Acneiform eruption induced by vedolizumab

Jorge Magdaleno-Tapial MD, Blanca Ferrer-Guillén MD, Cristian Valenzuela-Oñate MD, Altea Esteve-Martínez PhD

Affiliations: Department of Dermatology, Consorcio Hospital General Universitario de Valencia, Valencia, Spain

Corresponding Author: Jorge Magdaleno-Tapial, Avenida Tres Creus, 2, 46014, Valencia, Spain, Tel: 34-63-5271559, Email: jormagta@gmail.com

Abstract

The development of new biological drugs for the treatment of advanced oncological processes or severe inflammatory diseases brings with it the appearance of new adverse effects. Vedolizumab, an α4β7 integrin inhibitor antibody, is approved for induction and maintenance therapy in both Crohn disease and ulcerative colitis. We report a case of severe acneiform eruption induced by vedolizumab in a 17-year-old woman with ulcerative colitis.

Keywords: vedolizumab, acneiform eruption, side effects

Introduction

The development of new biological drugs for the treatment of advanced oncological processes or severe inflammatory diseases brings with it the appearance of new adverse effects. Vedolizumab, an α4β7 integrin inhibitor antibody, is approved for induction and maintenance therapy in both Crohn disease and ulcerative colitis, [1]. We report a case of severe acneiform eruption induced by vedolizumab in a 17-year-old woman with UC.

Case Synopsis

A 17-year-old woman without history of dermatological disease presented to our department with a 14-day history of skin lesions on the face. She had a history of ulcerative colitis, treated exclusively with oral mesalazine for 7 months. A severe outbreak of ulcerative colitis required treatment with intravenous corticosteroids and cyclosporin. Vedolizumab 300mg was instituted. She received the third intravenous infusion of vedolizumab about four weeks prior to presentation. Physical examination revealed multiple rice-sized erythematous pustules on the face (chin, cheeks and forehead), (**Figure 1**). Skin lesions were not preceded by visible comedones and could therefore not be considered true acne. No involvement of the upper trunk or back was observed. She did not complain of itching or pain. The acneiform eruption improved after treatment with oral doxycycline 50mg once

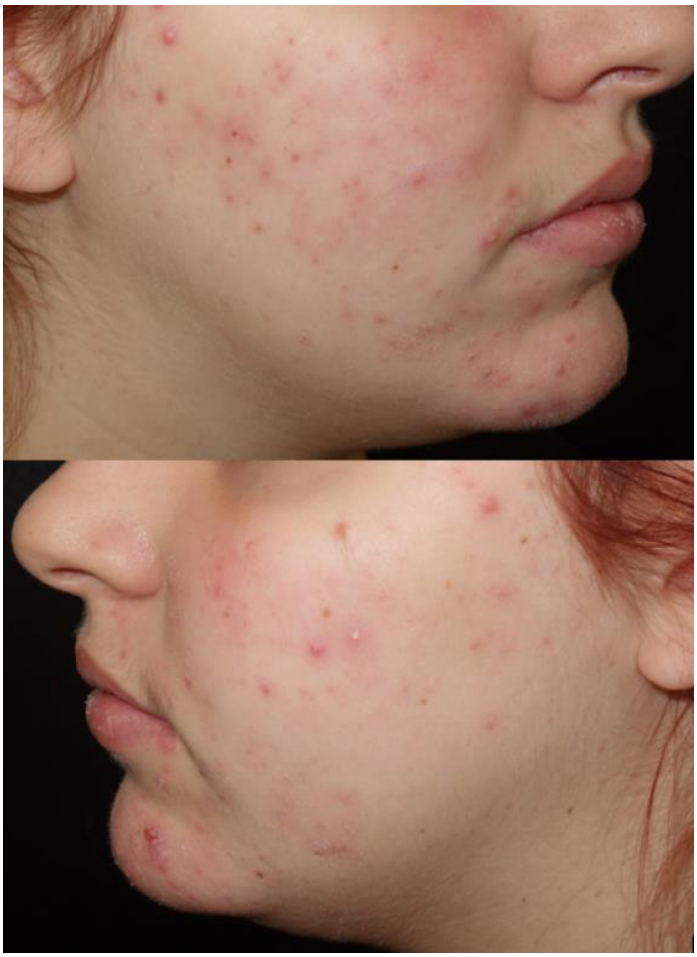

Figure 1. *Multiple rice-sized erythematous papules and pustules on the face. No comedones were seen.*

