



Non-invasive Procedures in Aesthetic and Functional Rejuvenation of External Female Genital Organ

E.Fasola MD



Elena Fasola MD
www.aigef.com

To understand the role of
Aesthetic Medicine
In
**Female Genital
Rejuvenation**

Who is **our typical patient?**

The same person who asks for this:



The patient who wants this (37 yo)



Might need this too: (37 yo)
labioplasmic + Coleman's
Lipostructuring

Or:



The patient who
wants this:
(48 years old): HA
filler



Might need this
(46 yo) Implant of Hyaluronic in
LM

Or also



A patient who needs this
(50 years old)
Face volume remodeling with
HA, Co2 Fr.,
Btx.....



Might need this
as well:
(50 years old)
Ninphoplastic +
Labia Majora
filler



- **Age: between 35 and 68 yo (.....)**
- **Cultural level: medium/high**
- **She usually has an active social life**

Who's the doctor?

- Esthetic Doctor
- Plastic Surgeon/ Esthetic Plastic Surgeon
- Gynecologist
- Dermatologist
- Psychosexual therapist

**All of them must have an
adequate and ultra-specialist
training!!!!**



**When an
Organ Ages
It loses part
of its Function
And, of course,
part
of its beauty
!!!!!!**

ROLE OF ESTROGEN

Menopausal Age:

Estimated decrease of about 1% of dermal Collagen/year

THEY ARE THE MOST IMPORTANT HORMONES FOR DEVELOPMENT OF SECONDARY SEXUAL FEMALE CHARACTERISTIC



The SKIN
is The Major
TARGET ORGAN

**Non REPRODUCTIVE
OF ORGANISM**

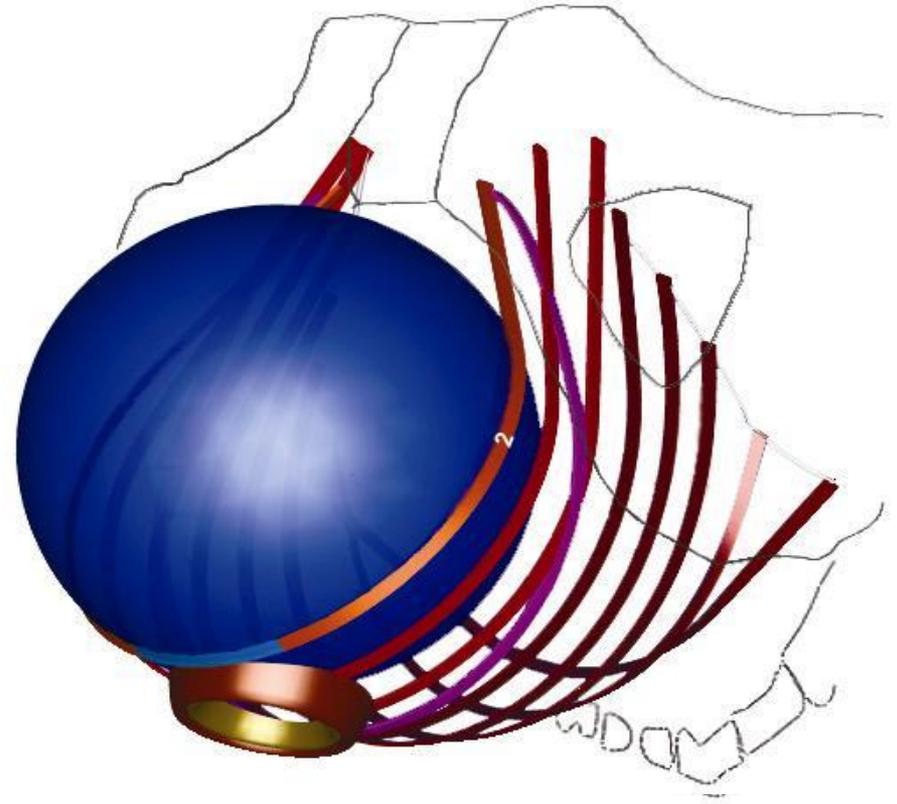


Hall G, Phillips TJ. Estrogens and skin the effects of estrogen Menopause and hormone replacement therapy on the skin JAAD2005;53(4):555-566

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..... Also, there are other para-physiological events

Such a childbirth, for example!!!



