

## The Injection of a Freshly Manufactured Hyaluronan Fragment Promotes Healing of Chronic Wounds: A Clinical Study

**Authors :** Dylan Treger, Lujia Zhang, Xiaoxiao Jia, Jessica H. Hui, Munkh-Amgalan Gantumur, Mizhou Hui, Li Liu

**Abstract :** Hyaluronic acid (HA) is involved in wound healing via inflammation, granulation, and re-epithelialization mechanisms. The poor physical properties of natural high-molecular-weight polymers limit their direct use in the medical field. In this clinical study, we investigated whether the local injection of a tissue-permeable 35 kDa HA fragment (HA35) could favor the healing process in patients with chronic wounds accompanied by neuropathic pain. The HA35 fragments were freshly manufactured by degradation of high-molecular-weight HA with bovine testis-derived hyaluronidase PH20. Twenty patients in this study had nonhealing wounds and wound-related pain for more than 3 months. Freshly produced HA35 was locally injected into healthy skin immediately surrounding chronic wounds once a day for 10 days. Wound-associated pain and the degree of wound healing were evaluated. The injection of HA35 relieved the pain associated with chronic wounds in 24 hours. HA35 treatment significantly promoted the healing of chronic wounds, including expanded fresh granulation tissue on the wounds; reduced darkness or redness, dryness, and damaged areas on the surface of the skin surrounding the wounds; and decreased the size of the wound area. It can be concluded that the topical injection of tissue-permeable HA35 around chronic wounds has great potential to promote wound healing.

**Keywords :** 35 kDa hyaluronan fragment HA35, chronic wound, wound healing, tissue permeability

**Conference Title :** ICWCM 2023 : International Conference on Wound Care Management

**Conference Location :** Rome, Italy

**Conference Dates :** December 11-12, 2023