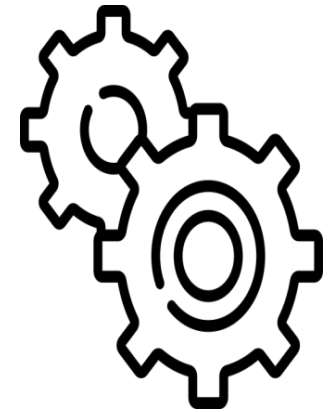


Terapie meccaniche



- ★ **Attività sessuale** → con il partner o tramite autostimolazione, aumenta la ascolarizzazione e l'elasticità del tessuto vaginale
- ★ **Dilatatori vaginali** → permettono una distensione meccanica e un progressivo rilassamento della muscolatura
- ★ **Biofeedback pelvico** → insegna a rilassare e contrarre la muscolatura in modo corretto

Laser vaginale

Meccanismo → microtraumi che inducono:

- Formazione di collagene,
- Angiogenesi,
- Ispessimento epiteliale.

Trattamento meccanico → alternativa per le pazienti per le quali le terapie ormonali sono controindicate o che non vogliono assumerle.

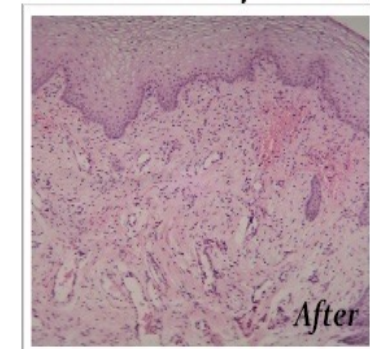
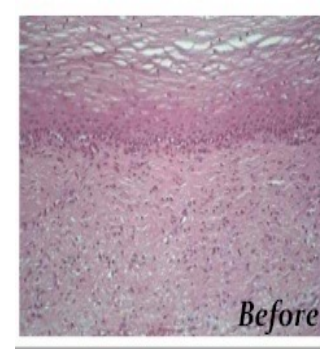
Richiede pochi minuti per ogni seduta.

Non richiede anestesia.

Ben tollerato

Biglia N, et al. Clin Breast Cancer 2015
Li F, et al. J Minim Invasive Gynecol. 2021
Jang YC, et al. JAMA Netw Open. 2022
Filippini M, et al. J Sex Med. 2022
Pitsouni E, et al. Maturitas 2017

LASER = *Light Amplification by Stimulated Emission of Radiation*



Salvatore S et al. Climateric 2014
Gambacciani M et al Climacteric 2015



Laser vaginale

Si utilizzano in particolare 2 tipi di laser per il trattamento della GSM



◆ Laser CO₂ frazionato

- laser a gas
- penetrazione > 3 mm
- ablazione

Albertin E et al. Rationale and design for the Vaginal Erbium Laser Academy Study (VELAS). Climacteric 2015;



◆ Erbium: YAG Laser

- laser a stato solido
- penetrazione 200-500 micron
- diffusione termica

Vaginal erbium laser: the second-generation thermotherapy for the genitourinary syndrome of menopause

M. Gambacciani^{*}, M. Levancini^{*†} and M. Cervigni[‡]

Aim To evaluate the effects of the vaginal erbium laser (VEL) in the treatment of postmenopausal women suffering from genitourinary syndrome of menopause (GSM).

Method GSM was assessed in postmenopausal women before and after VEL (one treatment every 30 days, for 3 months; $n = 45$); the results were compared with the effects of a standard treatment for GSM (1 g of vaginal gel containing 50 μg of estriol, twice weekly for 3 months; $n = 25$). GSM was evaluated with subjective (visual analog scale, VAS) and objective (Vaginal Health Index Score, VHIS) measures. In addition, in 19 of these postmenopausal women suffering from stress urinary incontinence (SUI), the degree of incontinence was evaluated with the International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form (ICIQ-UI SF) before and after VEL treatments.

Results VEL treatment induced a significant decrease of VAS of both vaginal dryness and dyspareunia ($p < 0.01$), with a significant ($p < 0.01$) increase of VHIS. In postmenopausal women suffering from mild to moderate SUI, VEL treatment was associated with a significant ($p < 0.01$) improvement of ICIQ-SF scores. The effects were rapid and long lasting, up to the 24th week of the observation period. VEL was well tolerated with less than 3% of patients discontinuing treatment due to adverse events.

Conclusion This pilot study demonstrates that VEL induces a significant improvement of GSM, including vaginal dryness, dyspareunia and mild to moderate SUI. Further studies are needed to explore the role of laser treatments in the management of GSM.

Climacteric. 2015 Apr;18(2):219-25

Sexual function after fractional microablative CO₂ laser in women with vulvovaginal atrophy.

Salvatore S, Nappi RE, Parma M, Chionna R, Lagona F, Zerbinati N, Ferrero S, Orioni M, Candiani M, Leone Roberti Maggiore U.




OBJECTIVE. To investigate the effects of fractional microablative CO₂ laser on sexual function and overall satisfaction with sexual life in postmenopausal women with vulvovaginal atrophy (VVA).