Lien KC. Obstet Gynecol 2004; 103: 31-40

PHYSIOPATHOLOGY OF VULVAR AGING IN ADULTS PZ

... due to progressive estrogenic decrease ...

Macroscopically:

In addition to progressive increase of white hair

- **NYMPHA:** Nympha hypertrophy (or involution and conglutination , in third age)
- **LABIA: Lipoatrophy with volume reduction**
- **Clitoris involution** (intolerance to clitoris stimulation during intercourse)



Pt 48yo- multiparous

Histologically:

- Progressive Hypotrophy of the derma (due to lack of ESTROGENIC stimulus on the fibroblasts with flattening of the dermo-epidermal junction)
- **Loss in elasticity, laxity and fragility with dryness, itching and dispareunia related**
- Thinning of the introital mucosa with increase of microabrasion incidence.



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Labia Majora Hypotrophy



MILD (EARLY)

Mild lipodystrophy (also by weight loss) and only rarely skin atrophy

MODERATE

The component of the lipodystrophy is most often represented, non-symmetrical, initial dermatochalasis and skin atrophy associated and consequential changes in pigmentation (hyperchromy), at this stage appears pale skin due to vascularity compromised

Moderate a: the morphological change is liable for a portion of LM (not more than 1/3)

Moderate b: the morphological change is liable for more than 1/3 of LM

SEVERE

Overt hypolipotrophy, often symmetrical, with signs and symptoms associated to skin and mucosa atrophy

H S R S

Labia Majora



0 = Absent (40yo)



1= Mild (48yo)



2a= Moderate (44yo)



2b = Moderate(52yo)



3= Severe (47yo)

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Pt 59yo in HRT
MILD



Pt 47yo
MODERATE a)



Pt 52yo
MODERATE b)

What can be treated from a medical-aesthetic standpoint in the vulvar area?

Primary:

- Tissue Hypotrophy of Labia Majora (and morphological changes of Mons Pubis), not always related to age
- Mucosal Atrophy and related symptoms (often related to age or to particular pathological condition)

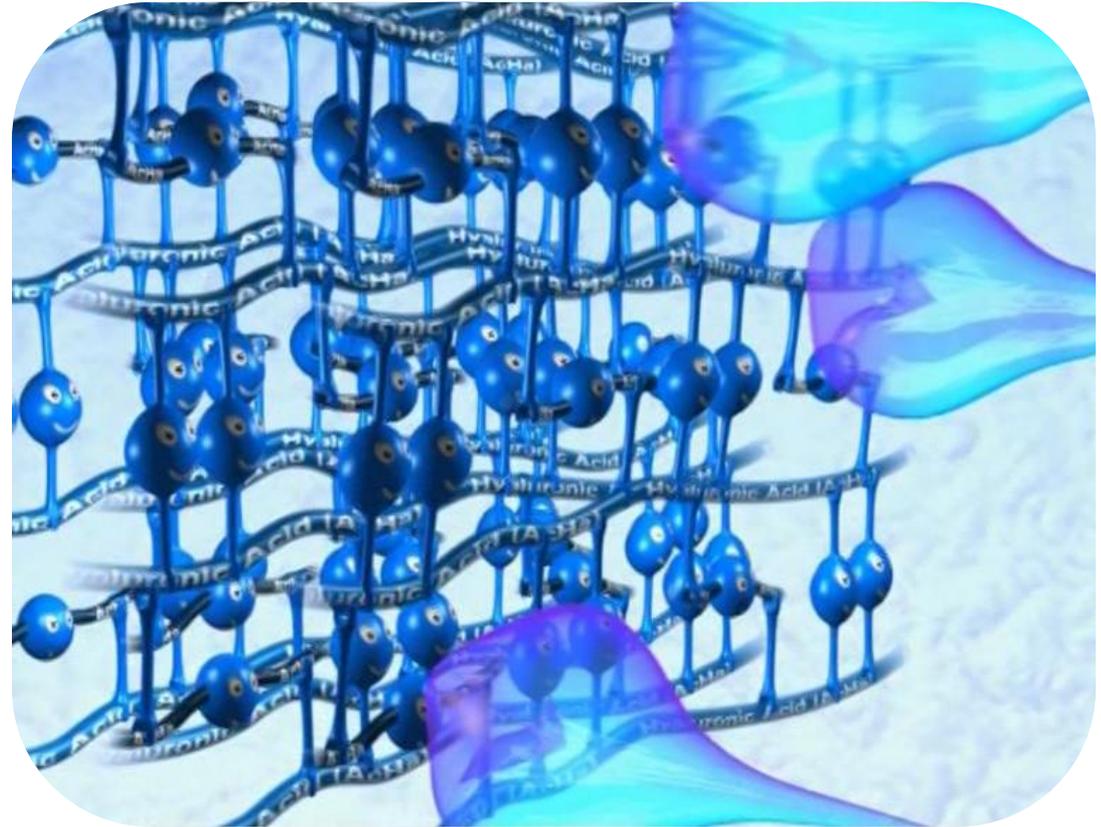
Then:

