Skin Therapy Letter ©
August 2025 Supplement
EDITOR: DR. RICHARD THOMAS

Real World Canadian Case Series: Use of Tildrakizumab for Moderate-to-Severe Psoriasis

Kyle Cullingham MD, FRCPC [1]; Parbeer Grewal MD, FRCPC, FAAD[2]; Sophie Guénin MD, MSc[3]; Phillipe Lefrancois MD, PhD, FRCPC[4]; Maxwell Sauder MD, FRCPC, DABD[5]; Charles Lynde MD, FRCPC, DABD, FCDA[6]

[1]Department of Dermatology, University of Saskatchewan, Dermatology Center, Saskatoon, SK, Canada
[2]Department of Medicine, University of Alberta, Edmonton, Dermatology and Aesthetics, Edmonton, AB, Canada
[3]Mount Sinai Dermatology, New York, NY, USA
[4]Department of Dermatology, McGill University, Montreal, QC, Canada
[5]Department of Medicine, University of Toronto, Toronto, ON, Canada
[6]Department of Medicine, University of Toronto, Toronto, ON, Lynderm Research, Markham, ON, Canada

Funding: An unrestricted educational grant from SunPharma Canada supported the real-world case series. All authors contributed to the cases and development of the manuscript, reviewed it, and agreed with its content and publication.

ABSTRACT

Introduction: Psoriasis vulgaris, or plaque psoriasis, is a chronic systemic inflammatory disease characterized by scaly, erythematous plaques. It is associated with comorbidities such as cardiovascular disease, metabolic syndrome, depression, and anxiety, significantly affecting patients' quality of life. Tildrakizumab, an IL-23 inhibitor, is approved for treating adults with moderate-to-severe plaque psoriasis.

Objectives: This real-world case series aims to illustrate diverse cases of moderate-to-severe psoriasis to highlight the clinical use of tildrakizumab by expert dermatologists. It seeks to answer: (1) How are experienced specialists utilizing tildrakizumab? (2) What are the patient outcomes on this injection regimen?

Methods: Expert dermatologists from four Canadian provinces (Saskatchewan, Alberta, Quebec, Ontario) contributed two patient cases each, ensuring diverse clinical settings and patient populations. Cases included the specialists' clinical reasoning and patient outcomes at weeks 0, 4, 8, 12, and 16 post-tildrakizumab initiation.

Results: Seven real-world cases demonstrated the effective use of tildrakizumab in Canadian patients with psoriasis, including those with metabolic syndrome, psoriatic arthritis, malignancy history, and refractory disease. All patients experienced psoriasis improvement over the treatment period without notable adverse events.

Conclusions: Experts agreed that tildrakizumab is a safe, effective, and convenient treatment for psoriasis in Canada. Patients were highly satisfied with their outcomes and the therapy's ease of use. These real-world cases provide valuable guidance for selecting tildrakizumab candidates seeking effective treatment with infrequent dosing suitable for various age groups, comorbidities, and busy lifestyles.

Key words: psoriasis, real-world cases, IL-23 inhibitor, tildrakizumab

Introduction

Psoriasis is a systemic inflammatory disease with a heterogeneous skin presentation, affecting approximately 125 million people worldwide. [1] Psoriasis vulgaris, the most common variant, accounts for approximately 85% of psoriasis cases in Canadians.[2] It typically presents as red, scaly, well-demarcated plaques or patches on the skin, which may appear violaceous or hyperpigmented in darker skin types.[3] These plaques can affect the entire body but are frequently found on the scalp, face, intertriginous regions, nails, palms, and soles.[4] The disease commonly manifests in adolescence or middle age

(50–60 years) and follows a chronic course, rarely improving without treatment.[1]

The etiology of psoriasis involves genetic, environmental, infectious, and lifestyle factors that contribute to the overactivation of the adaptive immune system. This leads to hyperproliferation of epidermal keratinocytes, vascular hyperplasia, and infiltration of T lymphocytes, neutrophils, and other immune mediators.[5-6] Interleukin 23 (IL-23) dysregulation has been identified as a key driver of psoriasis and autoimmune inflammation. Upon exposure to a trigger, TNF-α is released in the skin, activating dermal dendritic cells (DCs), which in turn produce IL-23. This cytokine activates Th17 cells and other inflammatory cells.[7] Activated Th17 cells release pro-inflammatory cytokines—IL-17A/F, IL-22, IL-26, IFNγ, IL-6, TNF-α, and GM-CSF—resulting in keratinocyte hyperproliferation and an amplified inflammatory response.[8] Notably, IL-23 plays a crucial role in both initiating and maintaining Th17 cell activation, IL-17 production, and the inflammatory feedback loop (Figure 1).[8]

Psoriatic arthritis (PsA), which shares a similar pathogenic mechanism, is the most prevalent comorbid condition, developing in up to 30% of psoriasis patients and potentially leading to joint destruction and lifelong disability.[9] Furthermore, nearly half of psoriasis patients have been reported to have comorbid conditions such as cardiovascular disease (CVD), metabolic syndrome (MetS), anxiety, and depression.[10] Systemic IL-23/Th17 inflammation in psoriasis has been linked to other inflammatory diseases, including CVD and MetS.[9] Elevated Th17 and IL-17 levels have been observed in atherosclerosis patients, correlating with vascular inflammation, endothelial dysfunction, and atherosclerotic plaque formation.[11-12] Additionally, IL-23 and IL-23R levels are elevated within atherosclerotic plaques, indicating a role in disease progression.[10] This corresponds with the increased incidence of myocardial infarction, ischemic heart disease, and severe vascular events in psoriasis patients.[10]

Obesity (BMI >30) has also been associated with psoriasis due to pro-inflammatory signaling from adipocytes, which contribute to disease pathogenesis via increased IL-6 and TNF-α production.[13] These cytokines also promote insulin resistance, further exacerbating MetS and CVD.[13] Given these systemic implications, effective psoriasis treatment may provide additional benefits, such as improving lipid-rich atherosclerosis and reducing non-calcified coronary plaque burden.[12]

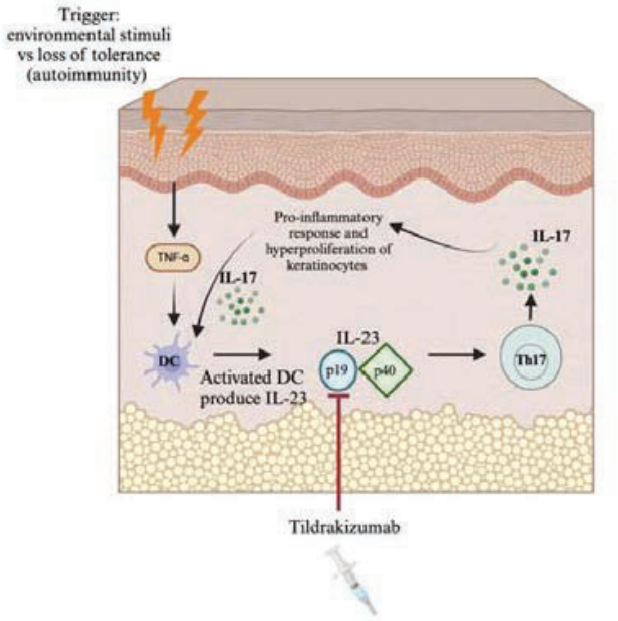


Figure 1: Psoriasis Pathogenesis via IL-23

In response to an internal or external stimuli, the skin releases TNF-α which activates dendritic cells (DC). Activated DC produce IL-23 which activates the Th17 cell population to produce IL-17. IL-17 triggers a pro-inflammatory cascade downstream which results in hyperproliferation of keratinocytes and psoriatic plaque formation. Tildrakizumab is an IL-23 inhibitor that functions by blocking the p19 subunit of the cytokine. Figure has been adapted from Chan et al. (2018) and made with biorender.com.[28]

