Autolytic wound cleansing potential of different cellulose-based dressings

Wild Th[1], Schwarz Ch[3], Payrich Martina[3], Bruckner M[1], Eberlein Th[2]

[1] *Paracelsus Medical University, Salzburg, Austria*
[2] *WundKompetenzZentrum Linz, Austria*
[3] *Medical University of Vienna, Austria*

Introduction:

In the European countries, venous leg ulcer occurs with an incidence of 1-2% of the total population. The basic causal therapy consists of compression therapy on the one hand and traditional surgery for varicose veins on the other. To date there is no conclusive evidence for local therapy, i.e. there is no basis for disproving the validity of the multimodal treatment approach. With venous leg ulcers, the primary goals of therapy consist in exudates management and the removal of wound coating. Exudation can be the result of two different pathologies: either the compression therapy is inadequate, or there is also infection. At the international level, there is a great deal of controversy as to whether venous leg ulcer should generally be regarded of contaminated or not. Basically any open skin lesion is a potential invasion site for microorganisms. This means that one has to achieve adequate exudation management. In order to prevent infection, but also apply the principal of moist wound management.

Material and Methods:

Two groups were formed (20/20) - both groups with phase-specific compression therapy. Group 1 was treated with a HydroBalanced biocellulose dressing*, the other one was treated with hydrocellulose dressing**. For over four weeks each patient was visited once a week where a picture was taken, which was analysed with WHAT (Wound healing analyzing tool) a software which enables to specify wound's tissue by a color-based analysis of a digital picture of the wound. Furthermore each visit the VAS (Visual Pain Analogue Scale) was used to quantify subjective pain of the patient.

Results:

Results showed that the decrease of the proportion of fibrin was higher in group 1 (HydroBalanced biocellulose dressing*) than in group 2 (hydrocellulose dressing**).

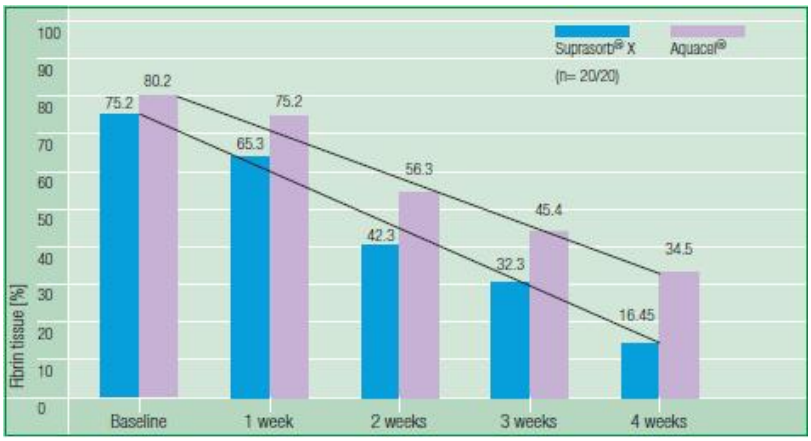
The decrease of fibrin was in group 1 (HydroBalanced biocellulose dressing*) from 75.2% baseline, after 1 week 65.3%, after 2 weeks 42.3%, after 3 weeks 32.3% and 16.45% after 4 weeks. The decrease from fibrin was in group 2 (hydrocellulose dressing**) from 80.2% baseline, after 1 week 75.2%, after 2 weeks 56.3%, after 3 weeks 45.4% and 34.5% after 4 weeks. The both group shows a reduction of fibrin (cleansing effect) in group 1 (HydroBalanced biocellulose dressing*) 2.098% vs. group 2 (hydrocellulose dressing**) 1.63% per day.

The pain scale after dressing change shows in group1 (HydroBalanced biocellulose dressing*) VAS 1.3 vs. group 2 (hydrocellulose dressing**) VAS 3.22.

Conclusion:

Further studies have to be performed to find out the strengths and the weaknesses of each dressing. Due to the incredible number of patients suffering from chronic leg ulcers, it is important to work out a simple but sufficient treatment regime, which is based on randomised, prospective, controlled studies.

* HydroBalanced biocellulose dressing: Suprasorb® X, Lohmann & Rauscher
** hydrocellulose dressing: Aquacel®, ConvaTec



Two groups were formed (20/20) both groups with phase-specific compression therapy. Group 1 was treated with HydroBalanced biocellulose dressing*, the other one was treated with hydrocellulose dressing. For over four weeks each patient was visited once a week where a picture was taken, which was analysed with WHAT (Wound Healing Analyzing Tool) a software which enables to specify wound's tissue by a color-based analysis of a digital picture of the wound. The graph reflects the reduction of sludge in percent.**

Scientific grant of Lohmann & Rauscher GmbH & Co KG, Rengsdorf/Germany

19th Conference of the European Wound Management Association (EWMA) 20.-22. May 2009, Helsinki, Finland