

## PHOTOLETTER TO THE EDITOR

## Topical 0.5% brimonidine gel to camouflage redness of immature scars

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**Abstract**

Cutaneous scars develop as a result of a defective wound healing process. Scars are commonly visible as erythematous, sometimes disfiguring lesions which might be stigmatizing for the affected patient. Only a few therapies to improve the appearance of scars are available. Recently, brimonidine — a selective  $\alpha_2$ -receptor-agonist which causes vasoconstriction of small cutaneous vessels — was approved for the treatment of erythematotelangiectatic rosacea. Topical brimonidine might also be helpful to improve redness of immature scars. Here we report on the effect of brimonidine 0.5% gel on a flat, erythematous scar in a 25-year-old female patient. Whitening of the scar could be observed immediately after application of brimonidine 0.5% gel and a good clinical result was observed within one hour. This effect lasted for up to three hours. We conclude that brimonidine 0.5% gel is a suitable topical therapy to reduce erythema in visible cutaneous scars. (*J Dermatol Case Rep.* 2015; 9(3): 87-88)

**Key words:**

brimonidine gel, erythema, immature scar, scar, topical therapy

Cutaneous scars develop as a result of a defective wound healing process. A variety of different scar types are known and visible scars often have a strong impact on quality of life of affected patients. Commonly, scars appear thicker and more pigmented as result of a disturbed interaction of cytokines, cells and the surrounding extracellular matrix.<sup>1</sup> Furthermore scars go along with high vascularity, increased blood perfusion and erythema. Currently, there are different therapeutic approaches available to treat excessive and red-colored scars.<sup>2</sup> Topical silicone gels or intralesional glucocorticosteroids or chemotherapeutics are used to ameliorate scar thickness and stiffness, but also itch and pain associated with scars.<sup>3</sup> Scar color and redness often remains a difficult to treat symptom. Dye-laser or Nd:YAG lasers are used to reduce vascularization and erythema.<sup>2,3</sup> However, to date there is no topical drug approved for the treatment of erythematous scars.

Recently a 0.5% brimonidine tartrate containing gel was approved for the topical treatment of erythematotelangiectatic rosacea.<sup>4,5</sup> Brimonidine is a selective  $\alpha_2$ -receptor-

agonist and fast-acting vasoconstrictor which improves facial erythema in rosacea within a very short time.<sup>4</sup> Whether topical brimonidine improves redness in immature scars is unknown.

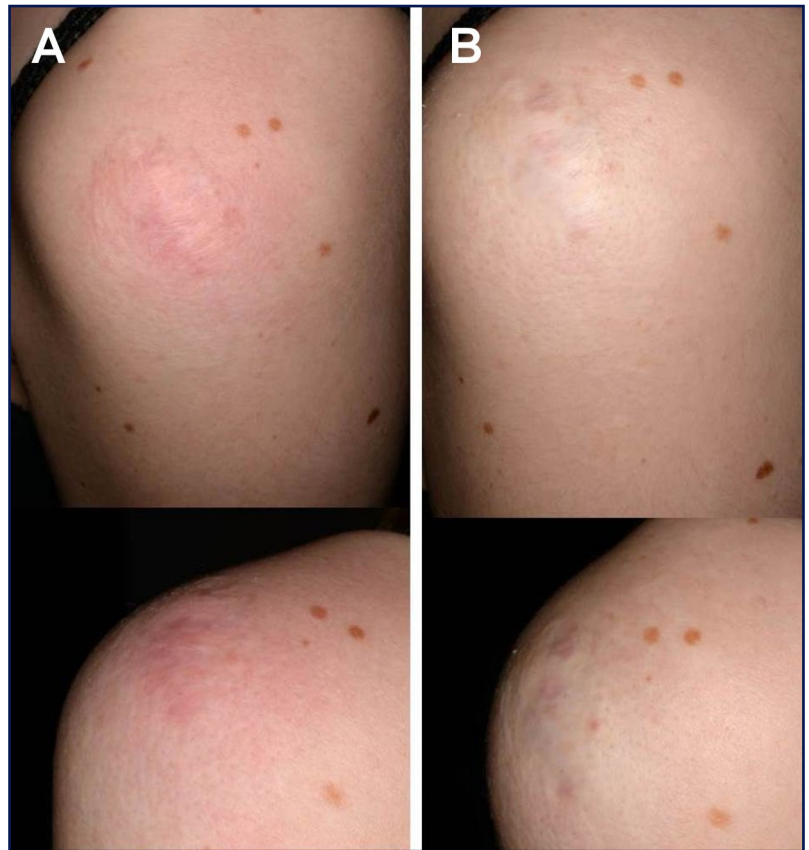
In our scar clinic we saw a 25-year-old female patient who underwent a nevus excision of her left shoulder years ago. Later, a hypertrophic scar developed at the excision site and was treated with injections of crystalline triamcinolone acetonide. Following this treatment, scar thickness and stiffness clearly improved. An erythematous discoloration of the flat scar remained. Laser treatment was offered, however the patient refused to undergo this treatment modality.

Topical, off-label, treatment with brimonidine 0.5% gel was initiated. Photographic documentation was performed before and one hour after topical application of brimonidine 0.5% gel (Fig. 1). Within minutes after application of brimonidine 0.5% gel a whitening of the scar was observed and the color of the scar changed to nearly skin color. The patient reported later that the effect lasted up to 3 hours after application. Thus, we could show for the first time that

topical brimonidine 0.5% gel clearly improved erythema in immature scars. Brimonidine 0.5% gel might be a low-cost alternative to reduce redness in scars.

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**Figure 1**

(A) Flat, erythematous scar at the left shoulder of a 25-year-old woman before topical treatment. (B) One hour after application of 0.5% brimonidine gel the redness of the scar disappeared and the scar nearly becomes invisible.