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REVIEW

Treat-to-target in PsA: methods and necessity

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ABSTRACT

With increasing recognition of the high burden and impact of psoriatic arthritis (PsA) and the growing number of therapeutic options, there has been an intensifying focus on treatment strategy in recent years. In 2015, the Tight Control of Psoriatic Arthritis study confirmed the clinical benefit of using a treat-to-target approach in PsA. This randomised controlled trial found benefits in both arthritis and psoriasis disease activity as well as lower disease impact reported by patients, although participants allocated to tight control experienced a higher rate of serious adverse events. European and international recommendations support the use of a treat-to-target approach in PsA and have offered specific advice on how to do this using outcomes such as the minimal disease activity criteria. However, implementation of this approach in routine practice is low, with real-world data highlighting undertreatment as a result. Recent qualitative work with physicians in the UK has helped researchers to understand the barriers to implementation of treat-to-target in PsA. We now need to address these barriers, provide education and support to non-specialist clinicians in routine practice, and aid the translation of optimal care to the clinic.

Key messages

What is already known about this subject?

- Use of a treat to target approach in the management of PsA can improve outcomes and is recommended internationally
- Routine implementation of a treat to target approach in PsA in most clinical settings is low

What does this study add?

- This review summarises the perceived barriers to implementation of a treat-to-target approach in PsA and identifies methodologies from implementation science that could be employed to change practice.

How might this impact on clinical practice?

- Identification of perceived barriers by treating clinicians will allow novel interventions to support a treat-to-target approach in PsA and change routine practice.

TREATING TO TARGET IN PSA

Psoriatic arthritis (PsA) is a form of inflammatory arthritis affecting up to 30% of those with psoriasis. It is the second most common form of inflammatory arthritis presenting to early arthritis clinics and accounts for around 20% of referrals. It has a considerable impact on patients' functional capacity and quality of life,[1] with two-thirds of those affected suffering progressive joint damage with associated disability.[2 3] PsA is also associated with a reduced life expectancy[4] that is related to associated comorbidities, particularly metabolic syndrome.[5]

With the recognition of high disease burden and impact in PsA, the focus has been on therapeutic options and treatment strategies to optimise care. As such, in the last decade, there has been an increase in the number of drugs approved for use in PsA, but there is limited evidence to guide the treatment strategy. In rheumatoid arthritis (RA), the standard of care for over a decade has been to use a treat-to-target approach. This approach came initially from management of hypertension and diabetes, where improved outcomes were achieved through a treat-to-target strategy using regular review and escalation of therapy according to a prespecified objective target.[6 7] In RA, this was first tested in the Tight Control of Rheumatoid Arthritis study published in 2004[8] and several studies have subsequently confirmed these findings, and across Europe it is considered the standard of care in RA.[9] In rheumatology, treat-to-target is considered an approach across clinical teams, with all clinicians including rheumatologists, trainees and allied health professionals such as specialist nurses able to implement the approach while caring for individuals with arthritis.

Following this lead, research in PsA has also addressed the treat-to-target concept. Minimal disease activity (MDA) criteria were developed using expert opinion on patient profiles and encompass disease activity measures across multiple disease domains

Box 1 Minimal disease activity (MDA) criteria for psoriatic arthritis

The seven-component MDA criteria define a state of MDA if a patient meets five of the seven criteria[10]:

- Tender joint count ≤1.
- Swollen joint count ≤1.
- Psoriasis Area and Severity Index ≤1 or body surface area ≤3.
- Patient Pain Visual Analogue Score ≤15.
- Patient Global Disease Activity ≤20.
- Health Assessment Questionnaire ≤0.5.
- Tender entheseal points ≤1.

(box 1).[10] The MDA criteria have been shown to have prognostic value in terms of quality of life,[11] radiographic damage[11–13] and work stability,[11] and correspond highly with a level of symptoms that is acceptable to patients.[14 15]

Using the MDA criteria, the Tight Control of Psoriatic Arthritis (TICOPA) trial was the first to demonstrate improved clinical and patient-reported outcomes, with a 'treat to target' approach in PsA consisting of a 4-weekly treat-to-target review. The primary outcome was the proportion of patients achieving an American College of Rheumatology 20% (ACR20) response at week 48. The odds of achieving ACR20 (OR 1.91, p=0.0392), as well as ACR50, ACR70 and psoriasis area and severity index 75 (PASI75), were significantly higher in the tight control group. Improvements in patient-reported outcomes, such as physical function (measured by the Health Assessment Questionnaire) and quality of life (measured by the PsA quality of life (PsAQOL)), were seen with tight control, although an increased rate of adverse events and serious adverse events was also noted in this group. This may be secondary to the use of combination therapies and rapid treatment escalation, or may partly reflect reporting bias from an unblinded trial due to more frequent clinical reviews.[16] The results of this study led to the 2015 EULAR treatment recommendations for PsA incorporating as its first recommendation that 'treatment should be aimed at reaching the target of remission or, alternatively, minimal/low disease activity, by regular monitoring and appropriate adjustment of therapy'.[17] However, to date the TICOPA trial is the only study directly comparing a treat-to-target approach with standard care in PsA, and further evidence would be beneficial.