Existing Treatments, Gaps, and Needs

Psoriasis has traditionally been managed with topical corticosteroids, but increasing recognition of its systemic nature necessitates systemic treatments. For mild psoriatic disease (3–5% body surface area [BSA]), topical corticosteroids, vitamin D3 analogs, calcineurin inhibitors, keratolytics, and phototherapy remain standard therapies.[14] In moderate (BSA 5–10%) to severe (>10% BSA) cases, systemic treatments such as methotrexate, cyclosporine, and biologics targeting TNF-α (adalimumab, infliximab), IL-17 (secukinumab, ixekizumab, brodalumab), IL-12/23 (ustekinumab) and IL-23 (guselkumab, tildrakizumab, risankizumab) are commonly used. Additionally, small-molecule Janus kinase inhibitors such as deucravacitinib (approved for psoriasis) and tofacitinib as well as upadacitinib (approved for PsA) have expanded treatment options.[15]

Despite these advances, Canadian psoriasis patients remain largely dissatisfied with current treatments. In an online survey assessing awareness and use of available therapies, only 24% of respondents reported being "very satisfied" with their current regimen.[16] Among Canadian dermatologists, key challenges in managing moderate psoriasis included treatment access, time to treatment, limited treatment choices, comorbidities, and patient acceptance.[17] Notably, topical treatments remain the predominant approach for moderate psoriasis in Canada, whereas systemic therapies (including biologics) are underutilized. This contrasts with a study of 150 U.S. dermatologists, in which approximately 50% of moderate psoriasis patients were prescribed biologics.[18]

Tildrakizumab as a Psoriasis Treatment

Tildrakizumab is a high-affinity, humanized IgG1K monoclonal antibody that selectively targets IL-23 via its p19 subunit (Figure 1). It is indicated for adults with moderate-to-severe plaque psoriasis and is administered via subcutaneous injection every 12 weeks. The pivotal reSURFACE1 and reSURFACE2 phase 3, double-blind, randomized clinical trials evaluated the efficacy of tildrakizumab (100 mg and 200 mg) compared to placebo and the TNF-α inhibitor, etanercept.[19] Patients received tildrakizumab at weeks 0, 4, and 16, while etanercept was administered twice weekly for the first four weeks and weekly thereafter. The primary endpoints included:

1. The proportion of participants achieving ≥75% improvement in the Psoriasis Area and Severity Index (PASI 75).
2. The proportion achieving a Physician's Global Assessment (PGA) score of "clear" or "minimal," with a ≥2-grade reduction from baseline at week 12.

In reSURFACE1, 59% of participants receiving tildrakizumab 200 mg, 55% receiving tildrakizumab 100 mg, 4% receiving placebo, and 48% receiving etanercept achieved a PGA 0/1 at week 12.[19] Similar results were observed in reSURFACE2. Furthermore, pooled data revealed that tildrakizumab-treated patients with or without MetS had comparable response rates, making it a viable option for this population.[19]

Long-term data confirm tildrakizumab's sustained efficacy. In the long-term extension trial, week 244 (5 years), 88.7%, 93.1%, and 114.7% of patients maintained PASI75, PASI90, and PASI100 responses, respectively.[20] Pooled phase 2 and 3 data indicate a favorable safety profile, with serious adverse events occurring in only 1.4% of tildrakizumab-treated patients versus 1.7% in the placebo group.[20-22] The most common adverse events were upper respiratory infections, injection reactions, and diarrhea.[21-22] Importantly, no increased risk was observed for cardiac disease, malignancy, suicidal ideation, inflammatory bowel disease, or demyelinating disorders.[21-22]

Real-world evidence supports tildrakizumab's effectiveness for moderate-to-severe plaque psoriasis in Canada.[24, 25] In a 75-patient retrospective study, Abu-Hilal et al. demonstrated PASI75 in 95.7% of patients by week 48, regardless of prior biologic expsoure.[24] Long-term data confirm tildrakizumab's sustained efficacy. At week 244 (5 years), 88.7%, 93.1%, and 114.7% of patients maintained PASI75, PASI90, and PASI100 responses, respectively.[20] Pooled phase 2 and 3 data indicate a favorable safety profile, with serious adverse events occurring in only 1.4% of tildrakizumab-treated patients versus 1.7% in the placebo group.[20-22] The most common adverse events were upper respiratory infections, injection reactions, and diarrhea.[21-22] Importantly, no increased risk was observed for cardiac disease, malignancy, suicidal ideation, inflammatory bowel disease, or demyelinating disorders.[21-22]

Patients in these real-world studies also saw significant improvement in nail and scalp psoriasis during tildrakizumab treatment.[24,25] Gebauer et al. conducted a multicenter, randomized, double-blind, placebo-controlled, phase 3b study which showed that tildrakizumab was effective in treatment of scalp psoriasis with 49.4% of tildrakizumab-treated patients achieving a >2 improvement in Investigator Global Assessment (IGA) score by week 12 compared to 7.3% in the placebo group.[23]

Considering psoriasis' severe impact on quality of life, Costanzo et al. evaluated tildrakizumab's effect on health-related quality of life metrics.[27] Their study revealed significant improvements in sleep, work productivity, and daily activities, with over 93% of patients expressing confidence in the treatment and an improved ability to lead a normal life.[27]

Moderate-to-severe psoriasis is a systemic disease that warrants systemic, efficacious, and safe treatments to improve patient symptoms, quality of life, and overall health. Real-world cases provide invaluable guidance for both patients and physicians. Here, we illustrate how shared decision-making, and real-world clinical experience can facilitate successful tildrakizumab therapy across diverse patient populations in Canada.

Methods

Aim of the Project

This real-world case series is designed to illustrate a variety of patients with moderate-to-severe psoriasis treated with tildrakizumab in Canada. Cases showcase leading Canadian dermatologists' real-world use of tildrakizumab, an advanced treatment for psoriasis. This series aim to answer the questions: 1) How are experienced specialist using tildrakizumab, and 2) How are their patients doing on the injection regimen? Expert dermatologists' thought-process, reasoning, and rationales are detailed in the patient cases to serve as a guide for licensed providers who treat patients with moderate-to-severe psoriasis in Canada.

Steps in the Process

The project was conducted in the following five steps: 1) project definition and expert panel selection 2) data collection and preparation of patient cases, 3) patient case discussion and selection for publication 4) literature review to support selected cases 5) drafting, review, and finalization of the manuscript.

Role of the Panel

Our expert dermatologist panel consisted of 5 dermatologists practicing in Canada with extensive experience in caring for patients with moderate-to-severe psoriasis. Dermatologists were from 4 different Canadian provinces (Saskatchewan, Alberta, Quebec, Ontario) to capture geographical and provincial differences in dermatological practice. During an advisory meeting on November 17th, 2024, in Montreal, Quebec, expert dermatologists met to report on and discuss clinical cases using tildrakizumab in their clinical practice.

The panel used the following template to gather insight through a case-based approach:

a) Initial Steps in Treatment
   i. Patient-Focused Treatment Strategies
b) Treatment Options
c) Special Considerations
d) Advantages of Tildrakizumab for these Cases

Experts were asked to select two patient cases from their clinical practice to share and discuss. In the second half of the meeting, experts examined and collaborated to select seven real-world cases for inclusion in this publication. Experts agreed that real-world cases should represent common patient presentations and comorbidities to best illustrate tildrakizumab use in a wide range of patients. The publication was prepared and reviewed by the panel.

