Histological, cytological and clinical correlations after a non-ablative Erbium:YAG laser treatment, as a guide for prescribing treatment for vaginal atrophy, Poster 615

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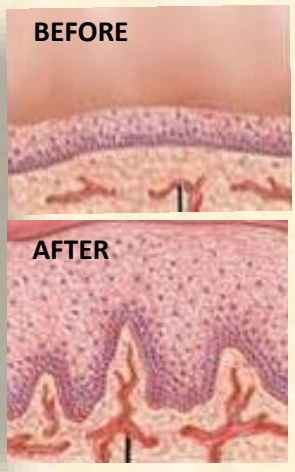


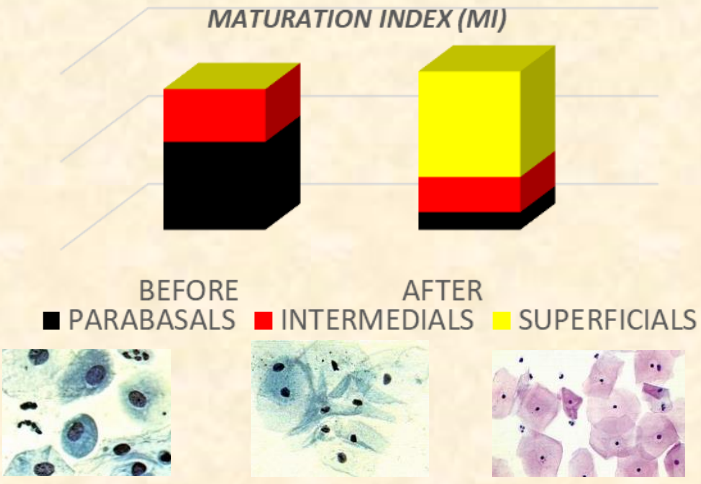
ROBOTIC LASER VAGINAL APPLICATION

Aims of study

To find a cytological parameter that allows us to proactively indicate a non-ablative laser treatment to improve vaginal trophism, and to correlate it with post-treatment histological changes in women with severe asymptomatic vaginal atrophy, to avoid future symptomatic episodes.

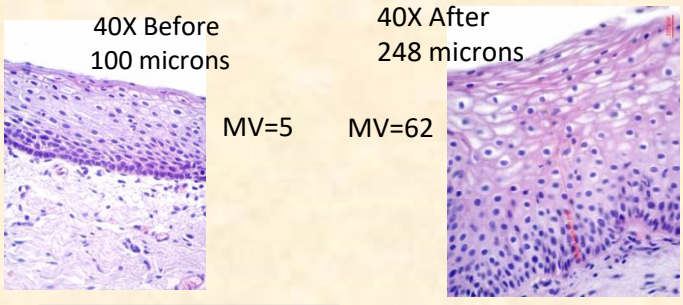
Material and Methods

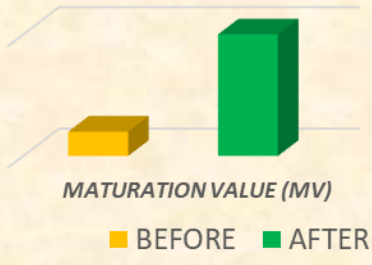
40 postmenopausal patients with severe, asymptomatic vaginal atrophy were enrolled in this study. Previous cytological evaluation confirming a maturation index of the epithelium less than 25 was done, compatible with atrophy, in all the women studied. Biopsies were performed on a smaller group of them, and followed by the protocol of a single session of non-ablative Erbium:YAG laser, to determine if their rate of maturation value could improve, to remove them from the terrain of vulnerability of suffering symptoms and to correlate changes with histological findings. 33 of the 40 patients were followed-up for a year, with cytological evaluation (maturation value index) and biopsies in some of them at the first month, three, six and twelve months.

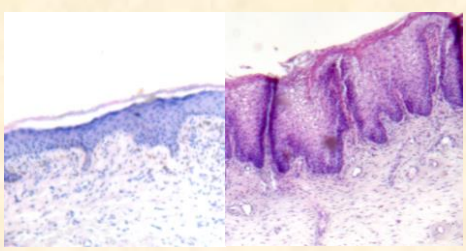


Results

A significant improvement in the epithelial maturation value index was observed in 100% of the treated patients, going from less than 25 to more than 50, and in many of them even more than 65, which means proper trophism. These changes were also correlated with the histological improvement expressed in increment of the epithelial thickness, the glycogenic load and the amount of vascularization in the lamina propria. These outcomes were maintained during the twelve months of follow-up.







4X
MV Before 4
Epithelial thikness before 45 microns
MV After 55
Epithelial thikness after 178 microns

Interpretation of results

Er:YAG laser therapy with non-ablative mode acts by producing pulse sequences of low fluence pulses that are absorbed at the tissue surface and cause transient heat increase of the mucosa, inducing not only restructuring of the lamina propria, but also microvascularization and new vessel formation. This tissue response with mild heat pulses has been confirmed in several studies [1,2,3]. The consequence of this mechanism of action is long-term improvement of vaginal mucosa trophism.

Concluding message

Our results show that carrying out a single session of non-ablative Erbium:YAG laser to asymptomatic postmenopausal patients reduces the risk of suffering the possibility of future symptoms of the so-called Genitourinary Syndrome of Menopause.

References

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2) Gambacciani M, Levancini M, Cervigni M. Vaginal erbium laser: The second-generation thermotherapy for the genitourinary syndrome of menopause. Climacteric 2015;18:757–763.
3) Gaspar A, Brandi H, Gomez V, Luque D. Efficacy of Erbium: YAG laser treatment compared to topical estriol treatment for symptoms of genitourinary syndrome of menopause. Lasers Surg Med 2017;49(2):160–168.