

Effect of Platelet-Rich Plasma in Facial Nerve Regeneration Post-trauma in Rabbits

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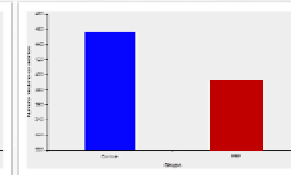
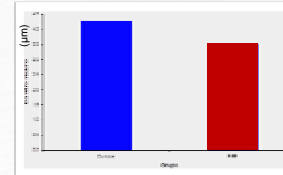
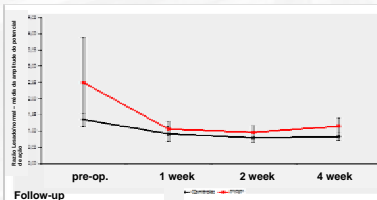
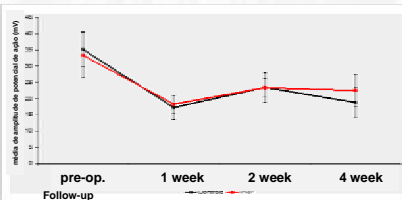
Introduction: The facial nerve is the cranial nerve most commonly affected in head and neck trauma. In incomplete nerve injury, the treatment is based on clinical therapeutics. And, therefore it depends on the development of new drugs or methods that assist the process of nerve regeneration. Growth factors have been studied for some time as a mechanism for speeding up tissue repair. The platelet-rich plasma (PRP) provides greater amounts of growth factors and an autologous concentration of platelets in a small volume of plasma.

Objective: To evaluate the effect of PRP on the regeneration process of the extratemporal facial nerve of rabbits following crush injury.

Material and Method: Thirty-one New Zealand rabbits underwent root compression extratemporal facial nerve unilaterally. After the injury, 19 rabbits were treated with platelet-rich plasma (PRP) and 12 rabbits didn't receive treatment. The rabbits were evaluated by surface electromyography (EMG) preoperatively, one, two and four weeks after the injury. They were sacrificed and histological examination of the nerve was performed. We evaluated the number of axons and average axon diameter.



Results: The EMG showed a decrease after injury, however with no statistical significance between groups. The ratio (L / N) of the EMG does not differ statistically between groups ($p = 0,326$) or during the follow-up ($p = 0,619$). The average EMG is statistically higher in the preoperative in relation to week 1 ($p = 0.008$). Among the other situations there are no statistically significant differences ($p > 0.05$). As for histological analysis, there was no increase in the number of axons and the average diameter of the facial nerve fibers compared to the group that was not treated with PRP (control and contralateral).



Conclusion: In this study, the use of PRP after lesion of extratemporal facial nerve crush in rabbits was not effective.