- vulvar and peri-vulvar hyperchromia
- post laparatomic suprapubic scars

НА

HA RHEOLOGICAL PROPERTIES

- MONOPHASIC HA (19/24 mg/ml)
- CROSS-LINKED WITH BBDE(1,4-butanediol diglycidyl ether)
- LOW VISCOSITY
- HIGH ELASTICITY
- ADDED TO MANNITHOL (PROTECTION FROM FREE RADICALS)



Yui et al, J Controlled Release, 1992 & 1993



= - BBDE



= - H+

Pts Selection

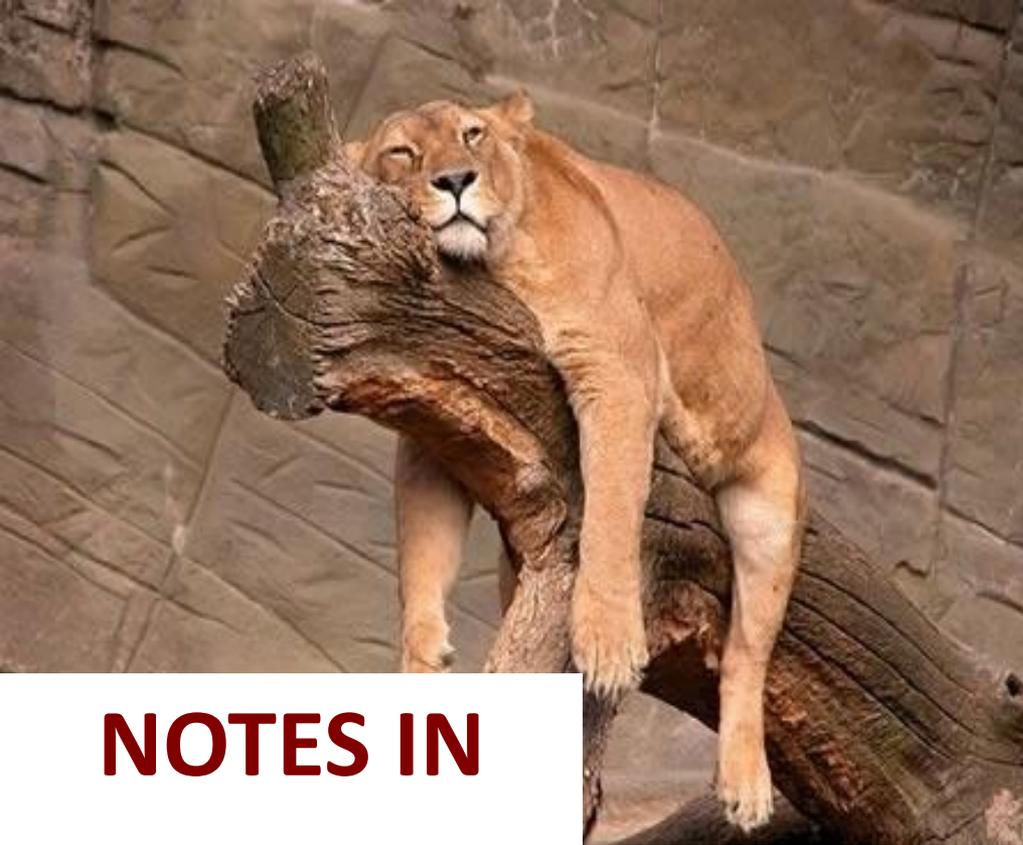
Exclusion Criteria

- No signs of cutaneous hypotrophy or lipodystrophy
- Autoimmune diseases of soft tissues
- Important systemic diseases (ex: diabetes, neoplastic pathologies)
- Presumed or confirmed sensitivity towards one of the contents or ingredients of the product
- Ongoing inflammatory and/or local infectious: Dermatitis, Herpes, HPV viral infections, Mycosis, Bacterial infections
- Ongoing anti-inflammatory and anti-coagulant therapies

