PILOT STUDY ON STAGNATING VENOUS LEG ULCER PATIENTS TREATED WITH A READY TO WEAR TUBULAR COMPRESSION SYSTEM

Bela Pagrach, RN, Wound and Diabetes specialist nurse
Amstelland Hospital, Amstelveen, Netherlands. bela2910@hotmail.com

Aim :

A pilot study was designed to evaluate the efficacy of a *collagen dressing (SC) on inflammation reduction and re-starting the stagnating[1] healing process (Fig 1) in five venous leg ulcers patients in an ambulant setting.
SC has in vitro[2] shown to have a high binding capacity for different pro-inflammatory mediators, like proteases and cytokines, (Fig. 2).
The *collagen dressing employed in the study is able to absorb large amounts of fluids, because of its porous structure and high capillary activity, while retaining a moist wound environment. (Fig.3)

Methods :

Patients with non-infected, stagnating venous leg ulcers were included in the study, using case ascertainment. Vascular screening was done using Doppler (ABPI) to confirm venous disease. An ulcer was defined stagnant if it did not respond to standard treatment (short stretch compression and a foam dressing), within a period of three weeks. Other causes for a delay in healing, such as necrotic and/or sloughy tissue, infection, ischemia, etc. were ruled out. Patients received a *collagen dressing and a **foam as a secondary dressing, for a treatment period of 28 days, after which the collagen dressing was discontinued and the foam used as a primary dressing. For compression patients received a two layer ***tubular compression system. The 1st layer (a silk like stocking) provides about 10 mmHg and is left in place during the night. The second compression layer (30 mmHg) is easily applied and removed over the smooth 1st layer and is re-applied in the morning (Fig.4).
Wound healing was assessed using clinical observation and digital photographs, comparing day 0 versus day 28 results. Patients were then followed until ulcer closure.

Results :

The stagnating ulcers started to heal within the 28 days of collagen treatment, with a mean healing time of 18.7 weeks. The collagen dressing was comfortable for the patients and safe. The compression system was easy to apply and well accepted by both the nurses and the patients.

Conclusion:

The results of this pilot indicate collagen dressings combined with the tubular compression system started the stagnating healing process in the treated venous ulcer patients.

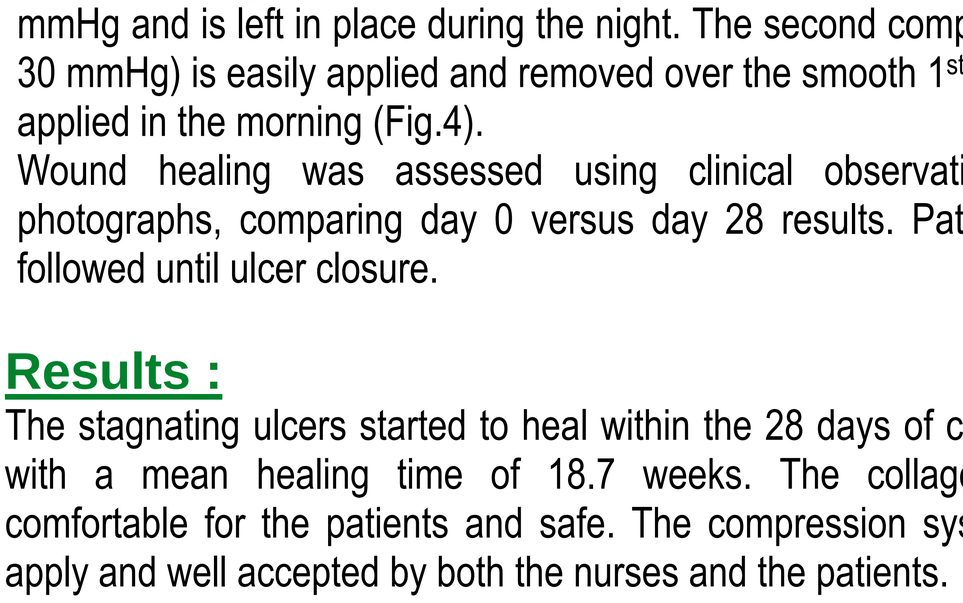


Fig 4: Typical case: Signs of inflammation and minor edema, suitable for compression with the tubular system

