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The Use of Secukinumab in Psoriatic Patients: A Single Center Study in Morocco

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Authors' contributions

This work was carried out in collaboration among all authors. Authors MEA and AF did the Conception, study design, data collection analysis and interpretation. Authors MM, NI, LB, KS revised the manuscript. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Introduction: Psoriasis is an immune cell-mediated inflammatory skin disease, characterized by the formation of scaly, indurated, erythematous plaques**.** Psoriasis comorbidities and symptoms affect the choice of treatments. Secukinumab is a fully human monoclonal anti-body that selectively neutralizes IL-17A and has proven to be effective in the treatment of multiple manifestations of psoriatic disease.

Materials and Methods: In this prospective descriptive study of 13 patients with moderate to severe psoriasis in the Department of Dermatology at Ibn Sina University Hospital in Rabat between 2022 and 2024, we focus on the treatment of psoriasis with Secukinumab. All our patients received more than 6 injections of Secukinumab. Effectiveness was assessed using the change in absolute Psoriasis Area and Severity Index (PASI) score, and percentage of patients achieving PASI 75/90/100, at weeks 4 and 16.

Results: In this study, 13 patients with severe psoriasis with a PASI>10 were included. The mean age at diagnosis was 44.7 years and the mean duration of the disease before diagnosis was 5

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years. All our patients received Secukinumab following this protocol (subcutaneous injection of 300mg at weeks 0,1,2,3 and 4, followed by 300mg every 4 weeks) and the PASI 75, PASI 90, PASI 100 was evaluated respectively.
At week 4, 69.2% of patients still on Secukinumab had experienced at least a 50% reduction in PASI (PASI 50) from baseline. At week 16, the proportions of patients achieving PASI 75, PASI 90, and PASI 100 were: 23,1%, 30,7%, (46,2%) respectively.
Adverse events possibly relevant to Secukinumab therapy were not reported in our patients
Conclusion: To improve the quality of life of psoriatic patients, the choice of available treatments is now increasing. Secukinumab showed sustained effectiveness and favorable safety profile in patients with moderate to severe psoriasis in our patients.

Keywords: Psoriasis; inflammatory; secukinumab; PASI.

1. INTRODUCTION

"Psoriasis is a chronic systemic inflammatory disease, and the prevalence of this disease varies across different ethnics and geographic regions, ranging from 0.09% to 8% [1,2]. Psoriasis is associated with significant comorbidity, reduced quality of life and an overall increase in mortality, hence the need for effective treatment to improve quality of life and possibly reduce the risk of comorbid disease" [3,4,5].

"The pathogenesis of psoriasis involves antimicrobial peptides (AMPs), dendritic cells (DCs), tumor necrosis factor (TNF)α, interleukin (IL)23, Th17, IL17, IL22, and signal transducer and activator of transcription (STAT)" [5].

"Newly developed biologics targeting the pro-inflammatory IL-17A cytokine have shown success in providing higher levels of clinical efficacy in patients with psoriasis. Secukinumab, a member of this novel class of IL-17 inhibitors, is the latest biologic to receive United States FDA approval for the treatment of moderate-to-severe plaque psoriasis" [6,7,8].

Despite evidence of Secukinumab's efficacy in the management of psoriasis, no study in Morocco has been established to approve this efficacy. Here, we present a study of 13 patients treated with Secukinumab.

2. MATERIALS AND METHODS

We performed a prospective descriptive study of 13 patients with severe psoriasis in the Department of Dermatology at Ibn Sina University Hospital in Rabat between 2022 and 2024. Our study included patients with moderate to severe psoriasis, skin surface > 10%, PASI score >10, DLQI score> 10, with an indication for biotherapy (after failure, contraindication or intolerance to 2 systemic treatments), and who received at least 6 injections of Secukinumab. Note that all patients were not taking other treatments for their psoriasis during the study. Excel and Statistical Package for the Social Sciences (SPSS Inc, version 15.0 for Windows) were used for data entry and analysis.

3. CASE PRESENTATION

3.1 Baseline Characteristics of Patients

Our study consisted of 13 patients: 8 males and 5 males, the average age at diagnosis was (44.7) years old, the oldest and youngest patient was 80 and 24 years old, respectively.

The mean duration of the disease before diagnosis was 5 years.

Metabolic syndrome, smoking and stress were the most common comorbidities.

In our study, all our patients had severe psoriasis (generalized or erythrodermic) with elevated PASI >10 (PASI median: 28) and significant impairment of quality of life (DLQI:16), and 5 of our patients had associated nail involvement.

"Regarding previous therapy for psoriasis, topical steroids and methotrexate were the most commonly used topical and systemic therapy, respectively (90% and 85%). Only 21.5% of patients were biologic experienced". [9]

All our patients received Secukinumab following this protocol (subcutaneous injection of 300mg at weeks 0,1,2,3 and 4, followed by 300mg every 4 weeks.

