

A Comparison of the Effect of Topical Azelaic Acid (20%) and Hydroquinone (2%) in the Treatment of Melasma

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SUMMARY

A 20% azelaic acid base cream and 2% hydroquinone cream were used in patients with melasma. The statistical processed results refer to forty patients treated for three months with twice daily applications. The reduction in pigmentary intensity was obtained in all patients. The results showed that the azelaic acid (20%) cream was not better than hydroquinone (2%) in treatment of melasma ($P < 0.05$).

The efficacy of topical 20% azelaic acid cream has been proved in treatment of patients with many skin diseases particularly those with hyperpigmentation such as : melasma, toxic melanoderma, poikiloderma of Civatte 1,2 and Lentigo Maligna. 3,4,5

The aim of this study is to assess whether topical azelaic acid is superior to hydroquinone or not.

Materials and Methods

Forty patients with the clinical diagnosis of melasma entered the study. The patients were allocated to one of the two treatment groups with 20% azelaic acid cream or 2% hydroquinone cream on a randomized double blind basis.

Fading of the lesions and tolerability of the treatment were checked after 2,4,8,12 and 16 weeks. The treatment efficacy was assessed by

regression of the clinical signs using a graduated scale in centimeters to measure the size of the hyperpigmented lesions by applying it directly to the lesion.

Results

Table 1 illustrates the final evaluation of efficacy of azelaic acid and hydroquinone after 16 weeks of therapy. Both drugs had good to excellent results, as measured by reduction of melasma pigmentary intensity using the following scale: 0=normal, 1=light hyperpigmentation, and 2=dark hyperpigmentation. Reduction in lesion size was assessed using the following scale: 0=0 cm, 1=less than 3 cm, 2=3-6cm, and 3=more than 6cm. The overall assessment of the results indicated that azelaic acid was not better than the hydroquinone in treatment of melasma. The value reached 60% with azelaic acid and 55% with hydroquinone; the difference is insignificant ($P < 0.05$). Mild to moderate irritant reactions were initially seen in both tested drugs.

Discussion

Melasma is a common pigmented skin disease that affects exposed areas of the face and neck. Many remedies have been used for its treatment; hydroquinone cream has been used since long time as the drug of choice.⁶

Table 1. Comparison between the effectiveness of azelaic acid 20% cream and hydroquinone 2% cream based on changes of the size of the lesions.

Result	very effective*	Effective**	Mild effective ***
Azelaic acid	60%	25%	15%
Hydroquinone	55%	25%	20%

*Very effective = reduction from scales 2 or 3 to 0.

**Effective = reduction from scales 2 or 3 to 1.

***Mild = reduction from scales 2 or 3 to 2.

Azelaic acid was previously found to be effective in the treatment of patients with acne,¹ keratosis,² and hyperpigmented disorders.^{4,5} The mode of action in pigmented disorders is probably via its competitive inhibition of tyrosinase, inhibition of DNA synthesis,⁷ and damage of mitochondria.⁸

The efficacy of both drugs was noticed only after 4 weeks of treatment. After 16 weeks, azelaic acid gave a very good result in 60% compared to 55% of the hydroquinone group.

In contrast to the study done by Verallo-Ronell⁹ who found topical azelaic acid to be superior to hydroquinone, this study proved that there was no difference in efficacy between azelaic acid and hydroquinone in treatment of melasma.

In conclusion, this study showed that azelaic acid was not better than hydroquinone in the treatment of melasma. However, it could be used as an alternative drug.

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