Scientific grant: Lohman & Rauscher GmbH, Rengsdorf, Germany

***Suprasorb® C, **Suprasorb® P, ***Actico® Silk, Lohmann & Rauscher GmbH, Rengsdorf, Germany**

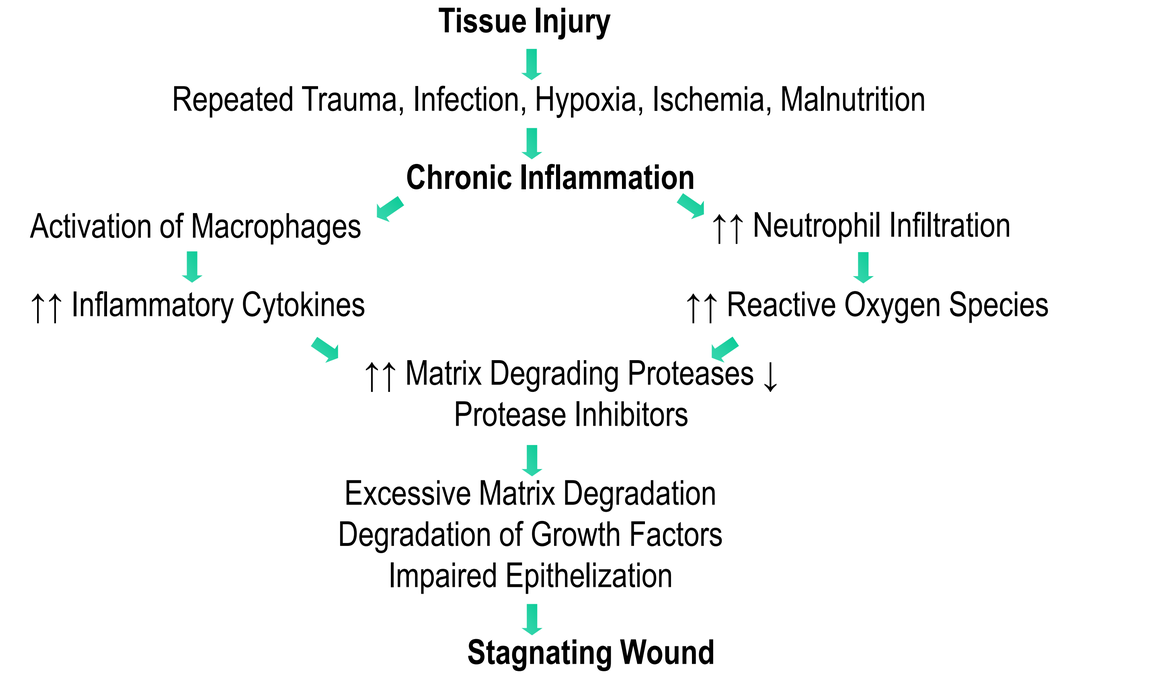


Fig 1: Physiology of the chronic wound[2]

