

## **ER:YAG LASER TREATMENT FOR STRESS URINARY INCONTINENCE (SUI) IN WOMEN**

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### **INTRODUCTION AND AIM OF THE STUDY**

First assessment of efficacy and safety of Er:YAG laser in the treatment of stress urinary incontinence (SUI) and, as a secondary outcome, impaired sexual gratification in women. The aim of this study was to assess the outcome of a non-invasive laser treatment for mild-to-severe stages of these two conditions.

### **MATERIALS AND METHODS**

A prospective, single-center study at Ob/Gyn Clinic, Zagreb, Croatia, recruited 73 female patients suffering from SUI. The procedure was performed with a 2940 nm Er:YAG laser (XS Dynamis, Fotona, Slovenia) designed to achieve heating up of vaginal mucosa to around 60°C, 500-700 microns in depth. We have tested five parameters at baseline and follow-up visits: ICIQ-UI-SF and PISQ12 scores, residual urine volume and perineometry values (average pressure in mmHg and duration of pressure in seconds). Level of statistical significance was set to  $p < 0.05$  and all confidence intervals were given at 95% level. In all instances two-tailed tests of statistical significance were used.

### **RESULTS**

At 1<sup>st</sup> month, and at 2<sup>nd</sup>-6<sup>th</sup> month follow-up after laser treatment, all monitored outcomes were statistically significantly different from the baseline. ICIQ-UI score was reduced for 8 points, what is relative reduction of 67%;  $P < 0.001$ . PISQ-12 score was increased for 5.5 points, relative increase of 16%;  $P < 0.001$ . Duration of contraction was increased statistically significantly for 6.3 seconds (74% relative improvement). Residual urine volume (RUV) was reduced for 2.0 ml (67% relatively to the baseline;  $P = 0.01$ ). No adverse events were noticed.

### **INTERPRETATION OF RESULTS**

Since laser treatment of stress urinary incontinence is a novel method, few studies have thus far discussed laser therapies for similar indications<sup>1</sup>. In all five outcomes we have found statistically significant differences from the baseline to 2-6 months after the intervention. As both BMI and age were associated with improvement in ICIQ-UI SF score, we have checked the possible interaction between these two parameters. At baseline BMI and age were statistically significantly correlated (Spearman's  $\rho = 0.39$ ,  $P = 0.001$ ), but we have not found statistically significant, nor clinically relevant interaction of age and BMI on relative decrease of ICIQ-UI SF score. Findings from several studies, discussing impact of age on less invasive surgery for SUI, suggest that younger women have better improvement in UI symptoms relief with less retreatment, i.e. subjective and objective cure rate was significantly lower in older patients' groups<sup>2</sup>. On the other hand, BMI was diversely associated with the outcomes in some studies assessing less invasive surgical approach for stress urinary incontinence<sup>3</sup>. Results from the current study clearly support the observation that one may expect better outcomes in non-obese and younger patients. Thus, early detection of low grades of SUI in younger and normal-weighted women may partly become a practical approach, inducing earlier consultation and treatment.

## **CONCLUSIONS**

This study has indicated clinically relevant improvements in all outcomes, as well as improvements in sexual gratification. Er:YAG laser therapy is another possible minimally invasive option for treating premenopausal and postmenopausal women with SUI symptoms.

## **REFERENCES**

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