METHOD. This prospective study included **77 postmenopausal women** (mean age 60.6 ± 6.2 years) treated for VVA symptoms with the fractional **microablative CO₂ laser system**. Sexual function and quality of life were evaluated with the Female Sexual Function Index (FSFI) and the Short Form 12 (SF-12), respectively, both at baseline and at 12-week follow-up. A 10-mm visual analog scale was used to measure the overall satisfaction with sexual life and the intensity of VVA symptoms (vaginal burning, vaginal itching, vaginal dryness, dyspareunia and dysuria) before and after the study period.

RESULTS. We observed a significant improvement in the total score and the scores in each specific domain of the FSFI at 12-week follow-up compared to baseline ($p < 0.001$). After concluding the laser treatment, the overall satisfaction with sexual life significantly improved ($p < 0.001$). Seventeen (85%) out of 20 (26%) women, not sexually active because of VVA severity at baseline, regained a normal sexual life at the 12-week follow-up. Finally, we also found a significant improvement in each VVA symptom ($p < 0.001$) and in quality-of-life evaluation, both for the scores in the physical ($p = 0.013$) and mental ($p = 0.002$) domains.

CONCLUSIONS. Fractional microablative CO₂ laser treatment is associated with a significant improvement of sexual function and satisfaction with sexual life in postmenopausal women with VVA symptoms.

Fractional CO₂ laser therapy: a new challenge for vulvovaginal atrophy in postmenopausal women

G. P. Siliquini^a, V. Tuninetti^b, V. E. Bounous^b , F. Bert^c  and N. Biglia^b 

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ABSTRACT

Objective: To evaluate the effects of CO₂ laser in the treatment of vulvovaginal atrophy (VVA) in postmenopausal women.

Methods: VVA was assessed in 87 postmenopausal women (mean age 58.6 ± 6.9 years) before and after the treatment. The protocol consisted of three monthly treatments and included the treatment of vulva. Subjective measures included VAS (Visual Analog Scale) both for vaginal dryness and dyspareunia; DIVA (Day-by-day Impact of Vaginal Aging); a questionnaire on treatment satisfaction and one about the degree of pain during the procedure. Objective measures included VHI (Vaginal Health Index) and VVHI (Vulvo-Vaginal Health Index). Time points of the study were at the screening visit (T0), at baseline (T1), at week 4 (T2), at week 8 (T3), after 3 months since the last laser application (T4), after 6 months (T5), after 9 months (T6), after 12 months (T7) and after 15 months (T8).

Results: Treatment induced significant improvement in the VAS score. After treatment, VHI and VVHI indicated no VVA and this improvement was long lasting. Multivariate analysis showed that the time of follow-up was correlated with better VHI and VVHI ($p < 0.001$). DIVA improved over time ($p < 0.001$).

Conclusions: This study shows that CO₂ laser treatment induces a significant and long-lasting improvement of symptoms.

ARTICLE HISTORY

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KEYWORDS

Fractional CO₂ laser; menopause; vaginal dryness; dyspareunia; vulvovaginal atrophy



ORIGINAL ARTICLE

Fractional CO₂ vaginal laser for the genitourinary syndrome of menopause in breast cancer survivors

Gian Piero Siliquini MD, Valentina Elisabetta Bounous MD, PhD✉, Lorenzo Novara MD, Margherita Giorgi MD, Fabrizio Bert MD, Nicoletta Biglia MD, PhD

135 post-menopausal women with GSM symptoms

45 BCS and 90 patients in the comparison group

Laser procedure: endovaginal treatment and vulvo-vestibular treatment a history of breast cancer

RESULTS

- A **significant improvement** was observed in both groups
- The improvement was obtained **more slowly by BCS** than by the control group
- The improvement was **long-lasting**, being maintained after 12 months from the last laser session
- At the multivariate analysis, **vaginal dryness resulted significantly more frequent among BCS** (p=0.006).

Laser vaginale

- Dati provenienti da vari studi sul laser vaginale riportano un miglioramento significativo di dispareunia e secchezza vaginale
- Alcuni RCT hanno confrontato il laser vaginale con gli estrogeni vaginali dimostrando la NON superiorità di nessun trattamento
- Mancano studi randomizzati controllati per l'approvazione di tali trattamenti



These treatments are costly
and generally not covered by
insurers

Laser vaginale

Laser a diodo già ampiamente utilizzato nella chirurgia isteroscopica e laparoscopica.



