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Research Article

The Comparative Efficacy of Secukinumab and Infliximab in the Treatment of Psoriatic Nails

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Abstract

Nail psoriasis is a disease that affects millions worldwide. Research indicates that people suffering from nail psoriasis respond well to monoclonal antibody treatment aimed at characteristic immune cell markers. By targeting immune cell markers, the immune system is subsequently suppressed in a way such that disease activity is decreased. Monoclonal antibody treatments targeted towards a variety of immune cell markers have historically been shown to result in decreases in nail psoriasis severity. Many studies have assessed disease activity with monoclonal antibody treatments, but few have compared different treatments.

A systematic review of a study that assessed the disease activity for those taking infliximab was then compared to the findings of another study which assessed the disease activity with those taking secukinumab.

The patients treated with infliximab had significantly decreased nail psoriasis severity scores when compared with other matched controls. Those who were treated with secukinumab also had significantly decreased nail psoriasis severity scores when compared with other matched controls. However, those who were treated with secukinumab had a greater reduction of disease activity as compared to control groups than did those who were treated with infliximab.

Monoclonal antibody treatments for nail psoriasis are widespread. It is critical that these treatments are compared to find those with the greatest efficacy. For this review, secukinumab seemed to have a greater reduction of disease activity than did infliximab. Further studies with greater sample sizes are needed to conclude which has greater efficacy.

Key words: nail psoriasis; secukinumab; infliximab; autoimmune disease; monoclonal antibody therapy; inflammatory skin disease

Introduction

Nail Psoriasis is associated with significant pain, impaired finger mobility and function, and loss of manual dexterity [1]. This disease feature can cause a significant negative impact on the health-related quality of life (HRQoL) [2]. Nail psoriasis is difficult to treat because nails are slow to heal, and many treatments such as topical and intralesional therapies are difficult to administer and are frequently ineffective [3].

Secukinumab is a human monoclonal antibody that selectively neutralizes interleukin-17A, a cornerstone cytokine in psoriasis, and has shown long lasting efficacy and safety in the treatment of psoriasis. Secukinumab has shown safety in the various domains of psoriasis, including nails, scalp, palms, and joints [4-6].

Infliximab is a chimeric monoclonal antibody that inhibits the actions of TNF-a for the use in cutaneous psoriasis. Data on its efficacy in treating moderate to severe psoriasis is compelling [7].

This article will compare the efficacy of Secukinumab and Infliximab in the treatment of psoriatic nails.

Methods:

For the study conducted using infliximab [8]:

A retrospective study was conducted based on the medical records of 12 patients treated with infliximab, 14 with adalimumab and 13 with etanercept in daily practice. The Nail Psoriasis Severity Index (NAPSI) was recorded at baseline, week 12, 24 and 48. The results were then compared to a control group and statistical analyses were subsequently performed.

For the study conducted using secukinumab [9]:

A double-blind, randomized, placebo-controlled, parallel-group, multicenter phase IIIb study utilized 198 patients to investigate secukinumab 150 mg and 300 mg in patients with moderate-to-severe nail psoriasis. A baseline NASPI was established for each participant. Follow-up NASPI

scores were collected at week 16 and at 2.5 years. The results were then compared to the placebo group and statistical analyses were subsequently performed.

Results:

For the study conducted using infliximab [8]:

At week 12, NAPSI was improved compared to baseline by 48.0% (range: 40.2-66.6%) with infliximab, 35.0% (range: 25.0-52.6%) with adalimumab and 41.7% (range: 39.5-46.4%) with etanercept. At week 24, NAPSI was improved by 80.4% (range: 66.6-90.2%) with infliximab, 70.2% (66.6-80.2%) with adalimumab and 76.1% (62.5-85.5%) with etanercept. At week 48, NAPSI was improved by 95.1% (range: 89.5-97.3%) with infliximab, 89.5% (75.0-94.8%) with adalimumab and 92.8% (84.3-96.0%) with etanercept. NAPSI percentage improvement was statistically significant across follow-up periods (p = 0.000) for each anti-TNF treatment, as well as among treatments at all time points (week 12, p = 0.000; week 24, p = 0.001; week 48, p = 0.000).

For the study conducted using secukinumab [9]:

At week 16, the primary endpoint Nail Psoriasis Severity Index (NAPSI) was met, demonstrating superiority of secukinumab to placebo. Those taking secukinumab 300 mg daily on average had an average improvement in NAPSI of -45.6% at week 16 while those taking secukinumab 150 mg daily had an average improvement in NAPSI of -39.6%. The effect was sustained over 2·5 years with a large benefit for nail clearance, with mean NAPSI improvement of −73·3% and −63·6% with secukinumab 300 mg and 150 mg, respectively.

Treatment Group	Improvement in NAPSI
Secukinumab 150 mg (Week 16)	-39.6%
Secukinumab 300 mg (Week 16)	-45.6%
Infliximab (Week 12)	-48.0%

Table 1: Reduction in Monthly Migraine Days for Each Treatment

The above (**Table 1**) depicts the average improvement in NAPSI that each treatment had.

Conclusion:

Both studies suggest that both infliximab and secukinumab have statistically significant effects on the severity of nail psoriasis. However, those who were treated with infliximab achieved a greater reduction in severity than those who were treated with secukinumab. This likely correlates to the tumor necrosis factor α-mediated autoimmune response being more implicated in the pathogenesis of nail psoriasis than the interleukin-17 mediated cascade. Longitudinal studies conducted throughout longer periods of time need to be done to assess if these effects are longstanding and if there are any potential side effects that might be of concern with these treatments. Since monoclonal antibodies are not the conventional treatment for psoriasis, further barriers such as insurance coverage may present as significant obstacles for patients as well.

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