Tildrakizumab Administration

Before initiating tildrakizumab treatment, all patients completed a 28-day washout period for any prior systemic psoriasis therapies. Tildrakizumab was administered according to the prescribing information.[21] Patients received two initial doses at weeks 0 and 4, followed by a dose at week 16 and

subsequent doses every 12 weeks. All 100 mg doses were administered subcutaneously at the patient's preferred injection site.

Experience Gathering and Psoriasis Outcome Measures

Suggested information and outcome measures to present included patient demographics, sex, weight, relevant medical history, concomitant medications, and comorbidities. In addition, patient psoriasis history was elicited by asking about the onset of psoriasis, type of psoriasis, location, and tried and failed therapies. At baseline, the patient's psoriasis was evaluated using BSA and PASI scores. In addition, dermatologists were encouraged to ask patients how their psoriasis impacted their daily activities, social life, and self-image. Patients were evaluated at week 0 (baseline), week 4, week 8, week 12, and week 16 using BSA, PASI, and patient-reported qualitative measures such as treatment satisfaction and improvement in quality of life. Any adverse reactions were recorded and reported at each visit.

Body Surface Area (BSA)

BSA is a measure of the extent of skin involvement by psoriasis. According to the Joint American Academy of Dermatology-National Psoriasis Foundation guidelines, one severity measurement of psoriasis can be based on the percentage of BSA affected: less than 3% BSA is considered mild, 3-10% BSA is considered moderate and more than 10% BSA is considered severe.[29]

Psoriasis Area Severity Index (PASI)

Another severity measurement is PASI which quantifies the extent and severity of psoriasis by accounting for intensity of redness, scaling, and plaque thickness. Scoring in each category will produce a score from 0 (no disease) to 72 (maximal disease severity).[29]

Results

Selected Real-World Cases

The expert dermatologists selected seven cases to demonstrate the real-world use of tildrakizumab in a diverse group of patients with varying skin concerns, past treatment failures, severity, and comorbidities (Table 1).

Case 1. Use of Tildrakizumab in Previous Secukinumab Failure

A 34-year-old male, Fitzpatrick Skin Types (FST) IV, presented with severe plaque psoriasis involving his hands, legs, and arms. At baseline, he had a BSA of 12% and PASI score of 13.3. He had been diagnosed 3 years prior and had previously tried topical corticosteroids, methotrexate, phototherapy, and secukinumab, but his psoriasis persisted. The patient was also overweight and had psoriatic arthritis for which he took hydroxychloroquine and ibuprofen. He reported feeling self-conscious about his skin and stated that the itching affected his sleep. He avoided participating in sports due to fear of exposing his skin in public. The patient received his first dose of 100mg tildrakizumab. At week 4, he returned for his second 100mg loading dose but had not seen any improvement in his psoriasis (BSA 13%, PASI 15.6). By week 8, he noticed a reduction in plaque redness, though his BSA remained unchanged (BSA 13%, PASI 9.6). No further improvement was seen at week 12. The patient felt his condition had slightly improved and reported no discomfort or adverse events in the first 3 months of treatment. By week 16, he showed significant improvement with noticeable reductions in plaque redness, scaling, and thickness (BSA 3%, PASI 1.8) (Figure 2). The patient strongly agreed that his condition had improved and was satisfied with the treatment. Additionally, his psoriatic arthritis remained stable while on tildrakizumab, and he maintained his hydroxychloroquine regimen, despite the potential to exacerbate psoriasis, without any reported adverse effects.

Case 2. Biologic-Naïve Patient with Long-Standing, Severe Psoriasis

A 50-year-old female, FST III, presented with long-standing severe psoriasis. Diagnosed at age 14, she had previously tried topical corticosteroids, calcineurin inhibitors, vitamin D analogs, acitretin, and methotrexate without significant or lasting improvement. At presentation, her BSA was 40% and her PASI score was 16, with plaques affecting her torso, nails, and scalp. She avoided social activities, carefully selected clothes to hide her skin, and became less intimate with her husband due to embarrassment. The patient had developed depression due to her inability to live normally with her condition. She was started on tildrakizumab as a first-line biologic. At her week 4 visit, she reported modest improvement in plaque thickness and scaliness, with a 10% reduction in BSA (BSA 30%, PASI 12). Improvement continued at week 8 (BSA 20%, PASI 9) and week 12 (BSA 6%, PASI 4). By week 16, she had seen significant improvement with a BSA of 2% and PASI of 2 (Figure 3). She experienced no adverse events and tolerated the treatment without issues. The patient felt much more confident in her skin and was very satisfied with the therapy.

Case 3. Breast Cancer Survivor with Chronic, Lifelong Psoriasis

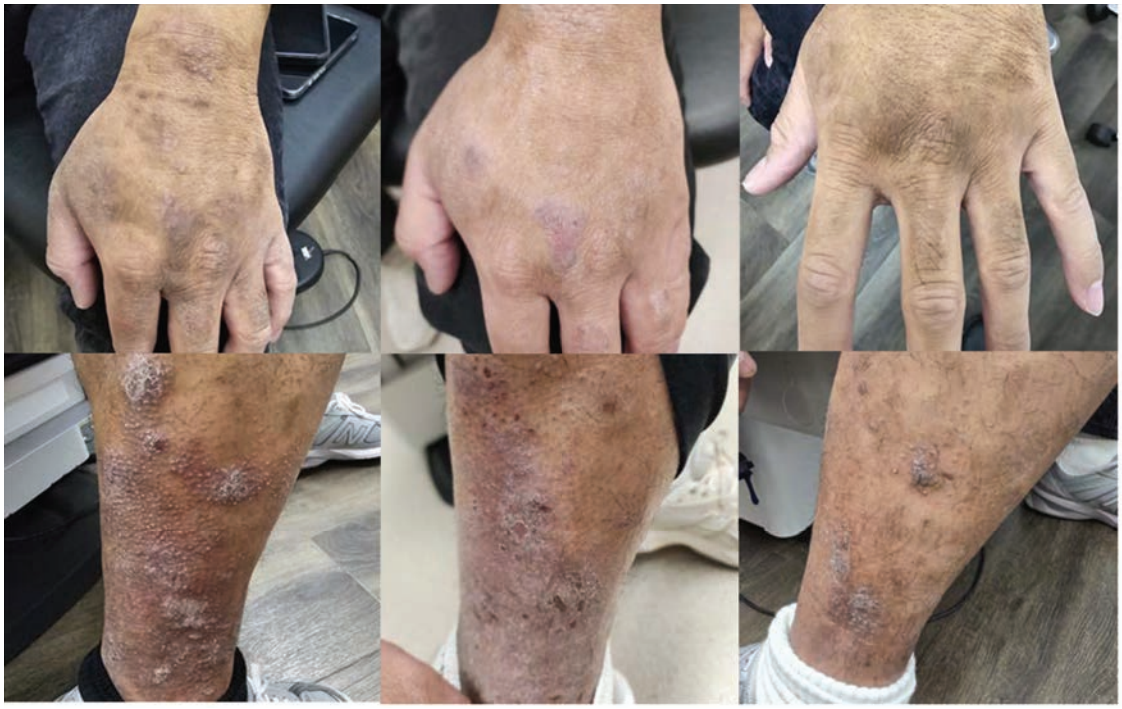
A 66-year-old overweight female, FST II, presented with lifelong psoriasis affecting her back and torso. She had suffered from psoriasis since her teenage years and had never achieved reliable control with any therapy. Previously, she had tried methotrexate, apremilast, phototherapy, topical corticosteroids, vitamin D analogs, and topical roflumilast. Additionally, the patient was a two-time breast cancer survivor, currently in remission for the past 10 years. She was apprehensive about starting systemic medications that might jeopardize her cancer remission, but she also felt very self-conscious about her skin and wanted to treat her psoriasis. Given tildrakizumab's favorable safety profile, her dermatologist suggested trying the therapy. At baseline, the patient had a 10% BSA with a PASI score of 10.4. At week 4, she returned for her second loading dose and showed mild improvement, with a BSA of 8.5% and PASI of 8.4. Further improvement was noted by week 8 (BSA 2.5%, PASI 2) (Figure 4). At this time, she developed generalized pruritus, likely due to concomitant rosuvastatin use. The itching subsided after discontinuing rosuvastatin. The patient tolerated the treatment without any further adverse effects.

