



A retrospective review of dupilumab and psoriasis biologic combination therapy

Kelly Barry, Pedro Zancanaro, Rachel Casseres, Nicole Dumont & David Rosmarin

To cite this article: Kelly Barry, Pedro Zancanaro, Rachel Casseres, Nicole Dumont & David Rosmarin (2019): A retrospective review of dupilumab and psoriasis biologic combination therapy, Journal of Dermatological Treatment, DOI: [10.1080/09546634.2019.1659481](https://doi.org/10.1080/09546634.2019.1659481)

To link to this article: <https://doi.org/10.1080/09546634.2019.1659481>



Accepted author version posted online: 23 Aug 2019.



Submit your article to this journal [↗](#)



Article views: 28



View related articles [↗](#)



View Crossmark data [↗](#)

A retrospective review of dupilumab and psoriasis biologic combination therapy.

Kelly Barry¹, MS; Pedro Zancanaro², MD; Rachel Casseres¹, BS; Nicole Dumont²; and David Rosmarin², MD

¹Tufts University School of Medicine, Boston, MA, USA;

²Department of Dermatology, Tufts Medical Center, Boston, MA, USA

Corresponding Author:

David Rosmarin, MD

Tufts Medical Center, Biewend Building, 14th Floor

260 Tremont St, Boston, MA 02111

617-636-0156

DRosmarin@tuftsmedicalcenter.org

Funding sources: None

A retrospective review of dupilumab and psoriasis biologic combination therapy.

Introduction: Sometimes patients have more than one disease where different arms of the immune system are active necessitating multiple biologics at the same time. In this study, we report on experience with the use of dupilumab and psoriasis biologics in combination.

Methods: A retrospective chart review of patients on dupilumab and an FDA approved psoriasis biologic between January 1st, 2016 and May 1st, 2019 was performed. Seven patients met these criteria.

Results: All seven patients completed combination dupilumab/guselkumab treatment for 2-13 months (mean = 6.4, median = 6). Improvement in AD or BP and psoriasis was observed in six out of the seven patients. No serious adverse effects were observed.

Conclusion: Although cost consideration and long-term monitoring to evaluate the true safety of biologic treatment used in combination are necessary, the benefits may outweigh the risks of using dupilumab with other biologics in combination in patients with these indications.

Keywords: psoriasis; atopic dermatitis; bullous pemphigus; biologic; dupilumab; guselkumab

Introduction:

Targeted immunomodulatory biologics have revolutionized the treatment of inflammatory skin diseases. Psoriasis is Th17 driven with high levels of TNF- α , IL17a, and IL23. Biologics targeting these cytokines are highly effective in treating psoriasis.¹ In comparison, atopic dermatitis (AD), and asthma, are type 2 dominant with high levels of IL-4, IL-5, and IL-13.² Dupilumab, an IL-4R α antagonist, is FDA approved for treating AD, asthma, and chronic rhinosinusitis with nasal polyps and has had preliminary success in treating other Th2-mediated diseases, including bullous pemphigoid (BP).³ While originally considered opposing pathways, it is now recognized that patients can have comorbid Th17 and Th2-driven inflammatory skin diseases at the same time, such as psoriasis and atopic dermatitis. These patients may require combination immunomodulating therapies to treat both pathways.⁴ There is no published literature on use of dupilumab with other systemic agents, and there is limited data on the use of psoriasis biologics in combinations with other immunomodulators besides methotrexate. Safety of combining immunomodulators cannot be assumed, as when TNF- α inhibitors are combined with azathioprine or 6-mercaptopurine, there is an increased risk of hepatosplenic T-cell lymphoma.⁵ We report experience with the use of dupilumab and a psoriasis biologic in combination.

Methods:

A retrospective chart review was performed of patients on dupilumab and an FDA approved psoriasis biologic (etanercept, adalimumab, certolizumab, infliximab, secukinumab, ixekizumab, brodalumab, ustekinumab, guselkumab, tildrakizumab). Records were retrieved from The Tufts Medical Center Department of Dermatology electronic medical record between January 1st, 2016 and May 1st, 2019. Charts were

reviewed and a minimum of one follow-up appointment was required at least six weeks after initiation of dual biologic therapy. Seven patients met these criteria and data from their electronic medical records was recorded.

Results:

Patient demographics, treatment, indication, and response are summarized in **Table I**.

Clinical response was classified qualitatively as either resolved, improved or not improvement based on changes in BSA/IGA/PGA.