In addition to MDA, a number of other potential 'targets' have been identified. Definitions of remission and low disease activity have been proposed for additional disease activity measures, including the Disease Activity in Psoriatic Arthritis (DAPSA) score,[18] Psoriatic Arthritis Disease Activity Score (PASDAS)[19] and the Composite Psoriatic Disease Activity Index (CPDAI).[19] The DAPSA focuses on peripheral arthritis, while the PASDAS and CPDAI reflect disease activity in multiple domains similar to MDA. Achievement of these remission/low disease activity states has been shown to be associated with improved outcomes in terms of quality of life and radiographic progression.[20 21]

As yet, there is no international consensus on the optimal measure to use in a treat-to-target strategy, but only MDA has been tested in a treat-to-target strategy trial. In 2017, international recommendations that focused specifically on treat-to-target in spondyloarthritis (including PsA) were published. These were underpinned by a systematic literature review that included the TICOPA data. These recommendations confirm that treatment should be aimed at remission or alternatively minimal/low disease activity and specify that MDA is an approved outcome measure to use as a target in PsA. The Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA)-OMERACT recommendations support this view and favoured MDA over DAPSA as it reflected psoriasis and enthesitis in addition to peripheral joint disease.[22]

Unfortunately, despite this change in international treatment recommendations, a treat-to-target approach has not been translated into routine clinical practice.[23] An international survey in 2017 found that only 45% of healthcare professionals reported that they regularly use a composite measure required for treat-to-target in their practice, most commonly the MDA criteria or the Routine Assessment of Patient Index Data-3.[22] This survey was distributed to members of the GRAPPA and therefore represents views of rheumatologists and other clinicians with a specialist interest in PsA. It should be expected that uptake of treat-to-target in routine practice could be even lower. A small UK-based survey in 2015 previously found that only around 10% of clinicians reported using a treat-to-target approach in PsA (LC Coates, unpublished data).

To date, there has been relatively little focus on the implementation of treat-to-target in PsA apart from inclusion in treatment recommendations. There have been some local educational initiatives to encourage clinicians to consider a treat-to-target approach and practical training on how to assess these outcomes, but they are not widespread. In contrast to RA,[24] we are not aware of any national guidelines, such as those from the National Institute for Health and Care Excellence in the UK, that have recommended the use of a treat-to-target approach, so it may not have become a priority.

This failure of translation from trial results to implementation in clinical practice is preventing optimal care of people with PsA in many centres. Observational studies have provided insight into the discrepancy between clinician opinion and objective measurement of a target. A study in the Netherlands found that two-thirds of patients whom the clinician felt were in an acceptable disease state did fulfil the MDA criteria, suggesting reasonable disease control when assessments were subsequently performed. The remaining one-third (88 of 250) of patients did not fulfil the MDA criteria, but the clinician reviewing them did not suggest an escalation in treatment. In the majority of cases, this discordance was driven by a high number

of tender joints, and high pain and patient global scores (83%, 82% and 80%, respectively), which may not always reflect disease activity. However, a significant proportion of these patients also had objective disease activity evidenced by swollen joints (35%), enthesitis (14%) and skin psoriasis (43%),[25] suggesting that non-clinical factors might also have a role in supporting the uptake of a treat-to-target approach.

Even in consultations where clinicians identify ongoing active disease, this does not often trigger a treatment change. In a second Dutch observational study, 63% (90 of 142) of patients were considered to have active disease, but a treatment change was only instituted in 23% (21 of 90). The most common reason for this was that either that the clinician felt that the residual disease was not substantial enough to justify treatment adjustment or that the patient did not wish to adjust treatment. However, when subsequent assessments were performed, patients without treatment adjustment had similar levels of disease activity, such as joint counts and patient scores, to those receiving treatment escalation. This suggests that more formal assessments of disease activity may identify active disease than is otherwise unappreciated in some routine consultations.[26] There has been little research on patients' opinions on a treat-to-target approach, and no research to date on whether educating patients about a treat-to-target approach may result in a change in their views about treatment escalation. While following a treat-to-target approach does not remove a treatment and management plan that is tailored to the individual, these data highlight the potential undertreatment of patients in routine practice when treat-to-target is not followed.

IMPLEMENTATION SCIENCE

Implementation research was initially conceived to address the poor uptake of effective interventions, and thereby improve the quality and effectiveness of health services.[27] Examples of implementation interventions include theory-informed interventions to support change in healthcare organisations, the behaviour of healthcare professionals or the use of health services by healthcare recipients.[28] Effective interventions have been identified to support the implementation of the treat-to-target approach; for example, the Treat to target in RA: Collaboration To Improve adOption and adhereNce (TRACTION) cluster randomised trial[29] generated evidence of the effectiveness of a learning collaborative to train clinicians in using treat-to-target to guide treatment decisions in RA. In this study, the learning collaborative was established with an initial 1-day meeting with education around treat-to-target in RA, followed by a workshop focused on activities planned by the study teams within a change package for treat-to-target implementation. Ideas for plan–do–study–act (PDSA) cycles were presented to the teams, and then within workshops study teams identified the cycles that they wanted to test locally. The PDSA cycles link to tests of change, in these four stages, performed as part of a quality improvement process.[30]