Case 4. Suboptimal Results with Tildrakizumab after Etanercept (TNF-α) Failure

A 65-year-old male presents to the clinic with refractory psoriasis. The patient has suffered from psoriasis for more than

Case	Patient Demographics/ Comorbidities	Outcome	Adverse Events	Key Learning Points
1	34M, FST IV PsA, Overweight Concomitant use of hydroxychloroquine for PsA	Baseline: BSA 12%, PASI 13.3 Week 16: BSA 3%, PASI 1.8	None	Tildrakizumab can be used in prior IL-17 failures and in patients with PsA
2	50F, FST III Anxiety, HTN Concomitant use of verapamil	Baseline: BSA 40%, PASI 13.3 Week 16: BSA 2%, PASI 2	None	High impact on quality of life with dramatic improvement in anxiety/ depression Rapid onset of action for some individuals Used as first-line biologic in biologic-naïve patient
3	66F, FST II Breast Cancer History	Baseline: BSA 10%, PASI 10.5 Week 8: BSA 2.5%, PASI 2	None	Safe for use in patients with a cancer history
4	65M, FST III Concomitant Treatment with Beta-Blocker and NSAID for PsA	Baseline: BSA 14%, PASI 15.0 Week 16: BSA 3%, PASI 3.6	None	Example of suboptimal results in a patient who had failed etanercept
5	35M, FST IV	Baseline: BSA 55%, PASI 29.8 Week 16: BSA 0%, PASI 0	None	Safe and effective alternative to cyclosporine Prior failures of numerous treatments including adalimumab Significant improvement within initiation period
6	69M, FST II History of Prostate Cancer and Non-Hodgkin's Lymphoma	Baseline: BSA 15%, PASI 14.5 Week 16: BSA 1%, PASI 1	None	Safe and effective in patients with history of lymphoma and prostate cancer
7	47F, FST II Active Smoker	Baseline: BSA 26%, PASI 25.8 Week 16: BSA 14%, PASI 8	None	Slow onset; however effective in biologic-naïve patient

Table 1: Summary of Real-World Patient Cases



Week 0 Week 4 Week 16

Figure 2: Case 1.
34-year-old male with severe psoriasis and psoriatic arthritis

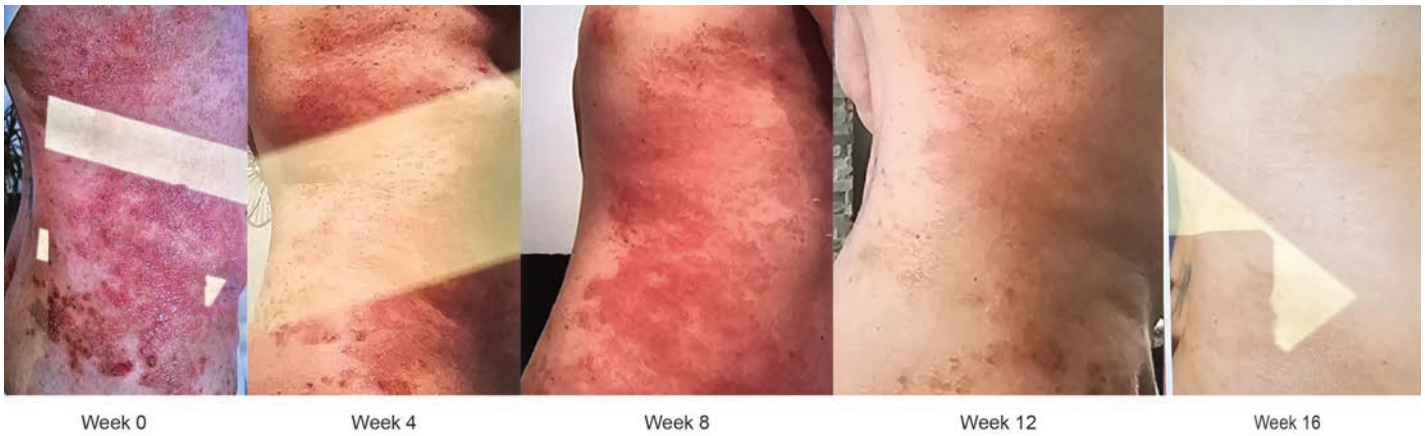
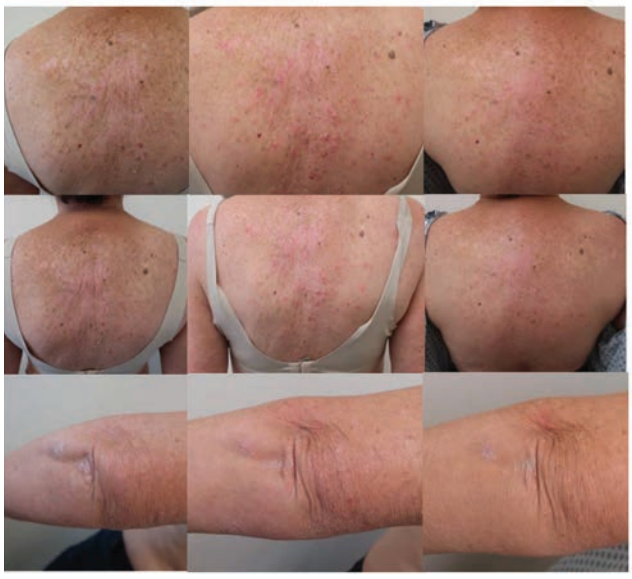


Figure 3: Clinical Pearls from Expert Canadian Dermatologists



Week 0 Week 4 Week 8

Figure 4: Case 3.
66-year-old female with moderate psoriasis and breast cancer history

