EFFICACY AND TOLERABILITY OF A MEDICAL SKIN CARE OIL IN SUBJECTS WITH STRIAE DISTENSAE

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BACKGROUND

Striae distensae are an appreciable cosmetic problem, which is affecting up to 90 percent of pregnant women. They usually develop vertically to the stretching direction of the body and change skin in the shape of stripes. Both clinically and histologically, striae distensae can be regarded as scars.
The objective of the study was an application test during the treatment with a medical skin care oil (Eucerin Natural Caring Oil, Beiersdorf AG, Hamburg) to investigate efficacy, skin tolerability and caring properties of the product on sensitive skin conditions with striae distensae.

METHODS

Investigations regarding skin surface structure were done with the SELS method (Surface Evaluation of Living Skin, Visioscan, Courage & Khazaka Electronic, Cologne, Germany). Ultra structure of the skin was analysed by ultrasound measurements (B-Scan) with an 20 MHz system (Derma Scan C, Cortex Technology, Denmark). Capillary blood flow was determined by Laser-Doppler-Flowmetry (O2C, Lea Instruments, Germany). Clinical score evaluation of the striae was performed prior and during the study. Additionally, compatibility and product characteristics as well as acceptance were evaluated at the end of the study.

STUDY DESIGN

The study was carried out as an open dermatologically controlled mono-centric in-use test. 30 female healthy volunteers (18-35 years) who had given birth between 6 and at the most 12 month ago and suffered from striae distensae were included into the study. The test product was to be applied twice daily to a defined abdominal test area with 10 minutes of massaging over a period of 6 month. A further skin area remained untreated for the whole duration of the study and was used as control. Measuring points for all measurements were before treatment and after 2, 4 and 6 month.

PHOTOGRAPHIC DOCUMENTATION

Parallel to the above mentioned measurements photos of the state of the skin were taken before and after the study of all the test subjects included into the study.

STATISTICS

For all parameters and all measuring time points descriptive statistics (mean, standard deviation, median) were evaluated. Percental changes of all measured data were calculated and the p-values determined according to the 2-sided t-test (Excel®). For the statistical calculations of the p-value a significance level of p<0.05 was defined.

RESULTS

Measurements of the skin surface

Figure 1: Skin surface before and after treatment

Skin Surface (Scaling)			
Treatment	decrease	- 62 %	p<0.05
No Treatment	decrease	- 28%	n.s.
Percental change of means from T0 to month 6			

Skin Surface (Roughness)			
Treatment	decrease	- 5 %	n.s.
No Treatment	increase	+ 12 %	n.s.
Percental change of means from T0 to month 6			

Table 1

Ultrasound measurements (B-Scan)

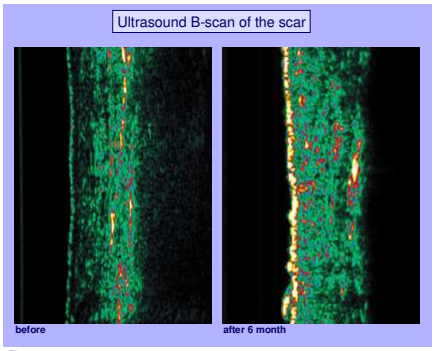

Figure 2

Measurement of the area of the scar by means of ultrasound

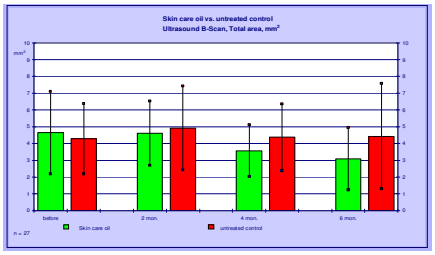

Figure 2a

Ultrasound measurements (area of the scar)			
Treatment	decrease	- 33 %	p<0.05
No Treatment	increase	+ 3%	n.s.
Percental change of means from T0 to month 6			

Ultrasound measurements (perimeter of the scar)			
Treatment	decrease	- 18 %	p<0.05
No Treatment	increase	+ 3 %	n.s.
Percental change of means from T0 to month 6			

Table 2

Measurements of the capillary blood flow

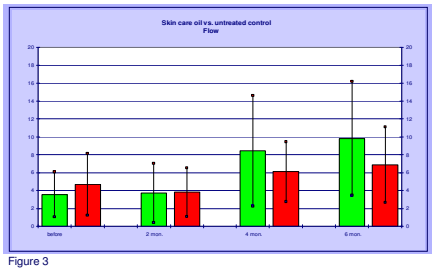

Figure 3

Capillary blood flow (Flow)			
Treatment	increase	+107 %	p<0.05
No Treatment	increase	+ 47 %	p<0.05
Percental change of means from T0 to month 6			

Capillary blood flow (Velocity)			
Treatment	increase	+ 54 %	p<0.05
No Treatment	no change	+ 0 %	n.s.
Percental change of means from T0 to month 6			

Table 3

Photographic evaluation

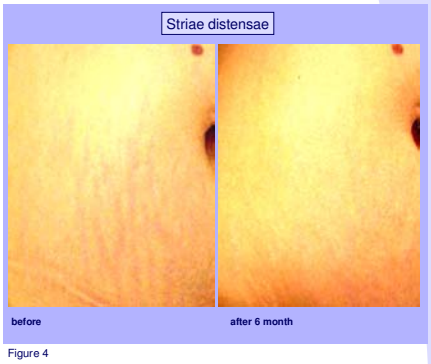

Figure 4

Expert Score evaluation			
Treatment	decrease	- 22 %	p<0.05
No Treatment	decrease	- 14 %	p<0.05
Percental change of means from T0 to month 6			

Table 4

SUMMARY OF RESULTS

The following results were obtained in this study:

1. Significant decrease of scaling (-68%) in the treated area. Slight decrease of the roughness of the skin (5%), Table 1.
2. Significant decrease of the scar area (-33%) after treatment. Significant decrease of the perimeter of the scar (-18%), Figure 2 and 2a, Table 2.
3. Significant increase of capillary blood flow (flow +107% and velocity +54%) after treatment, Figure 3, Table 3.
4. Significant decrease of the score evaluation (-22%) of the stretch marks after treatment, Figure 4, Table 4.
5. Excellent compatibility, no undesired side effects occurred during the study.
6. Evaluation of the acceptance and product characteristics by the volunteers was rated to be good.
7. No or only slight improvements could be detected in the untreated control area.

CONCLUSIONS

It can be stated that efficacy was proven especially by measurements of the ultra-structure of the skin, the capillary blood perfusion and the surface structure. Due to the good acceptance of Eucerin Natural Caring Oil, Beiersdorf, Hamburg, it can be recommended as an effective and well tolerated product for the daily care of sensitive skin with striae distensae.

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