This study randomised 11 centres to receive the learning collaborative either in phase 1 of the study (0–9 months) or in phase 2 (9–18 months). At baseline the treat-to-target implementation score was 11% in both arms. At the end of phase 1, the primary outcome of the study showed an increase in the treat-to-target implementation score of 46% in group 1 (receiving the intervention) compared with 14% in group 2 (the control group) (p=0.004).[31] The inclusion of a second phase allowed further assessment of the intervention when it was repeated for group 2, where success was hypothesised to be higher due to increased experience of the study team and sharing of phase 1 experiences. However, this was not confirmed and the phase 2 showed similar improvements in treat-to-target implementation scores. This second phase also allowed assessment of the ongoing maintenance of a treat-to-target approach in group 1. Although implementation scores dropped slightly (from 57% to 52%), maintenance of the approach was still impressive compared with baseline levels.[32]

INTERVENTIONS IDENTIFIED TO SUPPORT TREAT-TO-TARGET

Clearly treat-to-target in PsA requires similar support to translate the approach into routine clinical practice. The first step in this process is to identify key barriers to implementation. A qualitative study in the UK has recently attempted to address this by conducting individual interviews and focus groups with clinicians caring for patients with PsA. Key barriers identified were complexity of the disease and interventions, and reluctance to change practice due to organisational factors.[33] The complexity theme included three aspects:

- 'PsA vs RA': compared with treat-to-target in RA, application in PsA is seen as underfunded and more complex to implement given the heterogeneity of the condition and the number of disease domains that require treatment.
- 'Measurement': the perceived challenges of agreeing on the measures to be used and the processes for data collection and storage.
- 'Resources': team needs, including training to use and interpret measures, and organisational support, including PsA-specific clinics.

Thus, it seems that to enable implementation, multiple factors need to be addressed. Education of clinicians caring for patients with PsA on the need for treat-to-target and the assessment of disease activity in PsA will address some of these barriers. In particular within the focus group, rheumatology trainees raised the issue of training around assessment and treatment advice for psoriasis where they felt that they lacked confidence. However, a significant gap in implementation relates to the process of care, both engagement and organisational factors, not just a lack of education. Developing practical clinical protocols, sharing successful approaches and

learning from others' experiences may also be beneficial in improving implementation. Feedback with regular audit within practices may also support implementation, allowing clinicians to evaluate strategies and share best practice. This approach was used within the learning collaborative in the TRACTION study in RA with great success.

In terms of health service organisation, it is possible that specialist PsA clinics might be advantageous. These allow the clinicians to develop expertise, focus on PsA-specific measures and give a practical advantage where clinic support staff can more easily ask patients to complete questionnaires. In other rheumatological conditions, dedicated clinics for complex disease have been shown to not only facilitate systematic clinical assessments but also to result in higher quality of care.[34] This approach might be cost-neutral for healthcare services, if using the same staff and appointment templates as seeing patients with PsA among those with a variety of different musculoskeletal conditions within a 'general rheumatology' clinic. However, we recognise that this approach might not be possible in smaller centres or in centres without a clinician with a specialist interest in PsA, where additional logistical help may be able to support implementation.

Many clinicians raised concerns about the resources required to implement the treat-to-target approach routinely. In limited duration routine appointments, typically lasting 15–20 min, clinicians find it challenging to collect and administer the appropriate disease activity measures, calculate the MDA components and record the data appropriately. In situations where routine appointments are even shorter, the pressures are greater. Given the increasing availability of electronic patient records and information technology (IT) systems in hospital clinics, it seems likely that an IT solution may be able to help and make this more efficient. Several electronic patient record systems internationally, such as Epic and Cerner, provide the opportunity for patients to complete information, including the patient-reported outcomes required for treat-to-target, either remotely prior to their appointment or within the clinic via app, email or touchscreen. These systems can also calculate scores required for the outcomes to aid the assessment of the MDA criteria.

Although not identified in the study of clinicians' views, support from patients will also be crucial. Providing patients with information about treat-to-target and the opportunity to discuss the options with their team can enable them to participate in treatment decisions and could increase their engagement with the process, including completing the patient-reported outcomes. It may also aid implementation by changing the expectation of the patient when they see their clinicians.

NEXT STEPS

Given the promising evidence of improved health outcomes for people with PsA from treat-to-target in the TICOPA trial, and the low uptake of this approach in clinical practice, further research on how to effectively implement treat-to-target has the potential to increase the number of people with PsA who will benefit. As TICOPA is the only study to directly assess a treat-to-target approach in PsA, further studies addressing this strategy would also be beneficial. Studies that identify the barriers experienced by clinicians to implementing treat-to-target in PsA will provide evidence to guide the design of theory-based interventions that will support the implementation of this approach in practice. Evidence from the TRACTION study in RA indicates that such interventions can be successful and maintained beyond the initial study period.

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