in 2011

Materials and Methods

- **53 patients**
- **31 pts (with mild to moderate LM Hypotrophy) were treated with maximum 2 ml of 19 mg/ml HA in vulvar area (intra-dermal or just sub-cutaneous technique with 27G-30 G needle), then one retouch at 6 months of max 1 ml of HA 19 mg/ml**
- **12 pts (with severe LM Hypotrophy) were treated with 24 mg/ml HA (max 2ml with cannula technique) and then only 3 pts needed of max 1 ml of retouch with 19 mg/ml HA (with infiltration technique 27G needle, just sub-cutaneous injections)**
- **All patients received anesthesia before treatment with 2 different methods**



NOTES IN ANESTHESIA

Innervazione della Vulva



Nervo ilio-inguinale
Nervo femoro-cutaneo post.
Nervo pudendo

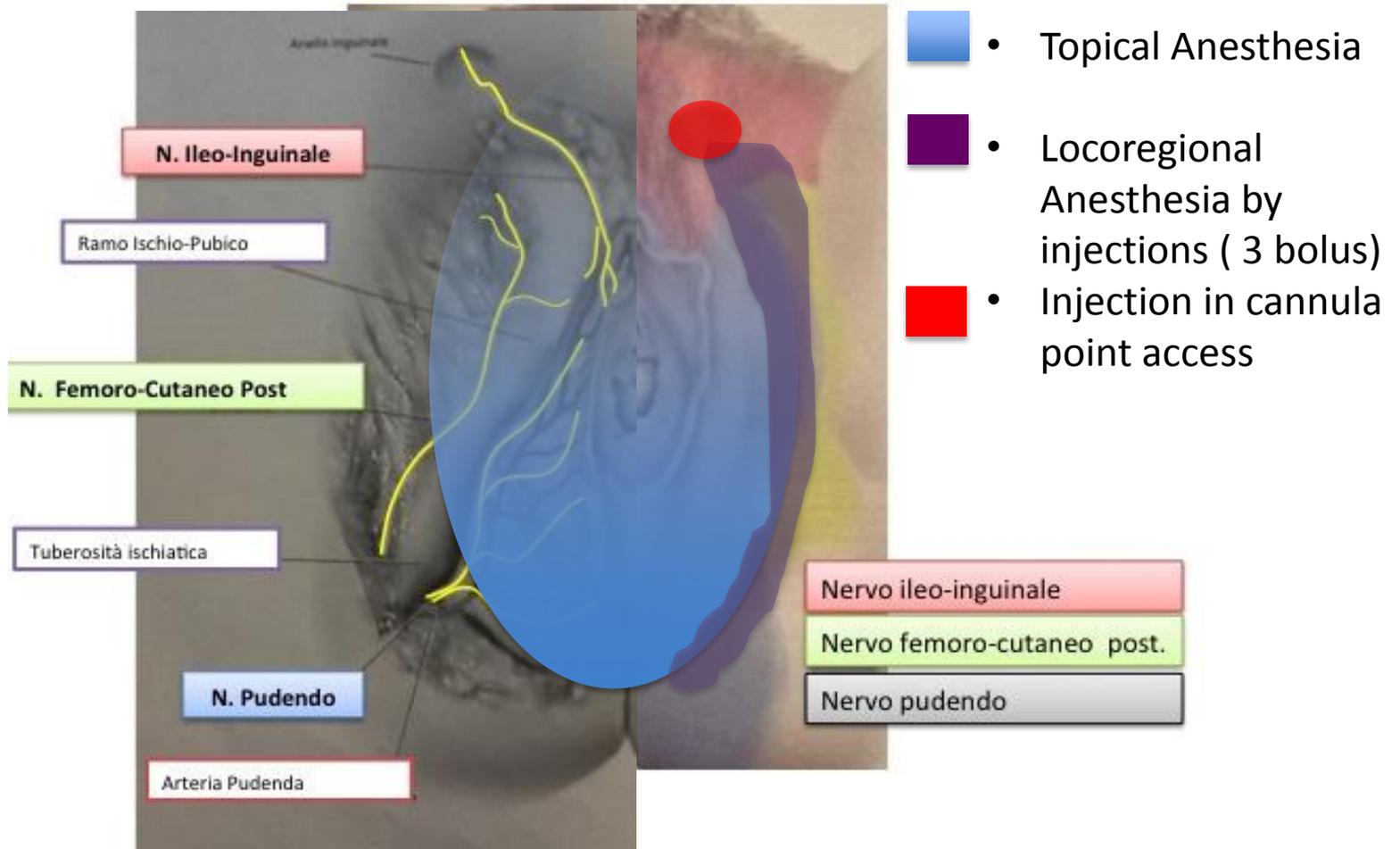
SUPERFICIAL INJECTION (INTRADERMICAL):

