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Letter to the Editor (Case report)

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Trials and tribulations in managing a complex case of psoriatic arthritis—a success story in the real world

Key message

- Collaborative working of multidisciplinary teams produces the best patient outcomes.

Dear Editor, PsA has a plethora of treatment options, with newer biologic showing promising patient-reported outcomes. However, these agents require a pre-screen for infections, including tuberculosis (TB). We share our success story in managing a difficult case with therapeutic challenges.

In 2017, a 27-year-old Caucasian male relocated from Ireland and was referred to us for the ongoing care of his well-controlled polyarticular PsA. He had psoriasis since the age of 5 years and was diagnosed with PsA in 2014. In Ireland, he developed pneumonia necessitating early discontinuation of MTX. Work-up for adalimumab identified pulmonary TB. After 6 months of standard TB treatment, he started adalimumab and by 2015 achieved tight control of both PsA and psoriasis.

Within 2 months of relocating to Nottingham, he was admitted with community-acquired pneumonia. Over the subsequent 3 months, he had multiple infections (skin, chest and urine) requiring antibiotics that led to interrupted administration of adalimumab. He then developed a temperature of 40°C, paralytic ileus and left upper quadrant pain, requiring an extensive infection screen and necessitating 31 days in the hospital. CT scan demonstrated ascites, thickened mesentery, intra-abdominal lymphadenopathy and features of widespread intra-abdominal tuberculosis. We put his adalimumab on hold and advised symptom control with non-steroidal and topical creams for his arthritis and psoriasis whilst he was an in-patient under infectious diseases. Omental biopsies confirmed granuloma. On day 42, the growth of acid-fast bacilli confirmed abdominal TB. His genome sequence confirmed multi-drug resistant tuberculosis (MDR-TB). On discharge, his care was complicated further by drug-related hepatotoxicity requiring repeated alterations in the choice of anti-TB treatment regimen. He finally tolerated the combination of ethambutol, moxifloxacin, cycloserin and pyridoxine over the subsequent 2 years.

The cumulative stress of frequent hospital admissions, interruption of adalimumab and the psychological impact related to relocation and a new job resulted in flare of psoriasis and PsA. This resulted in functional impairment affecting his quality of life and well-being. Disease activity assessment revealed tender joint count 21, swollen joint count 7, psoriasis area and severity index score of 11.4 (Table 1).

The therapeutic challenge was to choose an agent that is licensed and effective for both psoriasis and arthritis, would not reactivate TB, was not hepatotoxic and would not interact with his anti-TB medications. Despite a plethora of licensed drugs in 2018, there were few published data on the choice and safety of biologics in the setting of MDR-TB. After a multidisciplinary discussion, the patient was consented for a trial of secukinumab, which was co-prescribed at the 20th month of his TB treatment.

After only two doses of secukinumab, the patient reported a dramatic response, with '90%' improvement in skin and joint symptoms. A notable resolution was evident at week 5 (Table 1). At his recent appointment in 2021, 21 months after completion of MDR-TB treatment, he still had tight control of both skin and joints, with no features of TB reactivation.

TB is a serious public health issue. There has been an increase in TB since the use of biologics, particularly anti-TNF, even in developed countries. In Ireland, a higher incidence of TB is linked to the absence of universal infant BCG vaccination, as in our patient [1].

Although there were a plethora of treatment options for PsA and psoriasis, in 2018 there were no real-world data on the choice and safety of biologics with co-existing disseminated MDR-TB. A systematic review by Cantini *et al.* [2] supported the use of secukinumab and reported no cases of TB reactivation in a controlled trial of 1045 patients. Another publication, by Kammüller *et al.* [3], using secukinumab in subjects with moderate to severe plaque psoriasis, showed no cases of active TB. In an *in vitro* microgranuloma model, latent *Mycobacterium tuberculosis* was reactivated when infected cells were treated with adalimumab but not with secukinumab. This formed the basis for the multidisciplinary team to try secukinumab. The recent publication by Deodhar *et al.* [4] provides further support for our decision. To the best of our knowledge, this is the first case report on the successful use of secukinumab co-prescribed with anti-TB drugs in a patient with psoriasis, arthritis and co-existent disseminated MDR-TB.

Table 1 PsA response criteria

Time point	Tender joint count	Swollen joint count	Physician global score (0–5)	Patient global score (0–5)	PASI	CRP (mg/l)
Before secukinumab	21	7	5	5	11.4	7
+5 weeks	0	0	–	–	0	9
+6 months	1	0	1	3	0	10
+2 years	0	0	Telephone appointment during COVID-19			3
July 2021	0	0	0	1	0	1

COVID-19: coronavirus disease 2019; PASI: psoriasis area and severity index.

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Data availability statement

Data surrounding this case report form part of the patient's medical record held by the hospital. If there is a need to access patient-level data, a request to the Trusts Hospital Medical Records Committee will provide data in an anonymized format.

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3 Kammüller M, Tsai T-F, Griffiths CEM *et al.* Inhibition of IL-17A by secukinumab shows no evidence of increased *Mycobacterium tuberculosis* infections. Clin Transl Immunol 2017;6:e152.

4 Deodhar A, Mease PJ, McInnes IB *et al.* Long-term safety of secukinumab in patients with moderate-to-severe plaque psoriasis, psoriatic arthritis, and ankylosing spondylitis: integrated pooled clinical trial and post-marketing surveillance data. Arthritis Res Ther 2019;21:111.