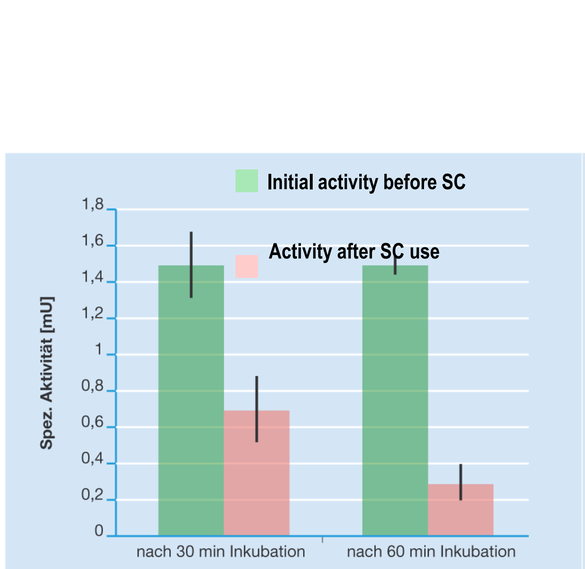
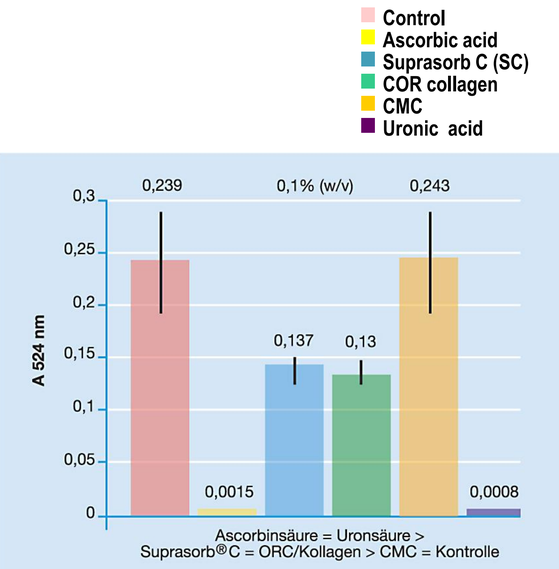
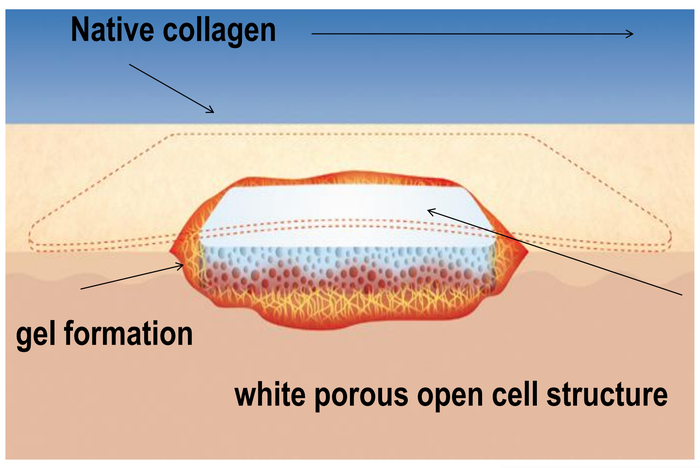


Fig 2: Reduction of MMP-9 by SC



Binding of free radicals with SC



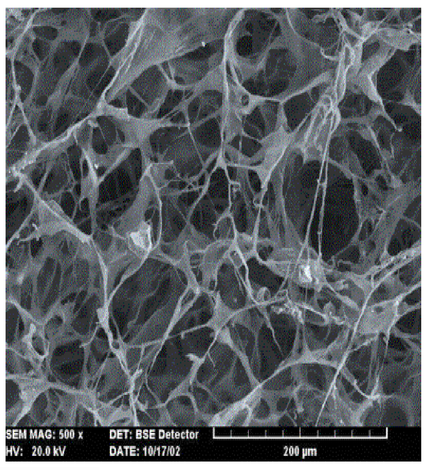


Fig 3: Cell structure of SC

References :

1. Womeh N et al. Physiology of the stagnating wound. Clin Plast Surg 1998; 25(3):341-56
2. Wiegand C, Abel M, Ruth P, Wilhelms T. 2009 Wiley Periodicals, Part B: Appl Biomater, 2009

21st Conference of the European Wound Management Association (EWMA), 25 - 27 May 2011 Brussels