TOPICAL ANESTHESIA WITH LIDOCAINE 2% (it is applied in occlusive dressing 1H BEFORE INJECTION)

JUST SUBCUTANEOUS INJECTION: TOPICAL ANAESTHESIA + LOCAL BARRIER ANAESTHESIA WITH 1ML OF LIDOCAINE 2% + 2ml PHis.Sol. IN BOLUS ALONG GENITAL-FEMORAL FOLD

IMPLANT OF HA WITH CANNULA: LOCAL ANAESTHESIA ONLY IN THE POINT OF CANNULA ACCESS

NOTES IN ANESTHESIA





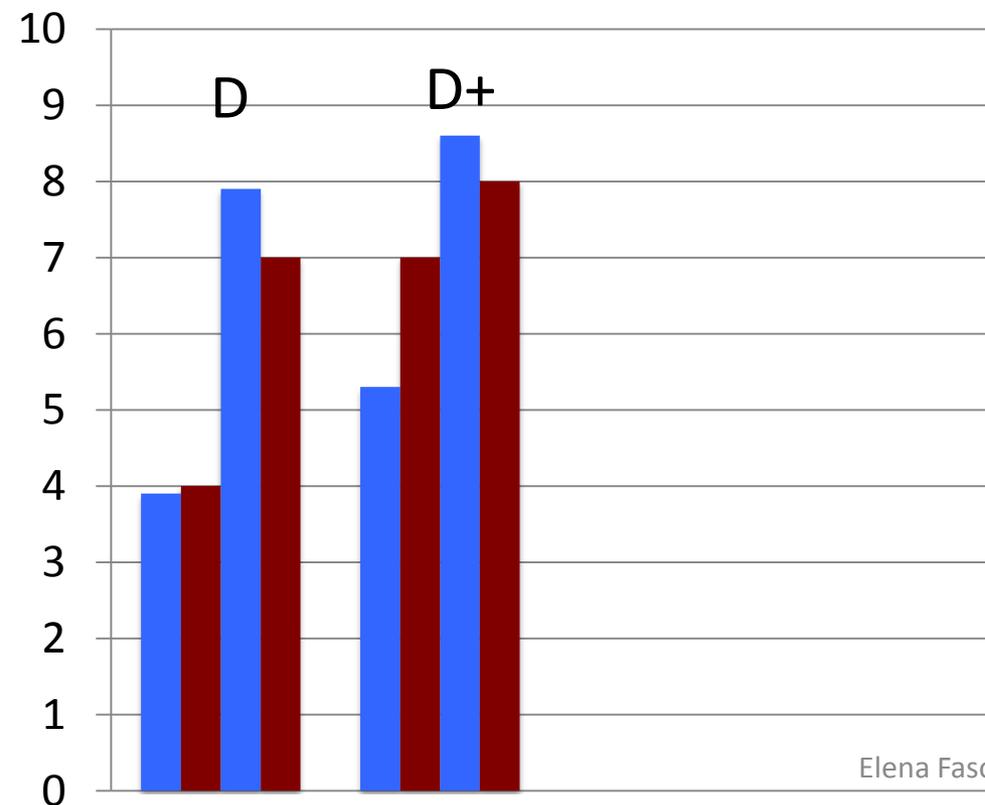
RESULTS: AESTHETIC SCORE

Aesthetic satisfaction score by patients

1-2-3-4-5-6-7-8-9-10 (from none to maximum satisfaction)

Aesthetic satisfaction score by doctor

1-2-3-4-5-6-7-8-9-10 (from none to maximum satisfaction)



- Pts t0
- Doctor t0
- Pts t5
- Doctor t5

T0
T1: 1 month
T2: 3 months
T4: 6 months
T5: 1 year

D+ group: only 3 pts needed max 1 ml retouch of D at t4

D group: all pts received retouch max 1 ml of Desirial at t4

Side Effects

- **Hyperemia** (common)
- 1 pts with **Edema** (non-persistent, non-recurring)
- 2 pts with **Ecchymosis** (needle technique, D)
- 3 temporary and little **accumulations of product** in needle technique, D)
- **No Hematoma**



PRECAUTIONS!!!!

