Effectiveness of Platelet-Rich Plasma Gel for the Treatment of Deep Chronic Diabetic Neuropathic Foot Ulcers

Objectives
To perform a single-center, open-label, randomized controlled trial comparing the closure rates of non-healing grade 3A (University of Texas classification system) diabetic foot ulcers using autologous platelet-rich plasma gel with standard of care treatment and offloading versus standard of care treatment and offloading alone.

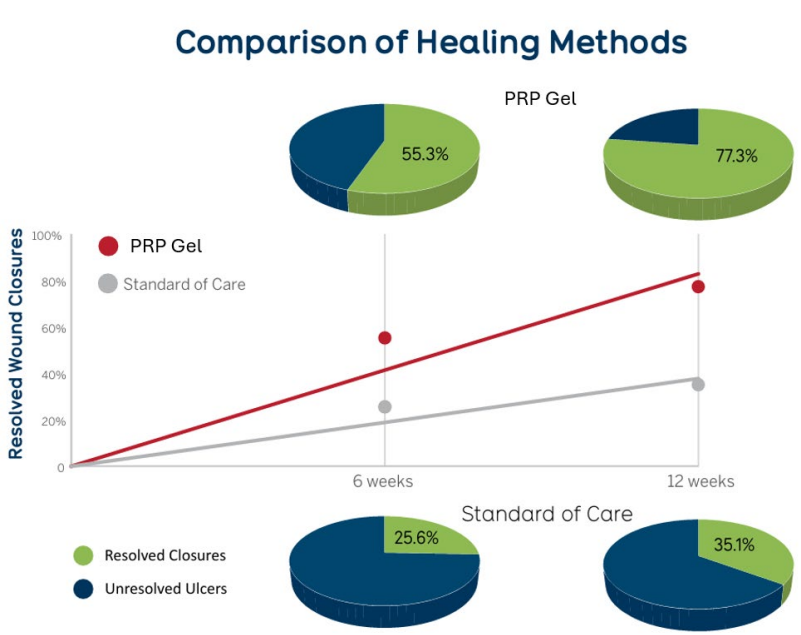
Methods
91 subjects with diabetes (type 1 or 2), 18 years of age or older, with one or more deep (mean depth: 15.1 +/- 9.6 mm), narrow (mean width: 0.62 +/- 0.49 cm^2) neuropathic ulcers located on the plantar aspect of the foot or plantar/dorsal aspect of the toes were randomly assigned to the study group or the control group. All subjects received the standard of care treatment with proper wound bed management, hydrocolloid/hydrocellular dressings, and offloading. Subjects in the study group additionally received autologous platelet-rich plasma gel, topically applied directly to the wound bed, every 2 to 3 weeks when deemed necessary by their healthcare provider.

Results
At Week 6, 55.3% (26/47) of the subjects in the study group had their diabetic foot ulcers closed, while 25.6% (11/43, one subject lost to follow-up) of the subjects in the control group had their diabetic foot ulcers closed. At Week 12, the end-of-study visit closure rate was 77.3% in the study group, compared to 35.1% in the control group.


Before


3 weeks, after one application


2 months, 2 applications



Group	Week 6	Week 12
PRP-Gel	**55.3%**	**77.3%**
Standard of Care	25.6%	35.1%
	p= <0.001	p= <0.001

Conclusions
Autologous platelet-rich plasma gel, when used in conjunction with the standard of care, may increase the successful closure rate of uninfected, non-ischemic diabetic foot ulcers penetrating to bone or joint.

Clavel S, Denizot C, Boëzennec B, Turzi A, Albache NA. A randomized, controlled, clinical study comparing the efficacy of an autologous standardized leucocyte-poor platelet gel with standard care for the treatment of chronic neuropathic diabetic foot ulcers. Manuscript submitted for publication.