

Clinical effects

Recent studies demonstrated that injection of PRP in the face and neck for the purpose of revitalization would lead to promising outcomes (38). Some studies suggest that PRP may have value in rejuvenation of wrinkled and sagging skin (42). Although, methods of PRP application such as topical application or direct injection are being investigated, there is yet no definite method for clinical use of PRP (12).

Platelet Rich Plasma (PRP) is used for stimulation of both superficial and deep dermis layers. For superficial stimulation, the injection must be done in the superficial dermis. The PRP must be injected into the deep dermis or subdermal tissues when using as filler. The superficial injection might be done just like mesotherapy technique in order to improve the skin texture, volume and hydration (43). The technique is easy to be performed and has no important side-effects (12). Side-effects might appear from mild bruising and occasional swelling to rarely infections (43).

Some other study has demonstrated aPRP as a beneficial primary or adjunctive treatment (adjuvant treatment to lasers) for the tissue rejuvenation (3). Another study has assigned contraindications for PRP application which consists of pregnancy, breastfeeding, malignancy, autoimmune or blood diseases (44).

Conclusion

Compared with other skin rejuvenation therapies, the clinical experience using PRP can result in skin rejuvenation and global facial volumisation (38). PRP is a form of bio-stimulator that is safe and creates an immediate, long lasting volumetric effect with natural looking results. Taken together, the PRP injections have provided a high level of patient satisfaction (43). Regard to few studies on the rejuvenation effects of

PRP, there are many concepts in this field that need to have clear definition such as platelet-rich plasma, platelet gel and platelet releasate. Both methods and product need definition, standardization, specific quality parameters and clinical indications and contraindications. Due to limited studies on clinical efficacy and safety, further studies are required to investigate the mechanism of action behind the therapeutic effects of these products and their long term safety.

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Conflict of Interest

The authors declare no conflict of interest.

References

1. Mehta S, Watson JT. Platelet rich concentrate: basic science and current clinical applications. *J Orthop Trauma*. 2008;22:432-438.
2. Redaelli A, Romano D, Marciano A. Face and neck revitalization with platelet-rich plasma (PRP): clinical outcome in a series of 23 consecutively treated patients. *J Drugs Dermatol*. 2010;9:466-472.
3. Shin MK, Lee JH, Lee SJ, et al. Platelet-rich plasma combined with fractional laser therapy for skin rejuvenation. *Dermatol Surg*. 2012; 38: 623-630.
4. Borzini P, Mazzucco I, Blackwell P. Platelet-rich plasma (PRP) and platelet derivatives for topical therapy. What is true from the biologic view point? *ISBT Science Series*. 2007; 2: 272-281.
5. Marx RE, Carlson ER, Eichstaedt RM, et al. Platelet-rich plasma: Growth factor enhancement for bone grafts. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 1998; 85: 638-646.
6. Fischer H. A method of suture-free anastomosis of nerve transplantation is being reported, using