EXTRACORPOREAL SHOCKWAVE THERAPY FOR THE MANAGEMENT OF HYPERTROPHIC SCARS: PRELIMINARY RESULTS OF A RANDOMISED PLACEBO CONTROLLED TRIAL (171)

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Introduction: Hypertrophic and contractile scars are common problems after burns and other trauma and can lead to functional and cosmetic deformities. A wide variety of non-invasive treatments has been advocated for the management of these scars. Unfortunately the reported efficacy has not been consistent and especially in the first three months after wound closure fragility of the scarred skin limits the choices of care providers for adequate treatment. Extracorporeal shockwave therapy (ESWT), which mainly targets the fibroblasts in scar tissue, has already proven to be effective as a wound healing modality and can be characterised as non-invasive, mostly painless and safe. The aim of this study is to investigate the efficacy of extracorporeal shockwave therapy on the long-term outcome of hypertrophic scars.

Methods: The assessment tools used were a Minolta Chromameter® for redness, the DermaLab® USB open chamber evaporimeter for trans-epidermal water loss, the Cutometer® for elasticity and the Patient and Observer Scar Assessment Scale (POSAS) for clinical assessment.

All patients were randomly assigned to a group and treated with conservative scar management (pressure garments, silicone and moisturisers as prescribed by the treating physician). In the intervention group patients were additionally treated with low-energy focused shockwave therapy once a week during 10 weeks. The control group consisted of patients who were additionally treated with shockwave therapy using a placebo treatment head. The patients were tested at baseline, after one month, three months and six months.

Results: The preliminary results after three months are presented. The intervention group consisted of 11 patients who were on average 44.9 (SD=15.8) years old with a mean scar age of 2.0 months (SD=1.3). Thirteen patients who were on average 38.3 (SD=15.4) years old with a mean scar age of 2.6 months (SD=1.5) formed the control group. The results of the clinical assessments, measured by the POSAS, showed improvement for colour (p=.047), pliability (p<.0005) and global score (p<.04). Only for POSAS pliability, reported by the patient, there was a statistically significant difference between the interventions in favour of the ESWT group (p=.045).

The results of the objective assessments were almost all in favour of the ESWT group. Comparable results were only noticed for colour (redness), where both groups showed a statistically significant improvement (p<.0005). Statistically significant improvements were also registered for colour (brightness), elasticity and water vapour permeability in the ESWT group (p<.02). For water vapour permeability and elasticity, the ESWT group seemed to perform statistically significantly better than the control group. These results need to be confirmed by the results after six months and for a larger sample size.

Conclusion:

Focused extracorporeal shockwave therapy could give added value to the non-invasive treatment of hypertrophic and contractile scars already in the first three months after wound closure.