Oral Communication

OC-260

Application Mechanism and Wound Rehabilitation Effect of Platelet Rich Plasma for Pressure Injury After Spinal Cord Injury

Topic: Integrative Medicine

Xi Yu

West China Hospital, Sichuan University, Chengdu City, Sichuan Province, China

BACKGROUND

The management of pressure injury wounds after spinal cord injury (SCI) is considered a critical challenge for rehabilitation professionals and clinicians. Autologous platelet-rich plasma (PRP) is defined as concentrated platelet products after centrifuging from whole blood, providing multiple bioactive growth factors, and regulating target tissue repair and reconstruction. At present, both PRP injection and PRP gel have been applied in different clinical orientations for tissue repair and regeneration.

METHODS

In this study, we prospectively investigated 20 pressure injuries after SCI treated with PRP wound therapy, combining PRP injection with PRP gel for each wound. PRP was prepared through apheresis and analyzed for growth factors, VEGF, and EGF by ELISA assay. Wound features, including wound sizes, evaluation scores, and histological observation from wound tissue biopsy were collected and analyzed.

RESULTS

Wound evaluations showed that all wound sizes had reduced. Outcomes demonstrated that the wound sizes decreased after two consecutive PRP treatments and showed significance since the three-week time-point ($p < 0.05$ for both three-week and four-week time-points), indicating that PRP wound therapy may require an onset time. Five wounds were completely closed in the PRP group while two wounds healed in the control group. ELISA assays showed PRP with four time PLT had preponderant VEGF and EGF concentrations and no statistical differences between PRP and PRP gel. H&E staining denoted keratinocyte proliferation and dermal layer repair and regeneration. Moreover, all inflammation indexes were effectively decreased to normal ranges, and infections were eliminated at the end of PRP wound therapy. Further evaluation showed that PUSH scores decreased in the PRP group at three-week and four-week treatments ($p < 0.05$). Clinical Trial registration no. ChiCTR2200058138.

CONCLUSION

This prospective RCT presented that autologous PRP with four-time PLT showed superior growth factor concentrations and enhanced wound healing results. The results of wound rehabilitation assessments indicated PRP therapy, combined PRP injection with PRP gel could be considered an effective treatment for pressure injury wounds after spinal cord injury

Statement of Disclosures

None

Corresponding Author:
Xi Yu
West China Hospital, Sichuan University, Chengdu City, Sichuan Province, China
Email: yuxi@wchscu.cn

Doi: 10.5606/archisprm.2026.OC-260