

ESWT for skin rejuvenation

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Introduction: Acoustic wave therapy (AWT) is a biostimulatory noninvasive measure for facial rejuvenation. It follows an anatomical-driven approach on the facial muscles. Based on >40 scientific papers proofing AWT can reduce muscle tone in spasticity similar to the effect of Botulinum toxin, the same effect can be seen in the face. However, radial AWT in the face has to be performed with special emphasis on the pain levels of the given client. This study thought to:

1. To assess whether frequency (5-21Hz) of radial acoustic wave therapy (AWT) plays a role in facial anti-aging shockwave therapy.
2. What applicator is the least painful for facial rejuvenation AWT.

Methods: 12 females were assessed regarding the pain during radial AWT on the procerus muscle, which is in TCM Yintang Ex2 acupuncture point. Radial AWT was used with different pressures (0,3/0,5/0,7/0,9/1,1/1,3/1,5bar) starting with 5Hz with assessment of pain during radial AWT on the Yintang Ex2 location on a visual analogue scale from 0=no pain to 10=maximum pain. Frequency was increased from 5Hz to 7/9/11/13/15/17/19/21Hz. Three different applicators were tested with a 15mm diameter: F15 (plastic), C15 (ceramic), Di15 (gold).

Results: Using a F15 (plastic) applicator, mean pain levels at 5Hz (0,3-1,5bar) where 3 out of 10 on VAS, with a reduction by 19% at 7Hz, by 29% at 9Hz&11Hz, by 24% at 13Hz&15Hz, by 19% at 17Hz and 3 out of 10 at 19 and 21Hz.

Using a C15 (ceramic) applicator, mean pain levels at 5Hz (0,3-1,5bar) where 2,5 out of 10 on VAS, with a reduction by 10% at 7Hz, by 15% at 9Hz&11Hz, by 17% at 13Hz&15Hz, and an increase by 25% at 17-21Hz.

Using a Di15 (gold) applicator, mean pain levels at 5Hz (0,3-1,5bar) where 5 out of 10 on VAS, with a reduction by 17% at 7Hz, by 26% at 9Hz&11Hz, by 37% at 13Hz, by 29% at 15Hz, by 12% at 17Hz and increment of 20% at 19Hz and 48% at 21Hz.

As far as the different materials tested are concerned, the least pain was achieved with F15<C15<Di15 at the corresponding pressures (bar) and frequencies (5-21Hz).

Discussion: Frequency of radial AWT in facial antiaging therapy matters. Comparing a frequency spectrum from 5Hz to 21Hz, I found that depending on the applicator used, the least pain during radial AWT on the Ex2 acupuncture point on the procerus muscle of the face was achieved at 9-11Hz with a F15 (plastic) applicator and at 13Hz with a Di15 (gold) applicator. Higher frequencies than 17Hz increased the pain as well as lower frequencies than 7Hz.

Conclusion: Frequency matters in radial AWT for antiaging medicine. Least pain can be achieved depending on the applicator used with 9-13Hz, while both lower than 7Hz & higher than 17Hz significantly increased treatment pain. Both, the F15 (plastic) and the C15 (ceramic) applicator are recommended for facial rejuvenation AWT. It is a safe and noninvasive way to biostimulate facial tissue for rejuvenation.