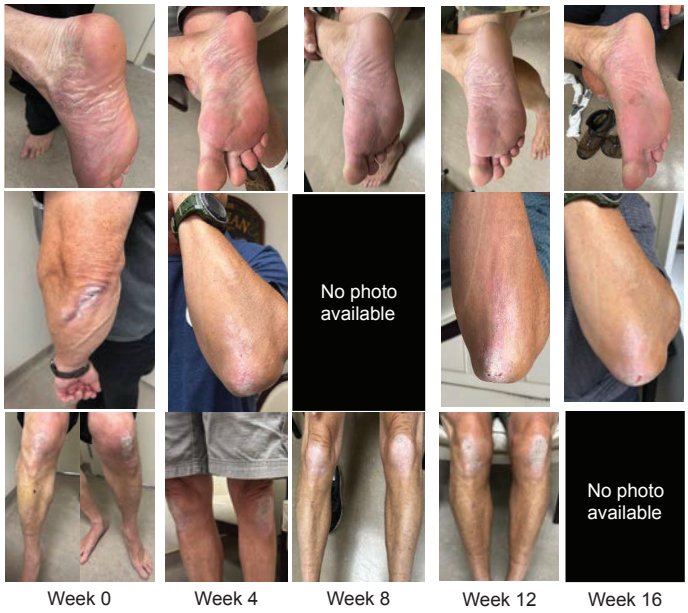
30 years and had tried topical corticosteroids, tar, and vitamin D analogs as well as systemic etanercept. Topical treatments had provided some relief, but he had been on etanercept since 2004. In 2024, his psoriasis flared despite ongoing therapy. At that time, he had started a beta-blocker, bisoprolol and had been taking naproxen for PsA joint pain. Beta-blockers such as bisoprolol and non-steroidal anti-inflammatory drugs (NSAIDs) such as naproxen, have been associated with increased risk of psoriasis and psoriasis flares.[30, 31] The patient felt severely impacted by his psoriasis, which caused skin pain that affected his work, sleep, and daily activities. At his baseline visit, his BSA was 14%, and his PASI score was 15, with primarily extensor surface involvement and foot/sole involvement. He was started on tildrakizumab. At week 4, his BSA decreased to 9%, and his PASI score was 6.4. Despite mild improvement, the patient felt his condition was not improving and was dissatisfied with the effects of the first dose. He also developed cracks on his fingers that made holding objects uncomfortable. By week 8, the patient experienced significant improvement, with a BSA of 1.5% and PASI of 1.8. Although still not fully satisfied with the therapy, he reported dramatic improvement in his quality of life and felt less negatively impacted by his skin. At week 12, the patient had a flare with a BSA of 7% and PASI of 6.8. However, by week 16, his psoriasis had begun to resolve, with a BSA of 3% and PASI of 3.6 (Figure 5). Overall, he acknowledged mild improvement but expressed frustration with suboptimal results and continued psoriasis flares despite ongoing treatment.

Case 5. Tildrakizumab Used as a Safe and Effective Alternative to Systemic Immunosuppression

A 35-year-old male, FST IV, presented with a 4-year history of psoriasis. He had no other medical conditions. Since diagnosis, the patient had tried methotrexate, cyclosporine, topical calcineurin inhibitors (tacrolimus), and topical corticosteroids and vitamin D analogs. While on cyclosporine, the patient was concerned about the numerous side effects associated with the medication, and the other treatments were ineffective. At baseline, the patient had severe psoriasis affecting his torso, with a BSA of 55% and a PASI score of 29.8. His skin condition had a significant impact on his social life, self-image, and daily activities. He was started on tildrakizumab. By week 4, the patient saw improvements, with a reduction in BSA to 35% and a PASI score of 3.0. Continued improvement was observed at week 8, with a BSA of 10% and PASI of 2.9. By week 12, the patient was clear of psoriasis, with a BSA and PASI of 0 (Figure 6). He was very satisfied with the treatment and did not experience any adverse effects. He maintained these results through week 16 and continues to be treated with tildrakizumab.

Case 6. Tildrakizumab Used in Biologic-Naïve Patient with History of Prostate Cancer and Non-Hodgkin's Lymphoma

A 69-year-old male, FST II, presented with long-standing plaque psoriasis. He was diagnosed about 15 years prior to presentation and had a 15% BSA and PASI score of 14.5. The psoriasis affected his feet, hands, elbows, legs and scalp. At the same time, the patient also had a history of hypertension, gastric reflux, non-Hodgkin's lymphoma, and prostate cancer for which he was taking the following medications: pantoprazole, furosemide, candesartan, aspirin, and goserelin acetate. For his psoriasis, he had tried acitretin, calcipotriene/betamethasone, and clobetasol ointment. The patient was very bothered by his current regimen of topicals as the creams and ointments often rubbed off on his sheets and clothing. In addition, he often had people asking him about his skin and being concerned about it being infectious. At this time, he was started on tildrakizumab. Four weeks later, the patient began seeing some improvement in the scaling of his plaques. While his BSA remained unchanged, he saw reduction in PASI score to 10.7. He continued to see improvement and at week 8, he had a BSA of 8% and PASI score



A)

B)

Figure 5: Case 4.
65-year-old male with severe psoriasis on A) knees, elbows, soles and B) hands

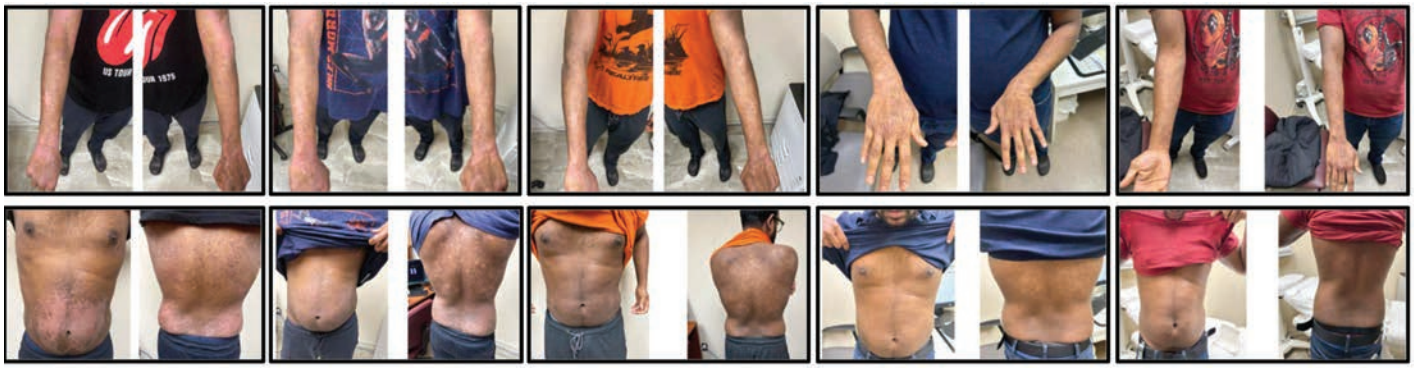


Figure 6: Case 5.
35-year-old male with severe psoriasis, previously responsive to cyclosporine

