THE EFFECT OF PRUS® DEPRESSOMASSAGE ON THE ELASTICITY AND SKIN FOLD THICKNESS OF BURN SCARS

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Rationale :

Hypertrophic scarring and decreased skin elasticity are common after burn injury (1). This can cause many functional problems. The main objective of this study is to investigate the effect of PRUS® depressomassage on the elasticity and skin fold thickness of burn scars.

Methods :

Skin elasticity was examined with the Dermalab® elasticity meter (2), which measures the force needed to lift the skin with vacuum-suction and is expressed in MPa. Skin fold thickness was examined with a Harpenden® skin fold caliper (3), which can measure a skin fold up to 0,2 mm correct. Clinical examination was done with the POSAS (4), assessed by the patient and the observer.
In total 36 burn patients participated in this study, of which 22 were treated with depressomassage (test group) and 14 were treated with classical physiotherapy (control group). In the test group, scars were on average 22 months old; in the control group 19 months. The patients were tested in the first week of the treatments, after one month, three months and six months.

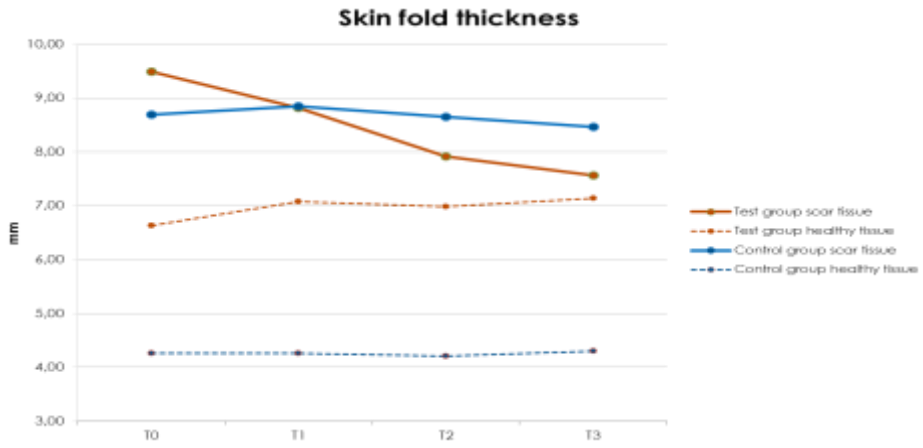
At this time we can present some preliminary results after six months.
This study is part of a larger research on the physical effects of PRUS® depressomassage on scar tissue.

Results :

SKIN FOLD THICKNESS

The results showed an improvement of the skin fold thickness of the scar tissue of 16%, compared to no improvement in the healthy skin.

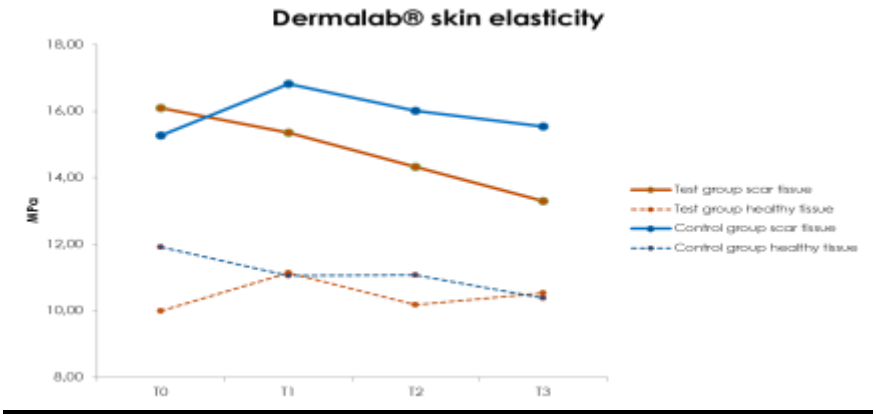
	T0	T1	T2	T3	P-value
SFT test group scar tissue	9,49	8,82	7,92	7,56	0,000
SFT control group scar tissue	6,64	7,08	6,99	7,14	0,590
SFT test group healthy tissue	8,70	8,86	8,66	8,47	0,893
SFT control group healthy tissue	4,26	4,26	4,21	4,31	0,672



ELASTICITY

The results showed an improvement of scar elasticity of 21% compared to no improvement in the healthy skin.

	T0	T1	T2	T3	P-value
Elasticity test group scar tissue	16,09	15,36	14,32	13,30	0,000
Elasticity control group scar tissue	9,99	11,13	10,17	10,53	0,502
Elasticity test group healthy tissue	15,27	16,83	16,01	15,54	0,248
Elasticity control group healthy tissue	11,92	11,05	11,07	10,38	0,209



POSAS

For the clinical assessment we found a significant improvement after six months for the test group (POSAS-O -43% (p<.001), POSAS-P -37% (p<.001)). Also for the control group a significant improvement was obtained (POSAS-P -29% (p<.03)), which probably can be explained by a placebo effect. The POSAS-O of the control group showed no significant improvement over time.

	T0	T1	T2	T3	P-value
Test group patient	6,59	4,50	3,68	4,14	0,000
Test group observer	5,82	4,55	3,59	3,32	0,027
Control group patient	6,43	5,79	5,64	4,50	0,000
Control group observer	4,86	4,79	4,50	4,36	0,227

Conclusion :

PRUS® depressomassage has an immediate positive effect on skin elasticity and skin fold thickness, compared to classical physiotherapy.
These findings may indicate that specialized scar therapies, such as PRUS® depressomassage are a preferable alternative to classical physiotherapy, when treating scars.

References :

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