Author/s:
Jerjen, R;Moodley, A;Sinclair, R

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Title page

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Authors:

Dr Rebekka Jerjen (corresponding author)

BMSc (Hons), MChD (Dist),

Affiliated with Sinclair Dermatology

Email: Rebekka.jerjen@gmail.com

ORCHID: 0000-0002-7749-1069

Dr Ameshin Moodley

MBBS, FC Derm

Affiliated with UKZN University of KwaZulu-Natal, Durban, South Africa and Sinclair Dermatology

Email: ameshinmoodley@gmail.com

Professor Rodney Sinclair

MBBS, MD, FACD

Affiliated with Sinclair Dermatology and University of Melbourne

Email: Rodney.Sinclair@sinclairdermatology.com.au

ORCID: 0000-0001-6751-1428

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DR. REBEKKA BARBARA JERJEN (Orcid ID : 0000-0002-7749-1069)

PROF. RODNEY SINCLAIR (Orcid ID : 0000-0001-6751-1428)

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Repigmentation of Acrofacial Vitiligo with Subcutaneous Tildrakizumab

Vitiligo is an autoimmune disease that affects 1% of the population.[1] Progressive loss of functional melanocytes results in disfiguring patches of depigmentation that negatively impact patients' psychosocial well-being. Current treatment options for which there is moderate-quality evidence include topical corticosteroids, topical tacrolimus and narrowband UV-B light.[1,2] There is only poor to moderate evidence for the efficacy of systemic corticosteroids in vitiligo and the role of non-steroidal anti-inflammatory agents and biologics is not established.[1,2] Interleukin (IL)-23 levels have previously been reported to be significantly higher in patients with vitiligo and positively correlate with disease activity and duration thus implicating it as a potential therapeutic target.[3] We report a case of vitiligo responsive to the humanised, anti-IL-23p19 monoclonal antibody Tildrakizumab.

A 63-year-old man presented with a three-month history of rapidly progressive vitiligo involving predominantly the acro-facial area. He had a personal history of asthma, Coeliac disease, a benign bladder tumour and mild, stable renal impairment (CKD Stage G3a). His regular medications consisted of Salbutamol and Symbicort. On physical examination he had numerous areas of hypo- and depigmentation over his face and dorsal aspect of the hands with evidence of koebnerisation. He also had some hypopigmentation on the superior aspect of the chest and back. The Vitiligo Area Scoring Index (VASI) was 7.1.

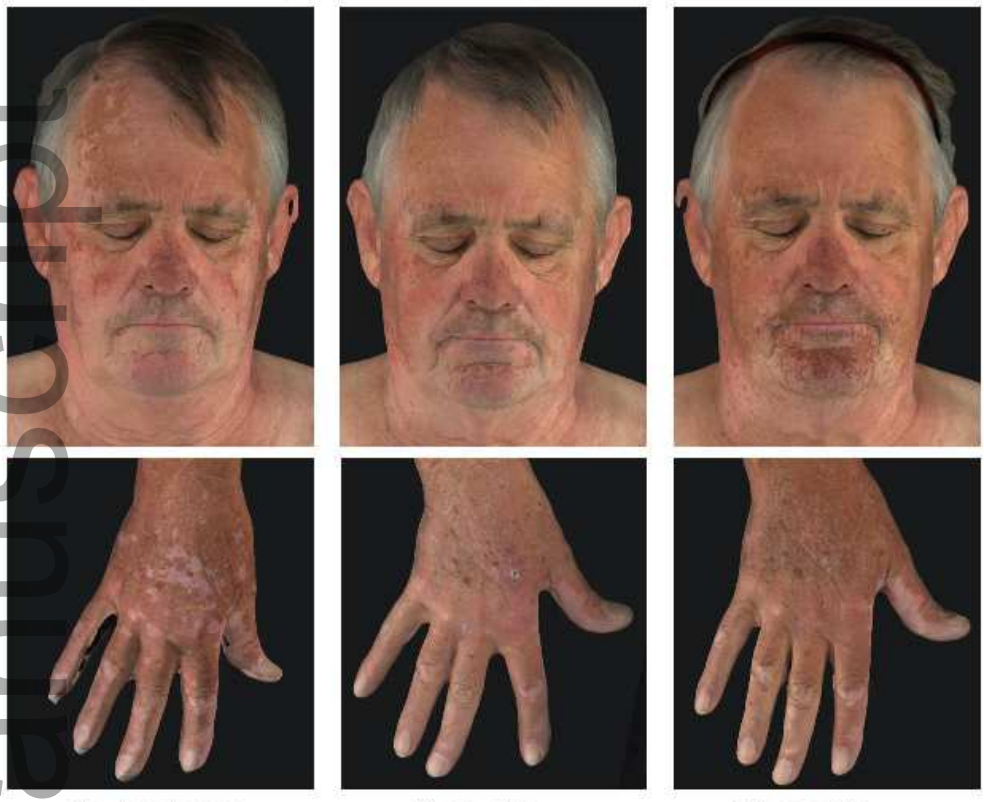
Given the rapid progression of the vitiligo, the involvement of the difficult to treat acral regions, residence in remote rural Victoria and the lack of response to topical corticosteroid therapy we considered him suitable for systemic therapy. The patient's renal impairment excluded him from participation in a registered clinical trial, so we offered him off-label use of Tildrakizumab which was accessed through special-access scheme approval from the Australian Therapeutic Goods Administration (TGA) and provided by SunPharma on a compassionate basis. Pre-treatment screening investigations, including viral hepatitis serology and Quantiferon-TB Gold, were negative.

Tildrakizumab 100mg was administered at weeks zero, four and twelve. He was advised to minimise sun exposure, apply sunscreen daily and wear a hat and protective clothing when outside. At the time of his third dose, a significant subjective and objective improvement was seen (see Figure 1). He continued to improve with subsequent doses given at three monthly intervals achieving a 55% reduction in his VASI by 12 months (90% repigmentation in affected areas). He reported an improvement in his Dermatology Quality of Life Index (DLQI) score from 9 before treatment to 4 after one year. To date the patient has experienced no adverse events and his renal function has remained stable. The ongoing response and permanence of the repigmentation will be evaluated prospectively.

Tildrakizumab is currently approved by the TGA for the treatment of chronic plaque psoriasis, however it has also shown efficacy in cases of pyoderma gangrenosum[4] and lichen planus pemphigoides.[5] Consistent wit the previously reported elevated levels of IL-23 in vitiligo, our findings support a role for IL-23 in disease pathogenesis. However, a small subset of patients using an anti-IL12/23 agent (Ustekinumab) for other disease have been reported to develop de novo vitiligo.[6] Previous reports on the use of anti-Interferon (IFN)-γ agents and anti-Tumour Necrosis Factor (TNF)- α agents in vitiligo have had varied success in a few cases.[2]

This case of rapidly progressive vitiligo responsive to Tildrakizumab implicates the IL-17/IL23 immune axis in the pathogenesis of vitiligo and the potential role of Tildrakizumab in the management of vitiligo. Further studies are warranted.

Figure 1: Facial and right hand repigmentation throughout treatment with Tildrakizumab



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