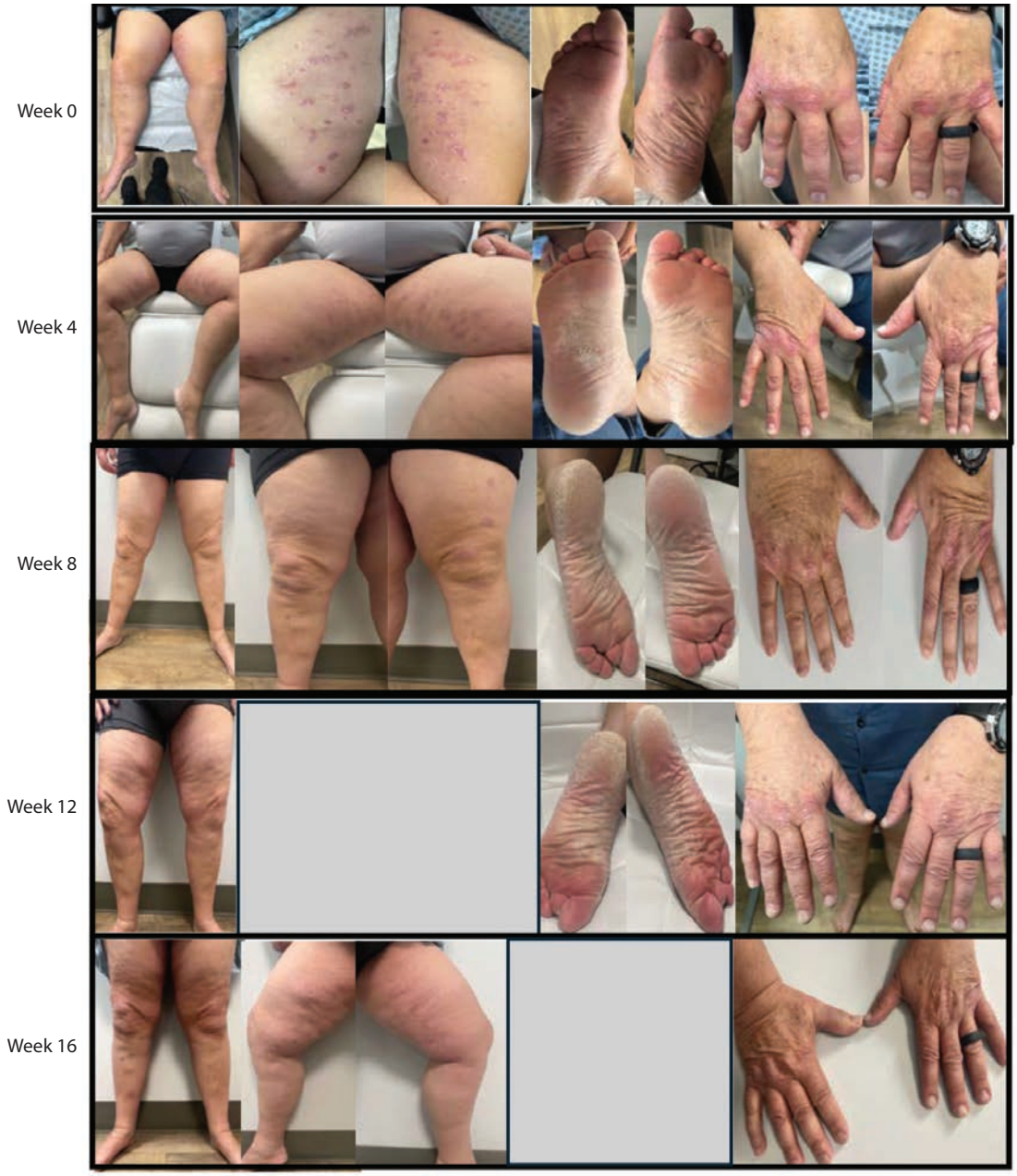


Figure 7: Case 6.
69-year-old male with severe psoriasis and history of prostate cancer and non-Hodgkin's lymphoma

of 3.6. At week 12, the patient saw a reduction in BSA to 2% and a PASI score of 2.4. He eventually achieved a PASI score of 1 and BSA 1% by week 16 of treatment (Figure 7). No adverse effects were reported during his treatment.

Case 7. Tildrakizumab Used in Active Smoker with Severe Psoriasis

A 47-year-old female, FST II, presented with severe psoriasis affecting her back, nails, feet, legs, buttocks, and scalp. She had suffered from psoriasis for the past 25 years and had tried various topicals including calcipotriene/betamethasone foam, clobetasol ointment, tazarotene cream, coal tar, UV-B phototherapy and systemic treatments such as methotrexate. She also continued to smoke tobacco products and had hypertension, attention-deficit hyperactivity disorder (ADHD), and obesity. At baseline, the patient had a BSA of 26% and PASI score of 25.8. She felt very self-conscious about her skin and never thought that it would be possible for her to have clear skin. At this time, the patient was started on tildrakizumab. By week 4, the patient saw mild improvement in her psoriasis with a reduction in scaling; however, her BSA increased to 28%. The patient continued with treatment and saw noticeable results at week 8 when she returned to the office and was found to have a BSA of 22% and PASI score of 17.4 (Figure 8). At week 12, she had a BSA of 16% and PASI score of 8.7. By week 16, she further improved to have a BSA of 14% and PASI score of 8 (Figure 8). The patient was very enthusiastic about her results and felt hopeful about continuing with the treatment.

Discussion

This real-world case discussion provides valuable insights into the use of tildrakizumab as a safe, effective, and convenient therapy for Canadian patients suffering from moderate-to-severe psoriasis. All patients presented showed significant reductions in BSA and PASI by week 8 or week 16 of treatment.

In pivotal trials, 64% and 61% of patients on tildrakizumab (100mg) achieved PASI 75 by week 12 in reSURFACE1 and reSURFACE2, respectively This mirrors results from the real world, with 6 of the 7 patient cases showing significant improvement by week 12 or earlier. In reSURFACE2, etanercept was compared to tildrakizumab and demonstrated inferior results to tildrakizumab with only 48% of the etanercept group achieving PASI 75 compared to the 61% in the tildrakizumab group. One partial tildrakizumab responder in our series failed to respond to etanercept; however, he had mild improvements in his psoriasis after starting tildrakizumab demonstrating that IL-23 blockade may be more efficacious than TNF-α inhibition in some patients. Similarly, another patient had previously failed adalimumab before trying tildrakizumab. Our real-world cases, along with multiple real-world retrospective studies also confirm tildrakizumab efficacy in special psoriasis sites such as scalp, nails, palms and soles.[23-26] Importantly, tildrakizumab was also effective in patients with multiple comorbidities and refractory psoriasis. It also proved to be an effective treatment in overweight patients with BMI>25, which is critical in that approximately a third of patients with psoriasis meet criteria for MetS.[32] Preliminary results from a recent study suggests that tildrakizumab may be effective in obesity by reducing levels of adipokines, immune modulating cytokines originating from adipocytes.[33] Taken together, tildrakizumab should be considered a first-line biologic given its efficacity in a variety of patients, psoriasis presentations, and safety profile.

Unlike many existing therapies, tildrakizumab has a highly favorable safety profile. In clinical trials, there were no serious adverse events, and the most common adverse events included upper respiratory illness and injection site reactions.[21] A pooled analysis of three randomized controlled clinical trials demonstrates that the rates of treatment-emergent adverse events (TEAE), serious TAE, and discontinuations due to adverse events were similar in both the tildrakizumab treatment and placebo group. Moreover, no reported cases of inflammatory bowel disease, candida infections or suicides were reported which are key counseling points for patients starting anti-IL-17 biologics. Additionally, no increased risk of malignancy was observed during tildrakizumab treatment. This is significant, as psoriasis increases the risk of lymphohematopoietic, head and neck, and gastrointestinal cancers, as well as non-melanoma skin cancers in patients who have previously received psoralen ultraviolet-A treatment. The increased cancer risk in this population makes carcinogenic treatments like methotrexate and cyclosporine less ideal compared to tildrakizumab.

Tildrakizumab does not harbor risks for MACE, VTE, or malignancy which makes it an appropriate first-line treatment for biologic-naïve and biologic-experienced patients.[21] It may also be especially helpful in adult patients over the age of 50 with multiple comorbidities such as existing CVD, history of stroke or previous malignancies. One expert suggested tildrakizumab to be the ideal treatment for such as patient: the 70-year-old male with complex medical history including cardiovascular and cancer history (and perhaps a current smoker) who is seeking something to relieve his psoriasis symptoms and improve his quality of life. This is supported by pooled analyses of reSURFACE1 and reSURFACE2 which demonstrates efficacy, safety, and sustained responses in patients > 65 years through 244 weeks.[35] Safe use of tildrakizumab in the elderly population makes it an invaluable treatment for a population with high prevalence of comorbidities and polypharmacy. Experts agree that the only drawback of tildrakizumab is that some patients may require multiple doses before experiencing significant effects. This delay can be frustrating for patients who are hoping for quicker skin clearance.