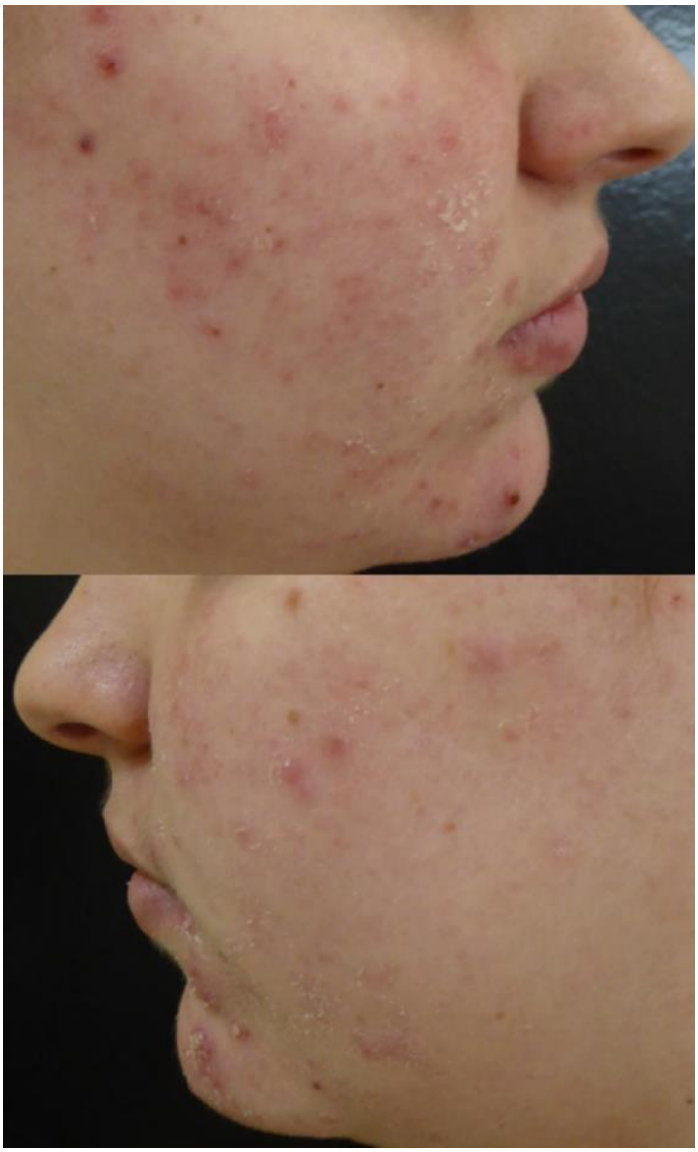

Figure 2. *Worsening of the lesions after a new dose of vedolizumab.*

daily and topical ivermectin. However, the patient again consulted our clinic two-weeks after with worsening of the lesions at 48-72 hours after the next infusion of vedolizumab (**Figure 2**). In spite of this, this treatment was continued since it was effective in controlling her ulcerative colitis.

Case Discussion

We report a patient with acneiform reaction caused by vedolizumab. Although onset of acne and rosacea can certainly occur in a 17-year-old girl, the debut coincided with the start of the new drug, eruption improved at the end of the half-life of the drug, and flare again occurred with a new infusion. This timing leads to a high likelihood of adverse drug reaction. If we apply the Naranjo drug reaction assessment tool to this case, the result would be "probable."

Vedolizumab has been shown to be effective and safe in phase III trials and was subsequently approved for induction and maintenance therapy in both ulcerative colitis and Crohn disease [1]. The most frequent adverse reactions associated with vedolizumab are nausea, arthralgias, headache, cough, nasopharyngitis, and upper airway infections. Vedolizumab may be a viable alternative biological therapy in inflammatory bowel disease patients who experience anti-TNF therapy-induced dermatological side effects [2, 3]. However, frequent skin reactions such as pruritus, rash, eczema, erythema, or acne have also been reported. We have not found reports of these cutaneous effects in the dermatological literature.

The α4β7 integrin is a transmembrane receptor on T-lymphocytes that acts as a leukocyte recruiter to the gastrointestinal tract. The major binding site of the α4β7 integrin is the mucosal addressing-cell molecule 1 (MAd-CAM-1). This molecule is only expressed on the endothelium of blood vessels in the gastrointestinal tract and its presence is upregulated in the case of inflammation. The α4β7 integrin antibody vedolizumab inhibits trafficking of subpopulations of T cells to the gut mucosa [4]. However, we do not know the etiopathogenic mechanism by which vedolizumab can give rise to this acneiform reaction. In addition, we do not know if this side effect has prognostic implications in the course of ulcerative colitis, as occurs with acneiform reactions induced by ECGF-inhibitors such as cetuximab [5].

Conclusion

In conclusion, we report an acneiform reaction caused by vedolizumab. We believe that this new biological drug will be used increasingly. That is why dermatologists should be aware of the adverse effects as well as their management.

References

1. Christensen B, Colman RJ, Micic D, Gibson PR, Goeppinger SR, Yarur A, et al. Vedolizumab as Induction and Maintenance for Inflammatory Bowel Disease: 12-month Effectiveness and Safety. *Inflamm Bowel Dis*. 2018;19;24(4):849–60. [PMID: 29562271].
2. Pijls PARR, Gilissen LPL. Vedolizumab is an effective alternative in inflammatory bowel disease patients with anti-TNF-alpha therapy-induced dermatological side effects. *Dig Liver Dis Off J Ital Soc Gastroenterol Ital Assoc Study Liver*. 2016;48(11):1391–3. [PMID: 27639825].
3. Hirsch A, Colman RJ, Lang GD, Rubin DT. Successful Treatment of Ulcerative Colitis With Vedolizumab in a Patient With an Infliximab-Associated Psoriasiform Rash. *ACG Case Rep J*. 2015;2(4):236–8. [PMID: 26203450].
4. Verstockt B, Ferrante M, Vermeire S, Van Assche G. New treatment options for inflammatory bowel diseases. *J Gastroenterol*. 2018;53(5):585-590. [PMID: 29556726].
5. Štulhofer Buzina D, Martinac I, Ledić Drvar D, Čeović R, Bilić I, Marinović B. Adverse Reaction to Cetuximab, an Epidermal Growth Factor Receptor Inhibitor. *Acta Dermatovenerol Croat ADC*. 2016;24(1):70–2. [PMID: 27149134].