Medical Xpress

'Spray-on skin' could revolutionize treatment of venous leg ulcers

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The treatment, which consists of skin cells (keratinocytes and fibroblasts) suspended in a mixture of different types of proteins associated with blood clotting, was tested on a group of 228 patients suffering from venous leg ulcers, the most common type of leg ulcer. All patients who took part in the trial were also treated with compression bandages, the most common treatment currently available for leg ulcers.

Patients who received the treatment – sprayed on to the wound every seven days or every 14 days – experienced faster healing and greater likelihood of wound closure than those in the control group. The study examined the effects of different dosages of the treatment, with those who received the most effective dosage experiencing a 52% greater likelihood of wound closure than the control group at 12 weeks, and a 16% greater reduction in wound area after 7 days. In addition to closing a higher overall proportion of wounds, the active treatment also accelerated wound closure by an average of 21 days compared to the control group.

In the UK, venous leg ulcers affect around 1 person in 500, with this rate rising sharply with age: an estimated 1 person in 50 over the age of 80 develops venous leg ulcers. The ulcers develop when persistently high blood pressure in the veins of the legs damages the skin, ultimately causing it to break down and form an ulcer. People who are unable to move properly, obese people, and those with varicose veins are all at higher risk of developing venous leg ulcers.

Standard treatment consists of applying compression bandages, infection control, and standard wound dressings, but this only heals between 30% and 70% of ulcers, and no existing treatments have been shown to speed the healing of the condition. While skin grafts have been used to treat leg ulcers, this results in a further wound at the site from which the skin used for the graft is taken.

According to one of the study's authors, Dr Herbert Slade of Healthpoint Biotherapeutics, Texas, USA: "The treatment we tested in this study has the potential to vastly improve recovery times and overall recovery from leg ulcers, without the need for a skin graft. This means not only that the patient doesn't acquire a new wound where the graft is taken from, but also that the spray-on solution can be available as soon as required – skin grafts take a certain amount of time to prepare, which exposes the patient to further discomfort and risk of infection."

In a linked Comment, Professor Dr Matthias Augustin of the University Medical Centre, Hamburg, Germany, welcomes the findings, stating that: "Even though compression is, and will remain, the basis of venous leg ulcer treatment, hard-to-heal ulcers do need additional therapy. In these wounds, prolonged futile, conservative treatment will increase costs without additional benefit. Therefore, the temporary higher costs for additional cell therapy can be justified as an investment in improved healing."

Professor Dr Augustin also encourages further investigation of this type of treatment, pointing out that: "The benefits observed in this study could well be observed also in other chronic wounds like ischemic and diabetic foot ulcers."

More information: www.thelancet.com/journals/lan … (12)60644-8/abstract

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