3.2 Effectiveness

At week 4, 69.2% (n=9) of patients still on Secukinumab had experienced at least a 50% reduction in PASI (PASI 50) from baseline. At week 16, the proportions of patients achieving PASI 75, PASI 90, and PASI 100 were: 23,1% (n=3), 30,7%(n=4), (46,2%)(n=6) respectively. Adverse events possibly relevant to Secukinumab therapy were not reported in our patients

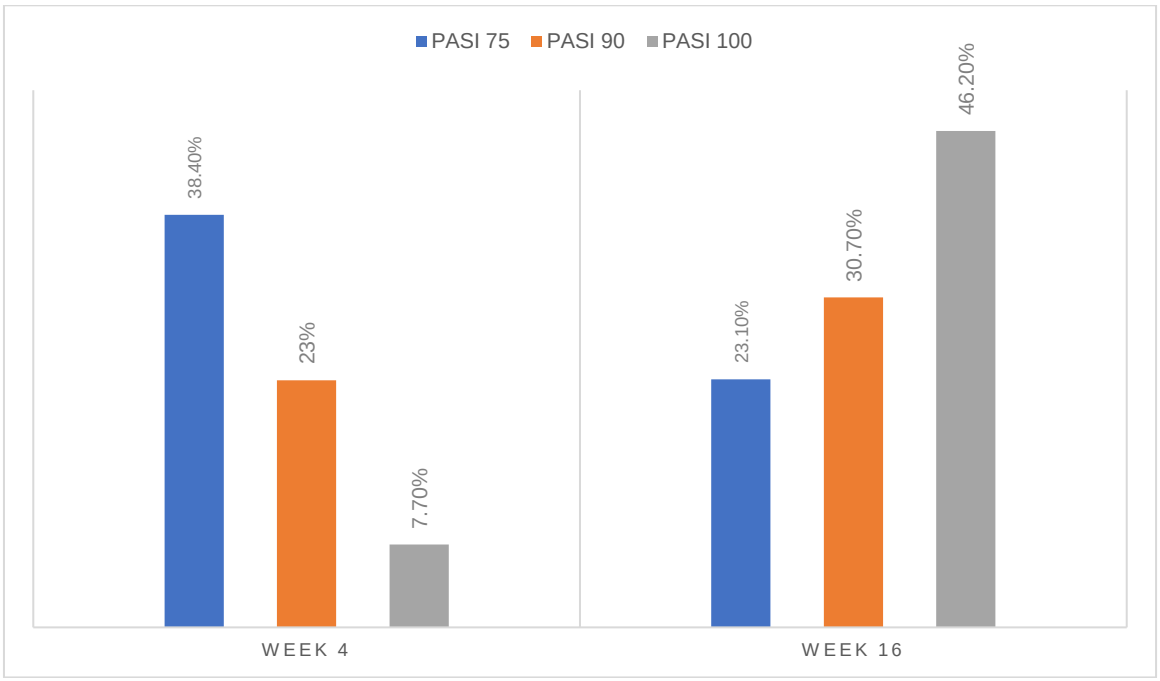

Fig. 1. Percentage of patients achieving PASI 75, PASI 90, PASI 100 at week 4 and at week 16

4. DISCUSSION

"Psoriasis is a chronic systemic immune-mediated inflammatory disease with prominent skin manifestations. Its physical burdens substantially impact psychosocial well-being and socioeconomic status of affected individuals and their caregivers" [1].

"Anti-TNFa treatments were the first, very effective biologics that became available to psoriasis patients" [10]. "More recently, other drugs, such as anti-IL-17, and anti-IL-12/23 monoclonal antibodies, suppressing different mechanisms of the psoriatic inflammatory reaction were introduced" [11].

"Secukinumab is a recombinant human monoclonal IgG1 antibody. It specifically targets IL-17A, blocking its binding to IL-17R and cytokine expression" [12].
"This blockade normalizes inflammatory processes and helps combat epidermal hyperproliferation, T-cell infiltration and excessive expression of pathogenic genes" [13].

"Our patient's baseline PASI score 28 was higher from other studies in Asia-Pacific and Middle-east regions, Japan, China, and Italy" [14,15,16,17].

"regarding the dosage, studies have evaluated the optimal dosage of Secukinumab in psoriasis and found that the efficacy of Secukinumab 300mg was superior to 150mg, whereas in our study we were unable to evaluate the optimal dosage as all our patients received the same dose (300mg)" [18].

Despite our patients' severe PASI score 28, an impressive proportion of patients achieving PASI 75, PASI 90 and PASI 100 at weeks 4 and 16 proved the efficacy of Secukinumab. Our finding reaffirm the results of other study reported in literature [11,13,9].

"Biological therapies have revolutionized the treatment of various immune diseases, but in any patient receiving these drugs it is important to be conscious of the various side effects such us infections, due to their function in the inhibition of IL-17, which plays an important role in innate and adaptive immune system" [19].

"Through the SCULPTURE study (Study Comparing Secukinumab Use in Long-term Psoriasis maintenance therapy: fixed regimens vs retreatment Upon start of Relapse), it has been shown that the anti-17A monoclonal antibody has a highly favorable safety profile, with the favorable tolerability at one year maintained through five years of treatment" [20].

"The most common adverse events in the overall study population were nasopharyngitis, back

pain, and headache, and there were no cases of viral infections or reactivation of previous viral infections" [20].

In addition, eczema, pruritus, injection site reaction and pancytopenia were reported by P.Asawanonda et al as adverse events of Secukinumab [9]. In our study, none of our patients presented an adverse event [21].

5. CONCLUSION

Secukinumab is associated with an auspicious safety profile and is highly effective in achieving a strong and sustained response in the treatment of moderate-to-severe plaque psoriasis. Our results support good clinical outcomes and safety of Secukinumab in Moroccan patients.

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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