Patients (N=7, 71% Caucasian, 29% Asian, 43% female, age range and mean: 31-78 and 61 years, respectively) presented with psoriasis and AD (N=6) or psoriasis and BP (N=1). All patients failed topicals as first line therapy, three patients previously failed other biologic monotherapy. All seven patients have completed combination dupilumab/guselkumab treatment for 2-13 months (mean = 6.4, median = 6).

Dupilumab was dosed at 300mg bi-weekly in five patients and weekly in two patients. Positive clinical response to dupilumab (reduction in BSA and IGA scores) was observed in all six patients with AD. Positive clinical response to guselkumab (reduction in BSA and PGA scores) was observed in all but one patient. One patient experienced complete resolution of both AD and psoriasis. Dupilumab alone significantly cleared and prevented formation of new bullae in the patient with BP. Of the common adverse effects, including injection site reaction (ISR), infections, conjunctivitis, gastrointestinal upset, only mild ISR was observed in one patient.

Discussion:

Our data indicates significant improvement in body surface involvement and disease severity on 2-13 months of combination dupilumab/guselkumab therapy in patients diagnosed with AD, psoriasis, and BP, supporting the use of biologic combination therapy for these indications. These preliminary results are limited by the small sample size (N=7), short-term follow-up, use of a single center for data, and retrospective nature of the study. Long-term monitoring is necessary to truly evaluate the safety of biologic treatment used in combination. The cost of multiple biologics in the same patient is also of concern. Nevertheless, for certain patients, the benefits may outweigh the risks of using dupilumab with other biologics in combination.

Declaration of Interest Statement:

David Rosmarin has received honoraria as a consultant for AbbVie, Celgene, Dermavant, Dermira, Janssen, Lilly, Novartis, Pfizer, Regeneron, and Sanofi; has received research support from AbbVie, Bristol Meyers Squibb, Celgene, Dermira, Incyte, Janssen, Lilly, Merck, Novartis, Pfizer, and Regeneron Pharmaceuticals Inc; and has served as a paid speaker for AbbVie, Celgene, Janssen, Lilly, Novartis, Pfizer, Regeneron Pharmaceuticals Inc., and Sanofi. All other authors have no conflicts of interest to disclose.

References:

1. Blauvelt A, Papp KA, Griffiths CE, et al. Efficacy and safety of guselkumab, an anti-interleukin-23 monoclonal antibody, compared with adalimumab for the continuous treatment of patients with moderate to severe psoriasis: Results from the phase III, double-blinded, placebo- and active comparator-controlled VOYAGE 1 trial. *J Am Acad Dermatol*. 2017;76:405–417.
2. Tavakolpour S, Tavakolpour V. Interleukin 4 inhibition as a potential therapeutic in pemphigus. *Cytokine*. 2016;77:189–195.
3. Kaye A, Gordon SC, Deverapalli SC, et al. Dupilumab for the treatment of recalcitrant bullous pemphigoid. *JAMA Dermatol*. 2018;154:1225-1226.
4. Guttman-Yassky E, Krueger JG. Atopic dermatitis and psoriasis: two different immune diseases or one spectrum? *Curr Opin Immunol*. 2017;48:68e73.
5. Deepak P, Sifuentes H, Sherid M, et al. T-cell non-Hodgkin's lymphomas reported to the FDA AERS with tumor necrosis factor-alpha (TNF-alpha) inhibitors: results of the REFURBISH study. *Am J Gastroenterol*. 2013;108:99–105.

Table I. Summary of patient demographics, treatment, indication, and response.

Biologic Combination	Age (years)	Race/ Ethnicity	Gender	Indication	Outcome (resolved, improved, not improved)	Therapy duration (months)	Adverse Drug Reaction
Dupilumab/guselkumab	31	Asian	M	AD/PsO	AD/PsO Improved	13	None
Dupilumab/guselkumab	56	White, non-Hispanic	M	AD/PsO	AD/PsO Resolved	5	None
Dupilumab/guselkumab	62	White, non-Hispanic	F	AD/PsO	AD/PsO Improved	6	None
Dupilumab/guselkumab	78	Asian	M	AD/PsO	AD Improved, PsO Not Improved	6	None
Dupilumab/guselkumab	67	White, non-Hispanic	M	AD/PsO	AD/PsO Improved	9	None
Dupilumab/guselkumab	65	White, non-Hispanic	F	AD/PsO	AD/PsO Improved	4	Mild ISR
Dupilumab/guselkumab	70	White, non-Hispanic	F	BP/PsO	BP/PsO Improved	2	None

BSA, body surface area, *IGA*, investigators global assessment, *PGA*, physicians global assessment, *ISR*, injection site reaction, *AD*, atopic dermatitis, *BP*, bullous pemphigoid, *PsO*, psoriasis.