

Platelet-rich plasma: clinical applications in dentistry.

Carlson NE, Roach RB Jr.

US Army Dental Corps, Fort Lewis, Wash, USA.

BACKGROUND: Platelet-rich plasma, or PRP, has become a valuable adjunct in wound healing in dentistry. Postsurgically, blood clots initiate the healing and regeneration of hard and soft tissues. Clinicians and scientists are investigating the use of PRP in dentistry as a way to enhance the body's natural wound-healing mechanisms. **TYPES OF ARTICLES REVIEWED:** The authors reviewed scientific articles that discuss the basic knowledge of wound healing mechanisms and that directly studied the growth factors shown to be concentrated in PRP. They also reviewed articles written by clinicians and researchers in dentistry fields, including oral and maxillofacial surgery and periodontics to determine applications of PRP in the field of dentistry. **RESULTS:** All of the reviewed articles expressed promise in PRP use and in the growth factors expressed by the platelets concentrated in PRP—namely platelet-derived growth factor, or PDGF, and transforming growth factor-beta, or TGF-beta—as an adjunct to postsurgical wound healing. Both PDGF and TGF-beta have been shown *in vivo* to accelerate wound healing through different mechanisms. The development of an autologous PRP has been shown to be relatively easy, to be effective as a surgical adjunct, to retain high levels of the desired growth factors after preparation and to be clinically effective in accelerating postsurgical healing in both periodontal and oral surgery applications. **CLINICAL IMPLICATIONS:** PRP has proven to be effective at improving surgical results in a variety of procedures in the field of oral and maxillofacial surgery. PRP also shows promise in periodontal regenerative therapy and should continue to be studied by scientists and clinicians alike.