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Rapid healing and reduced erythema after ablative fractional carbon dioxide laser resurfacing combined with the application of autologous platelet-rich plasma.

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Abstract

BACKGROUND: Fractional carbon dioxide laser resurfacing (FxCr) has shown considerable efficacy in reducing wrinkles, although complications such as scarring and prolonged erythema are more common and down-time is longer than with nonablative laser treatment. Platelet-rich plasma (PRP), a high concentration of platelets in a small volume of plasma, is known to enhance tissue healing.

OBJECTIVE: To evaluate the benefits of PRP in the wound healing process after FxCr.

MATERIALS AND METHODS: Twenty-five subjects were treated with FxCr on the bilateral inner arms. PRP was prepared from 10 mL of whole blood and applied on a randomly allocated side, with normal saline being used as the contralateral control. Transepidermal water loss (TEWL) and skin color were measured on both sides. Skin biopsies were also taken from five subjects on day 28.

RESULTS: Significantly faster recovery of TEWL was seen on the PRP-treated side. The erythema index and melanin index on the PRP-treated side were lower than on the control side. Biopsy specimens from the PRP-treated side showed thicker collagen bundles than those from the control side.

CONCLUSION: Application of autologous PRP is an effective method for enhancing wound healing and reducing transient adverse effects after FxCr treatment.

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Comment in

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