



# A CREAM CONTAINING LIPOHYDROXY ACID AS A NEW ALTERNATIVE TREATMENT FOR CETUXIMAB-INDUCED PAPULOPUSTULAR ERUPTION

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## INTRODUCTION

Cetuximab, an epidermal growth factor receptor inhibitor (EGFRI), has shown efficacy in the treatment of solid tumors. The most frequent cutaneous adverse effect of EGFRI therapy is an acneiform eruption observed in 2/3 of patients within 1 to 3 weeks after therapy initiation that may correlate with a positive response to chemotherapy. We report a case of a patient using cetuximab for metastatic colon cancer treatment who developed this skin side effect and showed a favorable response to the use of a cream containing Lipohydroxy acid (LHA), Salicylic acid (SA), Niacinamide and Piroctone Olamine.

## CASE REPORT

A 55-year-old man who developed metastatic colon cancer was treated with bevacizumab, irinotecan, 5-fluorouracil and leucovorin. Because he did not respond, he was started on cycles of cetuximab and irinotecan. Two weeks later he presented with a papulopustular eruption on the central area of his face (Fig. 1). A cream containing Lipohydroxy acid (LHA), Salicylic acid (SA), Niacinamide and Piroctone Olamine was added to the treatment with improvement of his eruption within one week (Fig. 2). Subsequently his malignant disease deteriorated with fatal outcome.

## DISCUSSION

This cutaneous reaction is possibly caused by a direct effect of EGFR blockade, increased expression of the negative growth regulator p27, inducing apoptosis, and keratinocyte differentiation. Histopathology showed thinning of the stratum corneum, infiltration of inflammatory cells into the follicles, which were enlarged and plugged with keratin. There is no gold-standard therapy for this papulopustular eruption. Therapeutic measurements include topical and systemic antibiotics, topical corticosteroids, benzoyl peroxide, nystatin, ketoconazole, pimecrolimus, and retinoids. The formulation containing Lipohydroxy acid (LHA), Salicylic acid (SA), Niacinamide and Piroctone Olamine, may be a novel option to treat this EGFRI induced skin eruption.

**Figure 1:**  
Papulopustular eruption of the face before therapy



**Figure 2:** Significant improvement after one week of treatment with the LHA containing cream



## CONCLUSION

Cetuximab induced EGRF blockade results in enlarged and inflamed follicles plugged with keratin, and thinned epidermis. The proposed mechanism is increased p27 expression that leads to apoptosis and keratinocyte differentiation. LHA, due to its lipophilic properties, disrupts the keratinosomes and allows for a targeted cell by cell exfoliation of keratinocytes, that helps to unplug the follicle. A cream containing Lipohydroxy acid (LHA), Salicylic acid (SA), Niacinamide and Piroctone Olamine, may also aid in treating this EGFRI acne-like eruption.

## REFERENCES

- 1 - Eiling E, Brandt M, Schwarz T, Hauschild A. Pimecrolimus: a novel treatment for cetuximab-induced papulopustular eruption. *Arch Dermatol.* **144**(9): 1236-8, 2008
- 2 - Heidary N, Naik H, Burgin S. Chemotherapeutic agents and the skin: An update. *J Am Acad Dermatol.* **58**(4): 545-70, 2008
- 3 - Corcuff P, Fiat F, Minondo AM, Lévêque J-L, Rougier A. A Comparative ultrastructural study of hydroxyacids induced desquamation. *Eur J Dermatol.* **12**(4): XXXIX-XLIII, 2002
- 4 - Lévêque J-L, Corcuff P, Rougier A, Pierard GE. Mechanism of action of a lipophilic salicylic acid derivative on normal skin. *Eur J Dermatol.* **12**(4): XXXV-XXXVIII, 2002