

Autologous Platelet-Rich Plasma with Fractional Laser Resurfacing

ANDREI I. METELITSA, MD, FRCPC*

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The innovative introduction of fractional technology has significantly enhanced patient recovery and reduced complication rates. Nevertheless, the length of down-time associated with fractional ablative laser resurfacing is an important aspect of patient counselling and can inhibit some patients from pursuing this treatment modality. Consequently, wound healing principles seem more important than ever, with platelets playing an important role. With the escalating use of platelet-based products in medicine over the past 10 years, new research on the use of platelet-rich plasma (PRP) and platelet-rich fibrin matrix has taken on new meaning.^{1,2} The relatively quick preparation time, coupled with the autologous nature of these concentrated platelet formulations, make for an intriguing treatment alternative. In their study of 25 patients, Na and colleagues describe how the use of autologous PRP can improve healing with fractional laser resurfacing of the arms.³

The authors demonstrate statistically significantly greater improvement in erythema and less post-inflammatory hyperpigmentation on the treatment sites than in controls. Four weeks after treatment, PRP application was also associated with greater collagen thickness. All of these changes are probably due to the presence of at least seven different growth factors in the PRP, which can enhance soft tissue healing. Coupled with fractional resurfacing, the formation of multiple columns creates a new

drug delivery route and can potentially augment absorption of PRP without the need for injections.

A number of essential treatment-related questions remain unanswered. The treatment in this study was conducted on off-facial sites, whereas most laser resurfacing is performed on the face; therefore, wound healing differences need to be accounted for. In addition, it would be interesting to compare and contrast PRP with other topical preparations that are routinely utilized after laser resurfacing. It is too early to determine accurately whether this treatment will result in healing time that will have a clinically meaningful effect on laser resurfacing, but the use of platelet-based formulations in cutaneous medicine will continue to evolve, and it is of utmost importance for dermatologists to understand the general principles of this treatment.

References

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Address correspondence and reprint requests to: Andrei I. Metelitsa, MD, SkinCare Physicians, 1244 Boylston St., Suite 302, Chestnut Hill, MA 02467, or e-mail: andrei.metelitsa@gmail.com

*SkinCare Physicians, Chestnut Hill, Massachusetts