THE QUANTITY OF HA MUST NOT BE MORE THAN 1-2 ML per LABIA in the same session:

**H.A. HAS EXCELLENT HYGROSCOPIC properties
(in the tissue and in this area it's about 1:2)**

Into the tissue, 2 ML OF PRODUCT can be LIKE ABOUT 4 ML

In more....

The LM is very hydro-dynamic anatomical area, because of its content in fat tissue, during sexual activity, during the menstrual cycle ...etc...

EVERY H.A. DEEPLY “BOLUS- like” INFILTRATED CREATES A FIBROUS CAPSULE!!!!

We must keep this into account!!!!.

..to avoid risk of lymphatic and/or blood vessels compressions and recurrent edema associated..



**IS IMPORTANT
NOT to EXCEED
in**

THE RECOMENDED QUANTITY

!!!!

Macromolecular HA COMPLICATION in LM of Pz 25yo!!!!

COMPLICATIONS

- 1) Recrudescent Hedema
- 2) Granuloma
- 3) Seroma
- 4) Discomfort (pain)

CHOISE HA & TECNIQUE

LM Filler : Technique

MODERATE HYPOTROPHY

Created with Flip4Mac WMV Demo
www.Flip4Mac.com

**MODERATE HYPOTROPHY
WITH ASIMMETRY**



LM IMPLANT with Cannula

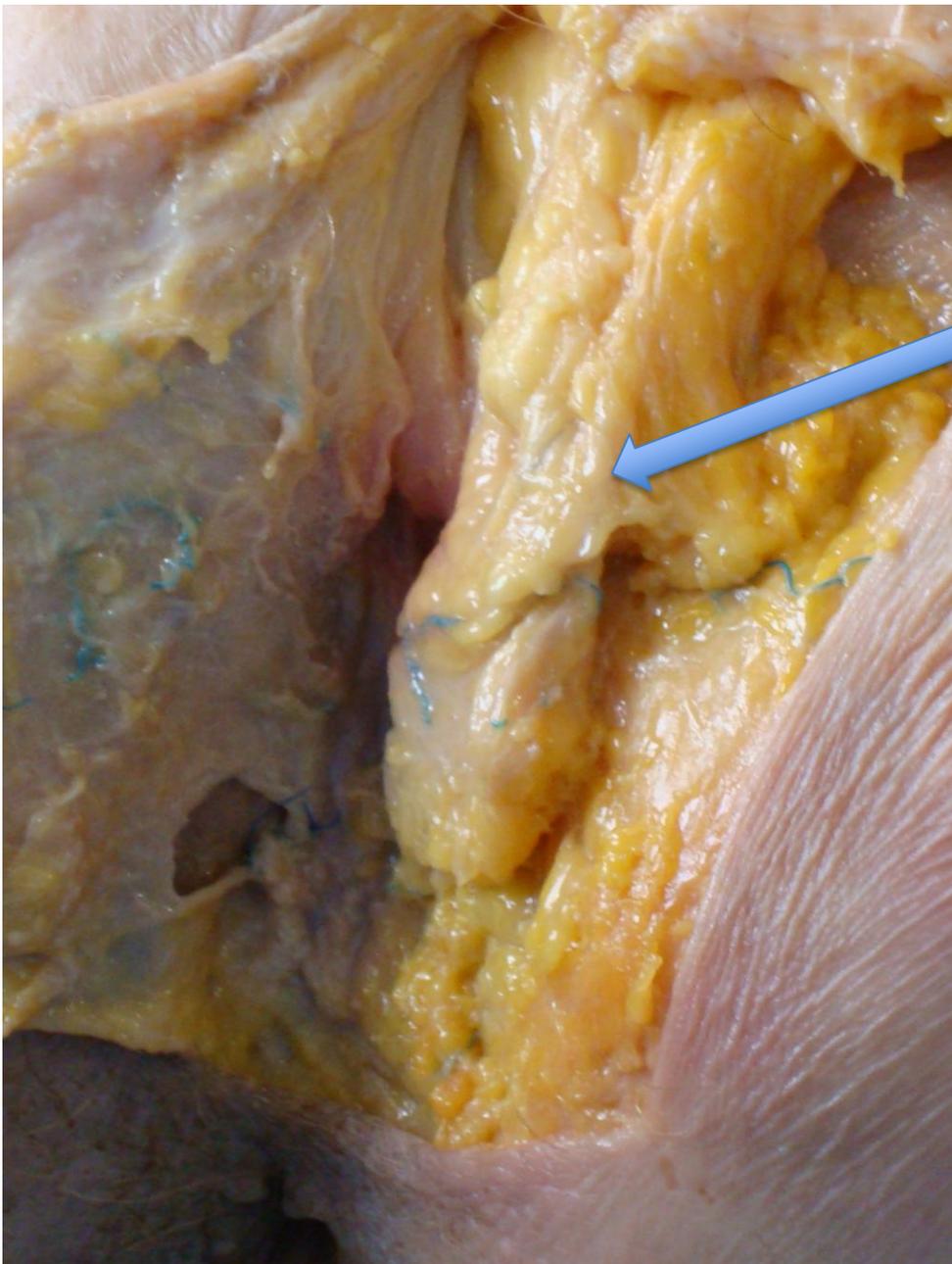
MODERATE TO SEVERE
HYPOTROPHY



When we use the cannula,
where are we?

**FIBROUS TUNIC AND FAT
BODY OF BIG LIP
FROM CADAVER**

(PARS UNIVERSITY –Anatomy Institute Dic 2011)



Anatomy & Histology

Big Lips: 2 large skin folds

From surface to depth:

Skin: with numerous sweat and sebaceous glands (sup. part) + hair follicles

Lip Dartos a layer of smooth muscle cells immediately beneath the skin covering (lateral face, inferior edge and part of the medial surface)

Cell-Adipose Tissue: poorly represented

Fibrous tunic: or elastic sack of the LM, the bottom of which is close to the fork and the opening is at the level of the orifice of the subcutaneous inguinal route.

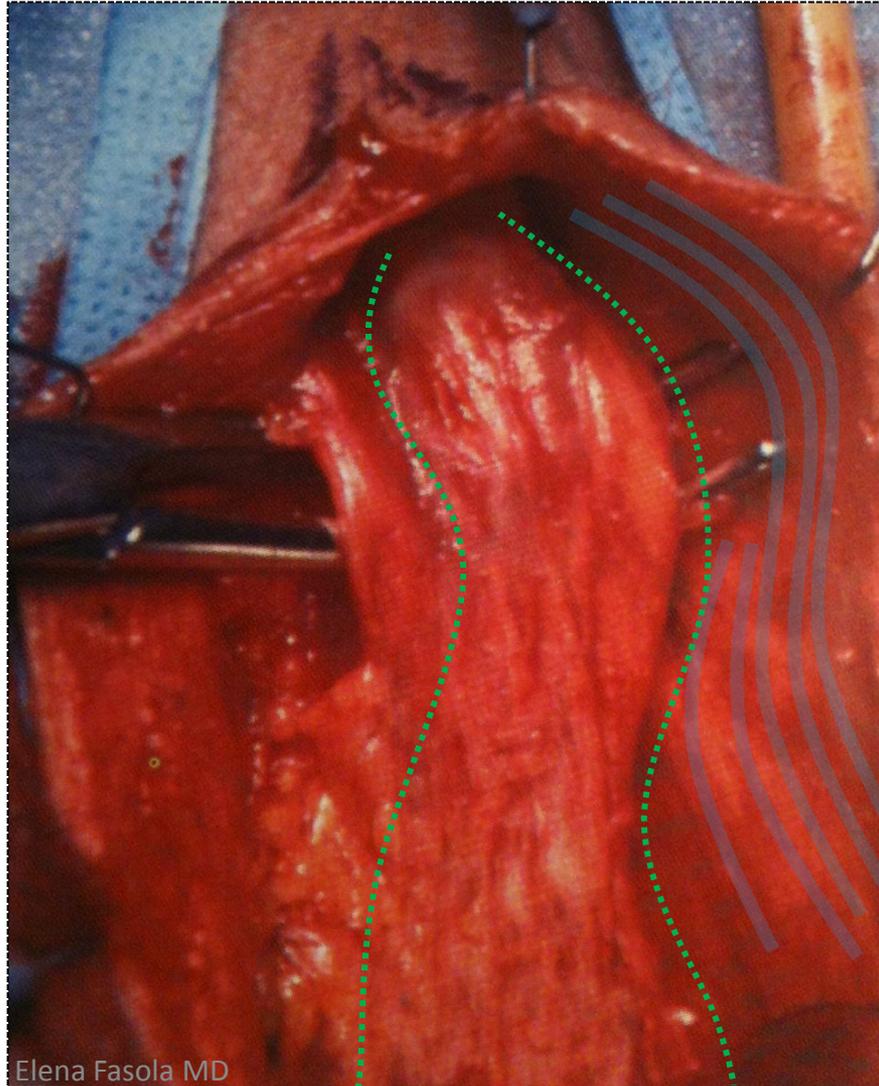
The flexible bag containing the fat body of the LM, in this fat are present fan fibers of round ligament



