



The Effect of Low Intensity Shockwave Therapy on the Erectile Function of Smokers and Non-smokers - Initial Report with a Dedicated System

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Introduction and Objective

The association between cigarettes smoking and erectile dysfunction (ED) was researched in many studies so far. The strongest relationship found was an adjusted odds ratio of 1.97 for incident ED in smokers compared with nonsmokers. Smoking appears to decrease pelvic and penile vascular flow. Moreover, atherosclerosis is possibly the most important vascular consequence of cigarette smoking. It was established that the effect of smoking on erectile function is related to impairment of endothelium dependent smooth muscle relaxation which is a key process leading to the dilation of vessels in the erectile tissue and an increased blood flow required for erection.

10 years ago, a study that examined the beneficial effects of Shockwaves on ischemia-induced myocardial dysfunction was published and revealed that shockwaves at energy level of $0.09\text{mJ}/\text{mm}^2$ enhance coronary angiogenesis.

The present study examines the effect of a treatment by a new dedicated device delivering shockwaves at the same energy level and a long focal area adjusted to the male sexual organ, on patients suffering from vascular origin ED, both smokers and non-smokers.

Materials and Methods

25 patients with Vasculogenic ED were treated by the shockwave device, 4 times, once a week. 1600 shocks were applied to each Crus and 900 shocks were applied to each Corpus Cavernosum. No PDE5 inhibitors were used during the treatment and 3 weeks prior treatment. Erectile function was evaluated at baseline and at 1, 3 and 6

months post treatment by 4 self administered questionnaires: IIEF-6, SEP, GAQ and EHS. Success was defined as positive answers to SEP and GAQ questions, EHS \geq 3 and a significant increase of IIEF-6 score according to the baseline ED severity.

Results

24 men with a mean age of 62.6 have finished treatment. 53% of them were smokers. There was no significant difference between ED duration, age and baseline IIEF-6 of smokers and non-smokers. Co-morbidities rates were higher in smokers than in non-smokers. The increase in IIEF-6 from baseline to the last follow-up was twice as large in the smokers than the non-smokers. The overall success rate was 70% and 84% of patients answered "Yes" to both GAQ questions. No adverse events were reported.

Conclusions

This pilot study shows that eventually this new treatment for vascular ED could be suitable to smoking patients and patients with vascular risk factors. More research is required for confirming the efficacy of this treatment on different populations.

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