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URETHRAL AND VAGINAL APPLICATION

Hypothesis

To establish the effectiveness and safety of Erbium:YAG laser treatment for the management of atrophic symptoms due to the Genitourinary Syndrome of Menopause.

Material and Methods

37 patients with Genitourinary Syndrome of Menopause (GSM), average age 58.3 years and a BMI average 27.1 were included in this protocol. Patients received three urethral and vaginal laser sessions of a 2,940 nm Er:YAG laser in non-ablative mode, using a special vaginal robotic laser probe and a 4 mm intraurethral laser cannula. Visual Analog Scale analysis, for both urinary and vaginal symptoms, was performed for assessment of the severity of the following GSM symptoms: dyspareunia, dryness, irritation, leucorrhoea, dysuria, urinary frequency and urinary urgency. Vaginal pH, as well as the vaginal maturation index (MI), was used to not only determine the severity of the atrophy, but also to objectify the degree of the improvement after the treatment. The data of MI were then used to calculate the maturation value (MV), which better shows the overall improvement. These were performed before and at 3 and 12 months after the first laser session.

Figure 1: Vaginal Symptoms

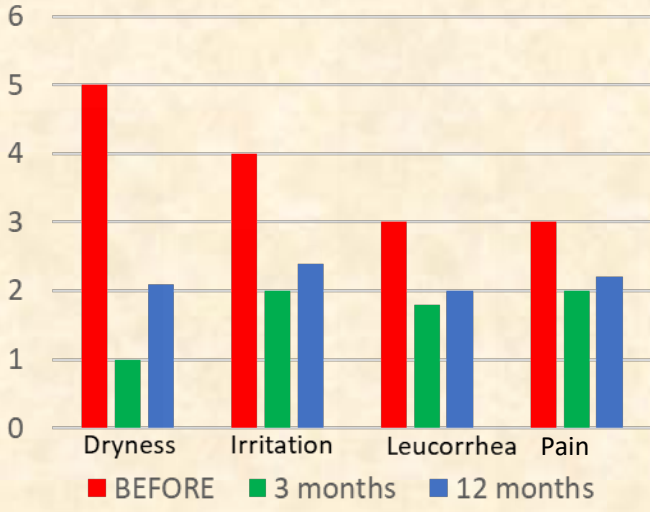
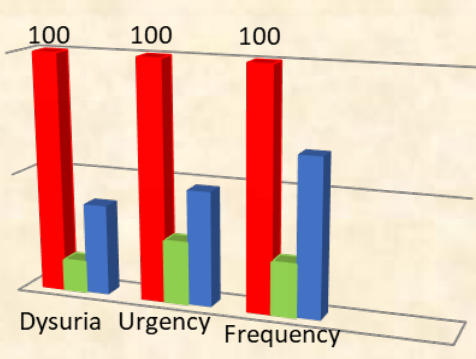


Figure 2: Urinary Symptoms



Results

All outcome measures showed statistically-significant improvement over the 12 months following initial laser treatment. The overall improvement determined by VAS showed a great diminishment of the severity of the symptoms. Vaginal pH and MV showed objective improvement of the vaginal symptoms in all patients. There were no serious adverse events during our study; some patients reported a mild discomfort during the laser procedure. Only one patient developed a urinary infection after one of the sessions

Interpretation of results

The positive effect of the Erbium:YAG laser on the epithelium and lamina propria is presumably due to the stimulation of cell proliferation via heat shock protein activation, vasodilation, an increase of collagen production, angiogenesis as well as anti-inflammatory action. The tropism of the urethral mucosa can also be improved through a controlled local warming process by using a non-ablative Erbium:YAG laser with a special modality that deliver the energy in trains of long pulses. (Conclusion at the bottom of the first column.)

Concluding message

The application of vaginal and urethral non-ablative Er:YAG laser, using a special robotic laser probe and a 4 mm cannula, significantly improved the tropism of both vaginal mucosa and urethral mucosa, and its effects lasted up to 12 months. Randomized, controlled and prospective studies with a larger number of patients and longer follow up are needed to confirm our findings.

References

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