Pressemitteilung

Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften
Wolfgang Müller M.A., Prof. Dr. G. Hoffmann
17.12.2009
http://idw-online.de/de/news349364
Forschungsergebnisse, Wissenschaftliche Publikationen
Medizin
überregional

Water-filtered infrared-A (wIRA) in acute and chronic wounds

Water-filtered infrared-A (wIRA), as a special form of heat radiation with a high tissue penetration and a low thermal load to the skin surface, can improve the healing of acute and chronic wounds. wIRA increases tissue temperature (+2.7°C at a tissue depth of 2 cm), tissue oxygen partial pressure (+32% at a tissue depth of 2 cm) and tissue perfusion. These three factors are decisive for a sufficient supply of tissue with energy and oxygen and consequently also for wound healing and infection defense. wIRA acts both by thermal (related to heat energy transfer) and thermic as well as by non-thermal and non-thermic effects.

In a bilingual review article, just published on December 16th, 2009, in the medical e-Journal “GMS Krankenhaushygiene Interdisziplinär” within Open Access-portal “German Medical Science” of the AWMF (Association of the Scientific Medical Societies in Germany), working mechanisms of wIRA and results of 6 scientific studies with wIRA are discussed.

wIRA can considerably alleviate pain (without any exception during 230 irradiations) with substantially less need for analgesics (52 - 69 % less in the groups with wIRA compared to the control groups). It also diminishes exudation and inflammation and can show positive immunomodulatory effects.

The overall evaluation of the effect of irradiation as well as the wound healing and the cosmetic result (assessed on visual analogue scales) were markedly better in the group with wIRA compared to the control group.

wIRA can advance wound healing or improve an impaired wound healing both in acute and in chronic wounds including infected wounds.

A median reduction of wound size of 90 % in severely burned children was already achieved after 9 days in the group with wIRA compared to 13 days in the control group.

With wIRA a wound closure and normalization of the thermographic image in otherwise recalcitrant chronic venous stasis ulcers was reached. The attached figure presents the successful healing process of a chronic venous stasis ulcer of the lower leg under therapy with wIRA. In a study with chronic venous stasis ulcers of the lower leg it lasted on average 18 days with wIRA versus 42 days without wIRA until complete wound closure.

After major abdominal surgery there was a trend in favor of the wIRA group to a lower rate of total wound infections (7 % versus 15 %) including late infections following discharge from hospital (0 % versus 8 %) and a trend towards a shorter postoperative hospital stay (9 versus 11 days).

Even the normal wound healing process can be improved with wIRA.

The mentioned effects have been proven in six prospective studies, with most of the effects having an evidence level of Ia/Ib.

wIRA represents a valuable therapy option and can generally be recommended for use in the treatment of acute as well as of chronic wounds.

Publication (bilingual):
Hoffmann G. Water-filtered infrared-A (wIRA) in acute and chronic wounds [review]. Wassergefiltertes Infrarot A (wIRA) bei akuten und chronischen Wunden [Übersichtsarbeit].
Contact addresses for wIRA for acute wounds/operation wounds:

PD Dr. med. Mark Hartel
Technical University Munich, Department of Surgery
Ismaninger Strasse 22, D-81675 Munich, Germany
Tel: +49-89-4140-5099
Mark.Hartel@chir.med.tu-muenchen.de

Prof. Dr. med. Ulrich Finke
Sankt Katharinen Hospital, Department of Surgery
Seckbacher Landstrasse 65, D-60389 Frankfurt am Main, Germany
Tel: +49-69-4603-1430, Fax: +49-69-4603-1429
Ulrich.Finke@sankt-katharinen-ffm.de

Contact address for wIRA for urological operation wounds:

Prof. Dr. med. U.W. Tunn
Medical Center Offenbach, Department of Urology
Starkenburgring 66, D-63069 Offenbach/Main, Germany
Tel: +49-69-8405-3840, Fax: +49-69-8405-4080
Tunn@em.uni-frankfurt.de or uw@tunn.de

Contact address for wIRA for burns:

Dr. med. Peter Illing
Children's Hospital Park Schönfeld, Department of Pediatric Surgery
Frankfurter Strasse 167, D-34121 Kassel, Germany
Tel: +49-561-9285-124, Fax: +49-561-9285-230
P.Illing@park-schoenfeld.de

Contact addresses for wIRA for chronic wounds and special dermatological problems (e.g. morphea):

Dr. med. Verena von Felbert
RWTH Aachen University, Department of Dermatology
Pauwelsstrasse 30, D-52074 Aachen, Germany
Tel: +49-241-80-35494, Fax: +49-241-80-82413
VvonFelbert@ukaachen.de

Dr. med. Hauke Schumann
University Medical Center Freiburg, Department of Dermatology
Hauptstrasse 7, D-79104 Freiburg, Germany
Tel: +49-761-270-6701, Fax: +49-761-270-6829
Hauke.Schumann@uniklinik-freiburg.de
Healing process with application of wIRA
Prof. Dr. G. Hoffmann