a new therapy, there is almost certainly a tendency for them to write "slightly better" rather than "no change," even if there is no clear evidence of meaningful benefit: Such wishful thinking is understandable, but can lead to long delays in changing to more appropriate therapy. Furthermore, the views of the patient may either not be sought or alternatively be dismissed as insignificant. Until recently, it has been rare for formal assessments of severity to be undertaken outside the setting of clinical trials. Doctors managing hypertension would expect to get their patients' blood pressure checked on a regular basis. It should be a routine for at least some form of formal assessment of psoriasis severity and impact to be recorded on a regular basis for all patients receiving active treatment for psoriasis. The situation is slowly changing for the better, largely as a result of the cost implications of instituting expensive new agents for psoriasis and the need to demonstrate that they are producing benefit. Guidance is available from a range of specialist societies, patient organizations, and national health care bodies.[1–3]

Psoriasis is a disease with multiple dimensions, each of which can contribute in a range of different ways to its overall impact on the individual. To be

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able to demonstrate objectively that any intervention for psoriasis can successfully modify that impact, it is necessary firstly to have tools for capturing and measuring that impact meaningfully and reliably (severity assessment) and second to understand what any given changes in such assessments actually mean in terms of modifying that impact. Only then can a meaningful assessment of the outcome of that intervention be derived.

Measuring change without reference to baseline severity (eg, "worse," "no change," "better") is little different from the traditional approach used by doctors in routine practice. In a chronic condition such as psoriasis, such assessments are of limited value for charting an individual patient's long-term disease behavior, because recall of fluctuations in disease severity over time is unlikely to be reliable. Neither are they useful for evaluating outcomes across a cohort of patients with unknown and potentially widely varying initial disease severity, as in a clinical trial comparing different interventions. Severity assessment at least 2 time points is a prerequisite for adequate documentation of change and thus for assessing outcomes.

The difference between severity assessment and outcome assessment can be illustrated clearly using the best known instrument for assessing psoriasis, the Psoriasis Area and Severity Index (PASI)[4]: The PASI assesses severity whereas a 75% reduction in PASI score (PASI-75) assesses outcome. Unfortunately, the term "outcome" is all too often used indiscriminately to describe both types, particularly in relation to so-called patient-reported outcome measures (PROMs). For instance, NHS England (The UK National Health Service as it applies to England) states: "PROMs measure a patient's health status or health-related quality of life at a single point in time."[5] In similar vein, the US Food and Drug Administration states: "A PRO (patient-reported outcome) is any report of the status of a patient's health condition that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else. The outcome can be measured in absolute terms (eg, severity of a symptom, sign, or state of a disease) or as a change from a previous measure."[6] Outcome can be assessed only by examining change, whether the desired outcome be change, as in interventions to treat disease, or no change, as in interventions intended to halt disease progression.

In many fields of medicine, outcome is straightforward to assess. Where there are well understood and easily measurable risk factors for adverse health outcomes, such as hypertension or hyperglycemia, it is straightforward to define a successful outcome as a change of the parameter in question from abnormal/unacceptable to normal/acceptable. Thus, the outcomes of interventions to reduce risk of developing overt type II diabetes in individuals found to have high glycosylated hemoglobin levels (hemoglobin $A1_c \geq 6.5\%$) can be assessed by measuring whether the intervention has resulted in change to levels (eg, hemoglobin $A1_c \leq 6.0\%$) known to confer a lower risk.[7]

With many inflammatory or mental health conditions, however, it is not possible to assess change with such simple means. In disorders such as psoriasis and arthritis, there is a complex interplay between the externally apparent manifestations of the disease, the symptoms experienced by the patient, and the gamut of possible further physical, social, and psychological consequences of them. Furthermore, the latter are not necessarily directly related to the objective severity of the condition. The medical profession has been rather slow to recognize this complexity, but over the past 20 years significant progress has been made. In fact, the new discipline of clinimetrics has grown up around developing and validating disease severity assessments and outcome measures. This topic is well reviewed by Fava and colleagues.[8]

PSORIASIS ASSESSMENT TOOLS: A HISTORICAL PERSPECTIVE

For the current generation of dermatologists brought up to consider randomized, controlled trials as the norm for investigating new therapies for skin disease, it is instructive to look back a few decades. Until the advent of potent topical corticosteroids in the late 1950s, very few comparative trials in the field of psoriasis were conducted. The mainstays of treatment up until then had been tar, anthralin (dithranol), and broadband UVB phototherapy. At that time, there was no accepted methodology for performing clinical trials in inflammatory skin disease. Systemic therapy was largely limited to arsenic: Methotrexate was first investigated for treating psoriasis in the 1950s, but it was not until 2003 that this use of the drug was subjected to a randomized, controlled trial.[9]

A study selected at random from among the small number of formal psoriasis trials conducted in the 1960s exemplifies how much has changed.[10] It is clear that the investigators thought carefully how to design their study comparing 2 topical corticosteroid preparations with topical tar. Looked at from our perspective, however, it seems crude, with small patient numbers entered into an unblinded, unrandomized within-patient,