Despite slow onset of action, patients are generally highly satisfied with tildrakizumab treatment. In the TRIBUTE study, researchers measured tildrakizumab impact on health-related quality of life and found that patients had significant improvement in their skin as well as their sleep, work productivity, activity level, and absenteeism.[27] Tildrakizumab is also convenient, with every 12-week dosing making it suitable for patients with busy work schedules or those who live between multiple locations. In Canada, it is ideal for the "snowbird" population who leave for months at a time to escape the winter. Most other biologics are dosed every 2, 4, or 8 weeks, which may impose time constraints on certain patients and their lifestyles. Less frequent dosing reduces the healthcare burden in Canada by decreasing the number of treatment administration visits.

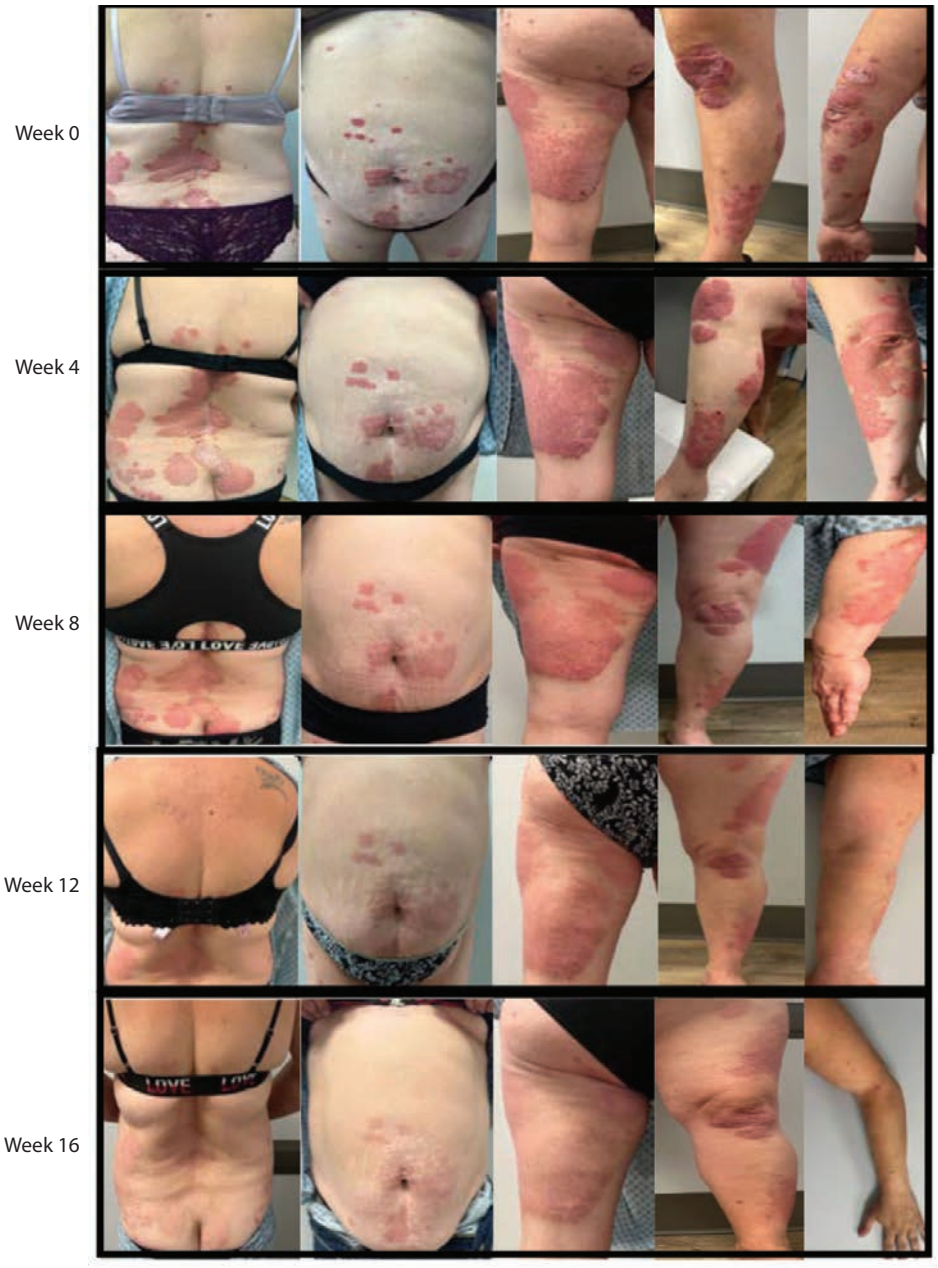


Figure 8: Case 7.
47-year-old female with obesity, active tobacco use, and severe psoriasis treated with tildrakizumab

Tildrakizumab Clinical Pearls
"Tildrakizumab is safe and durable. It may take time to achieve full efficacy, but patients tend to persist with treatment. I am comfortable prescribing it in a large oncology centre"
"Safety is important. We are comfortable with IL-23 inhibitors in general, but especially with tildrakizumab. Convenience and sustainability are also key points. The product has no red flags, it offers the whole package"
"It will never be the fastest or the most efficacious, but it is the best for certain populations: patients with metabolic issues, cancer patients, and any other patients in whom safety is the primary consideration. Look at PASI scores, real-world outcomes, and scalp studies"
"An ideal patient for tildrakizumab: 70-year-old patient with multiple comorbidities who wants to maximize quality of life"

Table 2: Clinical Pearls from Expert Canadian Dermatologists

Conclusion

The presented real-world cases reflect expert dermatologists' clinical experience with tildrakizumab in treating Canadian patients with moderate-to-severe plaque psoriasis. The collective experience of these dermatologists suggests that tildrakizumab is a safe, effective, and durable treatment for a variety of patients. Tildrakizumab is an ideal therapy for older patients with multiple comorbidities who may not be candidates for therapies with a less favorable safety profile. The onset of action with tildrakizumab may vary, with some patients responding quickly while others may only experience results after 12 or 16 weeks. No adverse effects were reported in any of the patients.

Limitations

These patient cases represent outcomes under real-world conditions in patients with differing lifestyles and environments. The reported symptoms and measures were provided by dermatologists in their clinics and represent real-world data, rather than data from a randomized clinical trial under controlled conditions. Results are only reported up to the 16-week time point, which may not capture patients who required more doses of tildrakizumab to see improvement. Furthermore, the 16-week time frame does not account for potential future psoriasis flares.

Acknowledgement

The authors acknowledge and thank Anneke Andriessen PhD, for her assistance in preparing and reviewing this manuscript.

