

# Azelaic acid induced cheilitis: a side effect not to be missed

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El Hadadi Farah1\*; Mezni Line1; Meziane Mariame1; Ismaili Nadia1; Benzekri Laila1; Senouci Karima

1 Department of Dermatology, Mohammed V University in Rabat, Ibn Sina University Hospital, Rabat, Morocco.

## Introduction:

Azelaic acid is a naturally occurring saturated dicarboxylic acid which, on topical application (usually as a 20% cream), has been shown to be effective in the treatment of comedonal acne and inflammatory (papulopustular, nodular and nodulocystic) acne, as well as various cutaneous hyperpigmentary disorders characterized by hyperactive/abnormal melanocyte function, including melasma. We report a rare side effect of topical azelaic acid 20% in a young adult for acne.

## Materials & Methods:

A 29-year-old female patient, with a history of acne vulgaris treated with oral isotretinoin 13 years ago with poor adherence to therapy, consulted in our department for the persistence of comedons and some papules of the cheeks with period of exacerbation during menstruation cycle, the dermatological examination revealed dilated pores, hyper seborrhea, comedons and post inflammatory hyperpigmentation of the cheeks secondary to inflammatory papules. We decided to treat the patient with topical 20% azelaic acid cream 2 applications per day for its inflammatory effect on acne papules but also for the post inflammatory hyperpigmentation. One month after the patient presented a severe cheilitis (picture 1). We discontinued the cream to 2 times per week and we advised her to apply lip balm with a good evolution.



Figure1: fissured cheilitis after 1-month therapy using Azelaic acid 20% cream.

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## Results & Discussion:

Azelaic acid is a natural material produced by a yeast that lives on normal skin, *Malassezia furfur*. It is widely used in dermatology (mild to moderate inflammatory acne vulgaris, papulopustular rosacea, melasma, post inflammatory hyperpigmentation, hair loss in combination with topical minoxidil 5%). Due to its bactericidal effect against *Propionibacterium acnes* and *Staphylococcus epidermidis* through its inhibitory effect on the synthesis of microbial cellular proteins it also exerts its keratolytic and comedolytic effects by reducing the thickness of the stratum corneum and decreasing the number of keratohyalin granules by reducing the amount and distribution of filaggrin in epidermal layers and possesses a direct anti-inflammatory effect due to its scavenger activity of free oxygen radical [1].

Azelaic acid is also known for being a competitive inhibitor of mitochondrial oxidoreductases and of 5 alpha-reductase, inhibiting the conversion of testosterone to 5-dehydrotestosterone [2]. Many sides effects have reported such as: worsening of asthma, vitiligo depigmentation, small depigmented spots, hypertrichosis, exacerbation of recurrent herpes labialis, dryness, stinging, pruritus, xerosis.

## Conclusions:

Due to its keratolytic effect cheilitis is a very rare side effect that has been poorly reported (0.1-1%). Patients should be aware that cheilitis can be a possible side effect of topical azelaic acid.

## Aknowledgments:

None

## References:

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