Ma abbiamo pochi dati sull'uso del laser a diodo per il trattamento del GSM

- uno studio riguardante un laser a diodo a singola lunghezza d'onda (1470nm))

Dodero D, et al. Int J Womens Health Wellness. 2019

- uno studio su sistema laser a doppia lunghezza d'onda 980nm + 1470nm

Barba M., et al. Bioengineering. 2023



Studio pilota sull'efficacia del laser a diodo vaginale (di Biolitec, Germania) nel trattamento della VVA in menopausa

Inclusion criteria

- Postmenopausal women
 - 12 months since last menstruation
 - 6 months of amenorrhea with serum FSH >40 mIU/ml
 - post adnexectomy
- Moderate-severe vulvovaginal atrophy assessed by VHI
- Negative Pap test performed within the past 12 months
- Absence of ongoing inflammatory or infectious conditions



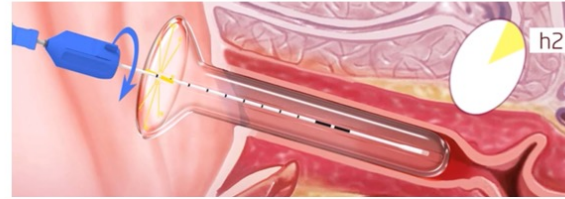
Lo studio:

30 pazienti

3 cicli di trattamento per ogni paziente → visita di follow up a 4 settimane dall'ultimo trattamento

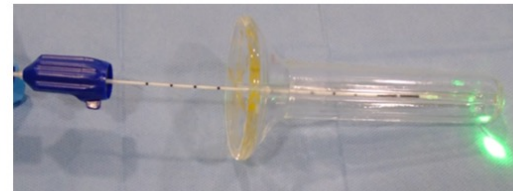
The procedure

01 The patient is placed in gynecologic position



02 The handpiece is lubricated with anaesthetic gel and inserted into the vaginal canal

03 The fiber is introduced inside the applicator to the bottom of the channel



The procedure

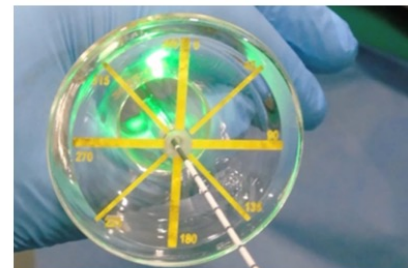
04 Set the laser on pulsed mode (2 pulses)

Pulse duration of 500 ms and pause of 500 ms.



05 Activate the 7-watt laser

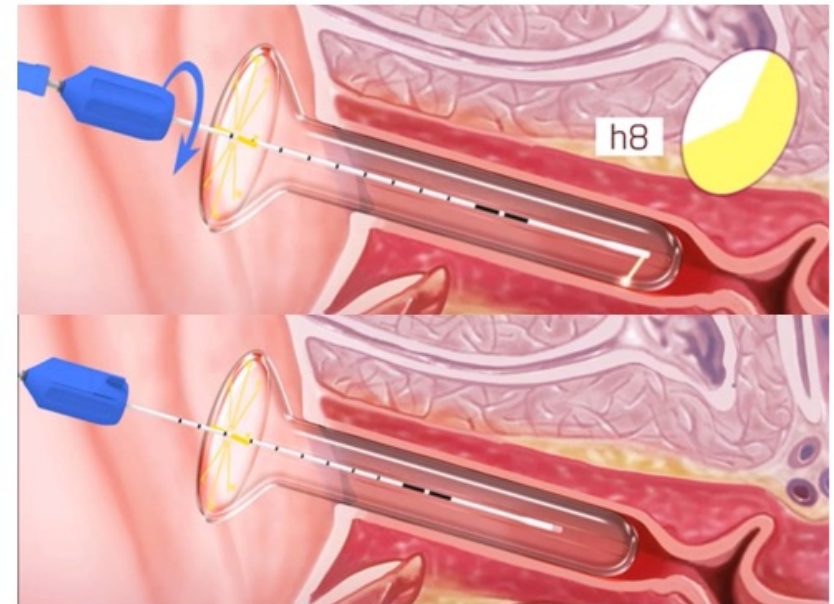
06 The vaginal mucosa should be stimulated with two pulses at 2 – 4 – 8 and 10 o'clock



The procedure

07

Laser stimulation at the 4 points is repeated for each cm along the entire vaginal canal



08

The procedure is repeated 3 times at a 4 weeks interval





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*Per la diagnosi e il trattamento delle
patologie del **basso tratto genitale***

Laser vaginale

**Presso il nostro centro è disponibile il
laser a diodo per il trattamento
dell'atrofia vulvovaginale**
in collaborazione con l'Ambulatorio
Menopausa in pazienti oncologiche.

Il laser vaginale è indicato nel trattamento
della secchezza/atrofia vaginale, della
dispareunia e più in generale della
sindrome genitourinaria.

Con la paziente in posizione ginecologica, si
inserisce a livello vaginale un dispositivo-
guida al cui interno viene fatta scorrere e
ruotare la fibra laser. Un operatore muove e
guida la fibra emettendo raggi laser in
maniera controllata in modo da irradiare
tutta la superficie vaginale.

- ✓ **E' indolore**
- ✓ **Dura in media 3-4 min**
- ✓ **E' una possibile opzione terapeutica in
pazienti oncologiche**
- ✓ **E' ripetibile**

Per effettuare il trattamento è necessario

essere in possesso di:

- Visita specialistica con indicazione al
trattamento
- Pap-test **negativo** eseguito entro 12 mesi
 - Consenso informato firmato
- Gel anestetico (Luan 2.5%) da applicare
a livello vaginale circa 10-60 min prima
della procedura

**Grazie per
l'attenzione!**