References

1. Armstrong AW, Read C. Pathophysiology, clinical presentation, and treatment of psoriasis: a review. *JAMA*. 2020 May 19;323(19):1945-1960.
2. Levy AR, Davie AM, Brazier NC, et al. Economic burden of moderate to severe plaque psoriasis in Canada. *Int J Dermatol*. 2012 Dec;51(12):1432-40.
3. Kaufman BP, Alexis AF. Psoriasis in skin of color: insights into the epidemiology, clinical presentation, genetics, quality-of-life impact, and treatment of psoriasis in non-white racial/ethnic groups. *Am J Clin Dermatol*. 2018 Jun;19(3):405-423.
4. Dopytalska K, Sobolewski P, Błaszczak A, et al. Psoriasis in special localizations. *Reumatologia*. 2018;56(6):392-398.
5. Nestle FO, Kaplan DH, Barker J. Psoriasis. *N Engl J Med*. 2009 Jul 30;361(5):496-509.
6. Krueger JG, Bowcock A. Psoriasis pathophysiology: current concepts of pathogenesis. *Ann Rheum Dis*. 64(suppl 2), ii30-ii36.
7. Stritesky GL, Yeh N, Kaplan MH. IL-23 promotes maintenance but not commitment to the Th17 lineage. *J Immunol*. 2008 Nov 1;181(9):5948-55.
8. Girolomoni G, Strohal R, Puig L, et al. The role of IL-23 and the IL-23/TH 17 immune axis in the pathogenesis and treatment of psoriasis. *J Eur Acad Dermatol Venereol*. 2017 Oct;31(10):1616-1626.
9. Ritchlin CT, Colbert RA, Gladman DD. Psoriatic arthritis. *N Engl J Med*. 2017 May 25;376(21):2097.
10. Wu JJ, Kavanaugh A, Lebwohl MG, et al. Psoriasis and metabolic syndrome: implications for the management and treatment of psoriasis. *J Eur Acad Dermatol Venereol*. 2022 Jun;36(6):797-806.
11. Kimball AB, Guérin A, Tsaneva M, et al. Economic burden of comorbidities in patients with psoriasis is substantial. *J Eur Acad Dermatol Venereol*. 2011 Feb;25(2):157-63.
12. Guo L, Kircik L, Armstrong AW. INDIVIDUAL ARTICLE: Psoriasis and Obesity: Optimizing Pharmacologic Treatment and Lifestyle Interventions. *J Drugs Dermatol*. 2025 Jan 1;24(1):491722s4-491722s14.
13. Bagel J. Treatment strategies, management of comorbidities, and the role of IL-23 inhibitors in moderate to severe psoriasis. *Am J Manag Care*. 2021 Jun;27(10 Suppl):S203-S208.
14. Lee HJ, Kim M. Challenges and future trends in the treatment of psoriasis. *Int J Mol Sci*. 2023 Aug 28;24(17):13313.
15. Kvist-Hansen A, Hansen PR, Skov L. Systemic treatment of psoriasis with JAK inhibitors: a review. *Dermatol Ther (Heidelb)*. 2020 Feb;10(1):29-42.
16. Poulin Y, Papp KA, Wasel NR, et al. A Canadian online survey to evaluate awareness and treatment satisfaction in individuals with moderate to severe plaque psoriasis. *Int J Dermatol*. 2010 Dec;49(12):1368-75.
17. Gooderham MJ, Lynde C, Turchin I, et al. Real-world, long-term treatment patterns of commonly used biologics in Canadian patients with moderate-to-severe chronic plaque psoriasis. *J Dermatol*. 2022 Jan;49(1):95-105.
18. Knuckles MLF, Levi E, Soung J. Defining and treating moderate plaque psoriasis: a dermatologist survey. *J Dermatolog Treat*. 2018 Nov;29(7):658-663.
19. Reich K, Papp KA, Blauvelt A, et al. Tildrakizumab versus placebo or etanercept for chronic plaque psoriasis (reSURFACE 1 and reSURFACE 2): results from two randomised controlled, phase 3 trials. *Lancet*. 2017 Jul 15;390(10091):276-288.
20. Thaci D, Piaserico S, Warren RB, et al. Five-year efficacy and safety of tildrakizumab in patients with moderate-to-severe psoriasis who respond at week 28: pooled analyses of two randomized phase III clinical trials (reSURFACE 1 and reSURFACE 2). *Br J Dermatol*. 2021 Aug;185(2):323-334.
21. ILUMYA® [package insert]. Princeton, NJ: Sun Pharmaceutical Industries, Inc. https://www.ilumyapro.com/;
22. Blauvelt A, Reich K, Papp KA, et al. Safety of tildrakizumab for moderate-to-severe plaque psoriasis: pooled analysis of three randomized controlled trials. *Br J Dermatol*. 2018 Sep;179(3):615-622.
23. Gebauer K, Spelman L, Yamauchi PS, et al. Efficacy and safety of tildrakizumab for the treatment of moderate-to-severe plaque psoriasis of the scalp: a multicenter, randomized, double-blind, placebo-controlled, phase 3b study. *J Am Acad Dermatol*. 2024 Jul;91(1):91-99.
24. Abu-Hilal M, Cowger J, Bawazir M, et al. Real-World Effectiveness of Tildrakizumab for Moderate-to-Severe Plaque Psoriasis in Canada. *J Cutan Med Surg*. 2025 Mar-Apr;29(2):137-142.
25. Tsianakas A, Schwichtenberg U, Pierchalla P, et al. Real-world effectiveness and safety of tildrakizumab in long-term treatment of plaque psoriasis: results from the non-interventional, prospective, multicentre study TILOT. *J Eur Acad Dermatol Venereol*. 2023;37(1):85-92.
26. Narcisi A, Valenti M, Gargiulo L, et al. Real-life effectiveness of tildrakizumab in chronic plaque psoriasis: a 52-week multicentre retrospective study—IL PSO (Italian landscape psoriasis). *J Eur Acad Dermatol Venereol*. 2023;37(1):93-103.
27. Costanzo A, Llamas-Velasco M, Fabbrocini G, et al. Tildrakizumab improves high burden skin symptoms, impaired sleep and quality of life of moderate-to-severe plaque psoriasis patients in conditions close to clinical practice. *J Eur Acad Dermatol Venereol*. 2023;37(10):2004-2015.
28. Chan TC, Hawkes JE, Krueger JG. Interleukin 23 in the skin: role in psoriasis pathogenesis and selective interleukin 23 blockade as treatment. *Ther Adv Chronic Dis*. 2018;9(5):111-119.
29. Menter A, Cordoro KM, Davis DMR, et al. Joint American Academy of Dermatology–National Psoriasis Foundation guidelines of care for the management and treatment of psoriasis in pediatric patients. *J Am Acad Dermatol*. 2020;82(1):161-201.
30. Brauchli YB, Jick SS, Curtin F, Meier CR. Association between beta-blockers, other antihypertensive drugs and psoriasis: population-based case–control study. *Br J Dermatol*. 2008;158(6):1299-1307.
31. Fry L, Baker BS. Triggering psoriasis: the role of infections and medications. *Clin Dermatol*. 2007;25(6):606-615.
32. Langan SM, Seminara NM, Shin DB, et al. Prevalence of metabolic syndrome in patients with psoriasis: a population-based study in the United Kingdom. *J Invest Dermatol*. 2012;132(3 Pt 1):556-562.
33. Cacciapuoti S, Megna M, Salza E, Potestio L, Caiazzo G. The effect of tildrakizumab on adipokines production in patients affected by psoriasis and obesity: preliminary results from a single center real-life study. *J Dermatolog Treat*. 2024;35(1):2291323.
34. Blauvelt A, Reich K, Papp KA, et al. Safety of tildrakizumab for moderate-to-severe plaque psoriasis: pooled analysis of three randomized controlled trials. *Br J Dermatol*. 2018;179(3):615-622.
35. Elke, Van, Gaarn K, Almudena Barbero-Castillo, Elke, Satish. Efficacy and Safety of Tildrakizumab in Older Patients: Pooled Analyses of Two Randomized Phase III Clinical Trials (reSURFACE 1 and reSURFACE 2) Through 244 Weeks. *Acta dermato-venereologica*. 2023 Oct 25;103:adv17752–2.