



The High Frequency (HF) Ultrasound as a Useful Imaging Technique for the Efficacy Assessment of Different Anti-Cellulite Treatments

PDF (Size: 1388KB) PP. 90-98 DOI: 10.4236/jcdda.2013.31A013

Author(s)

Młosek Robert Krzysztof, Malinowska Sylwia, Dębowska Renata, Lewandowski Marcin, Nowicki Andrzej

ABSTRACT

The purpose of the research was to evaluate the role of high frequency ultrasound in monitoring and efficacy assessment of anti-cellulite treatments. A group of 66 women used 3 different types of anti-cellulite treatments; additionally a placebo group (n = 18) was created. The μ -Scan ultrasound device with a 35 MHz mechanical probe was used for the examinations. The following parameters were subjected to the ultrasound evaluation: epidermis thickness, dermis thickness, dermis echogenicity, the length and area of subcutaneous tissue bands projecting into the dermis (dermis-hypodermis junction), as well as the presence/absence of edema within the dermis. As a result of anti-cellulite treatment, the length and area of dermis-hypodermis junction significantly decreased, and dermis echogenicity significantly increased. Ultrasound imaging made it possible to evaluate the efficacy of the applied treatments. The high frequency ultrasound is a useful imaging technique for the application in aesthetic dermatology and cosmetology.

KEYWORDS

Aesthetic Medicine; Cellulite; Anti-Cellulite Treatment; High Frequency Ultrasound; Skin Ultrasound

Cite this paper

M. Krzysztof, M. Sylwia, D. Renata, L. Marcin and N. Andrzej, "The High Frequency (HF) Ultrasound as a Useful Imaging Technique for the Efficacy Assessment of Different Anti-Cellulite Treatments," *Journal of Cosmetics, Dermatological Sciences and Applications*, Vol. 3 No. 1A, 2013, pp. 90-98. doi: 10.4236/jcdda.2013.31A013.

References

- [1] K. Hoffmann, S. Gammal and K. Winkler, "Skin Tumors in High-Frequency Ultrasound," In: P. Altmeyer, S. Gammal and K. Hoffmann, Eds., *Ultrasound in Dermatology*, 1992, pp. 181-202.
- [2] T. Yano, H. Fukuita, S. Ueno and A. Fukumoto, "40 MHz Ultrasound Diagnostics System for Dermatologic Examination," *IEEE 1987 Ultrasonic Symposium Proceeding*, 14-16 October 1987, pp. 857-878.
- [3] U. Wollina, A. Gildman and U. Berger, "Esthetic and Cosmetic Dermatology," *Dermatology and Therapy*, Vol. 21, No. 1, 2008, pp. 118-150. doi:10.1111/j.1529-8019.2008.00179.x
- [4] J. P. Ortonne, M. Zartarian and M. Verschoore, C. Queille-Roussel and L. Duteil, "Cellulite and Skin Ageing: Is There Any Interaction?" *Journal of the European Academy of Dermatology and Venereology*, Vol. 22, No. 7, 2008, pp. 827-834. doi:10.1111/j.1468-3083.2007.02570.x
- [5] P. T. Pugliese, "The Pathogenesis of Cellulite: A New Concept," *Journal of Cosmetic Dermatology*, Vol. 6, No. 2, 2007, pp. 140-142. doi:10.1111/j.1473-2165.2007.00312.x
- [6] B. Querlux, C. Cornillon and O. Jolivet, "Anatomy and Physiology of Subcutaneous Adipose Tissue by in Vivo Magnetic Resonance Imaging and Spectroscopy: Relationships with Sex and Presence of Cellulite," *Skin Research and Technology*, Vol. 8, No. 2, 2002, pp. 118-124. doi:10.1034/j.1600-0846.2002.00331.x

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- [7] M. Rosenbaum, V. Prieto, J. Hellmer, M. Boschmann, J. Krueger, R. L. Leibel and A. G. Ship, " An Exploratory Investigation of the Morphology and Biochemistry of Cellulite," *Plastic and Reconstructive Surgery*, Vol. 101, No. 7, 1998, pp. 1934-1939. doi:10.1097/00006534-199806000-00025
- [8] F. Nürnberger and G. Müller, " So Called Cellulite: An Invented Disease," *Journal of Dermatologic Surgery & Oncology*, Vol. 4, No. 3, 1978, pp. 221-229.
- [9] S. Bielfeldt, P. Buttgereit, M. Brandt, G. Springmann and K. P. Wilhelm, " Non-Invasive Evaluation Techniques to Quantify the Efficacy of Cosmetic Anti-Cellulite Products," *Skin Research and Technology*, Vol. 14, No. 3, 2008, pp. 336-346. doi:10.1111/j.1600-0846.2008.00300.x
- [10] C. Vincent, M. Szubert, R. Debowska, K. Bazela, I. Eris, L. Rózański, M. Stroiński, Z. Jaskólska and A. Duszyńska, " Zastosowanie Termografii w Diagnostyce Cellulite," *Dermatology Estetyczna*, Vol. 8, No. 2, 2006, pp. 85-89.
- [11] D. M. Hexsel, M. Abreu, T. C. Rodrigues, M. Soirefmann, D. Z. do Prado and M. M. Gamboa, " Side-by-Side Comparison of Areas with and without Cellulite Depressions Using Magnetic Resonance Imaging," *Dermatologic Surgery*, Vol. 35, No. 10, 2009, pp. 1471-1477. doi:10.1111/j.1524-4725.2009.01260.x
- [12] R. K. Mlosek, R. Debowska, M. Lewandowski, S. Malinowska, R. Truszkowski, A. Nowicki and I. Eris, " The Use of High Frequency Ultrasonography in Monitoring Anti-Cellulite Therapy-Own Experience," *Polish Journal of Cosmetology*, Vol. 11, No. 4, 2008, pp. 283-294.
- [13] M. Lewandowski and A. Nowicki, " High Frequency Coded Imaging System with RF Software Signal Processing," *IEEE UFFC*, Vol. 55, No. 8, 2008, pp. 1878-1882. doi:10.1109/TUFFC.2008.871
- [14] R. Białynicki-Birula, E. Baran and R. Kulis-Orzechowska, " Efficacy Evaluation of Anti-Cellulite Activity of Cosmetics Containing Mud-Extractions," *Dermatologia Estetyczna*, Vol. 6, No. 3, 2004, pp. 155-159.
- [15] M. Gniadecka and G. B. E. Jamec, " Quantitative Evaluation of Chronological Ageing and Photoageing in Vivo: Studies on Skin Echogenicity and Thickness," *British Journal of Dermatology*, Vol. 139, 1998, pp. 815-882. doi:10.1046/j.1365-2133.1998.02506.x
- [16] M. Gniadecka, " Effects of Ageing on Dermal Echogenicity," *Skin Research and Technology*, Vol. 7, 2001, pp. 204- 207. doi:10.1034/j.1600-0846.2001.70310.x