In Vivo: intra-operative Session

LM - Structure

- Cutis
- Labial Dartos
- Cell-Adipose Tissue
- Fibrous- Elastic Sack LM



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Preparation of Martius flap to repair an
anal-vaginal fistula



...14 months after the implant



December 2008



February 2010

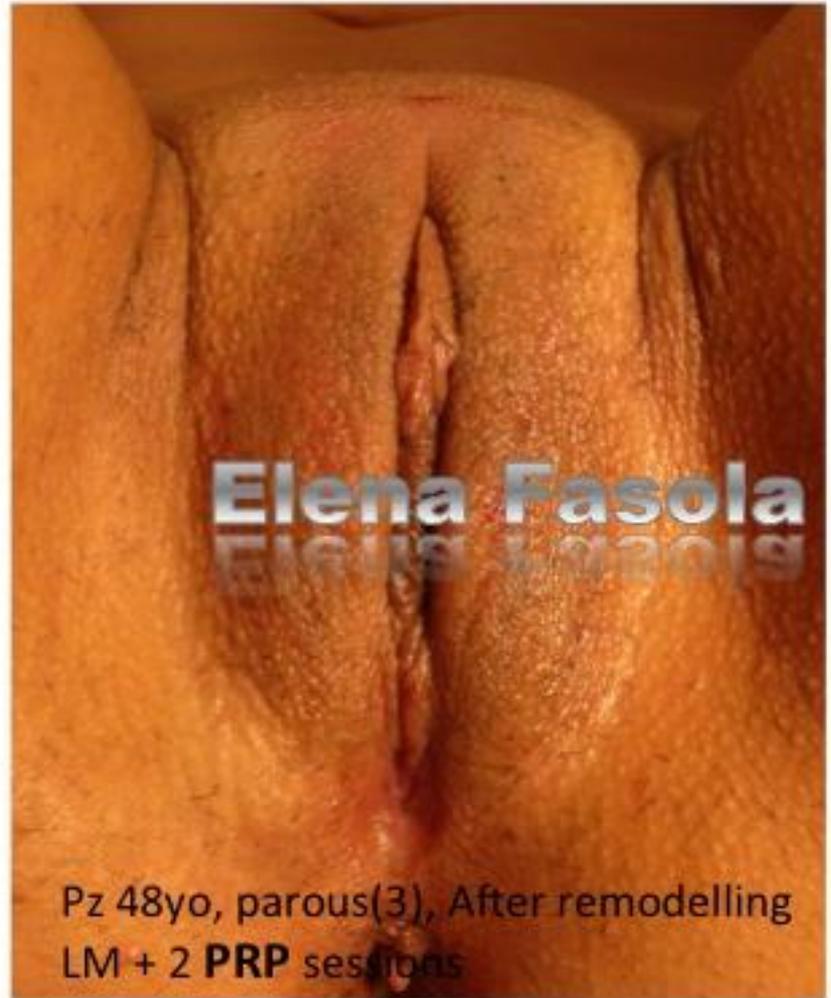
A case of labia majora augmentation with hyaluronic acid implant

E.Fasola-F.Anglana-S.Basile-G.Bernabei-M.Cavallini

Journal of Plastic Dermatology 2010; 6,3

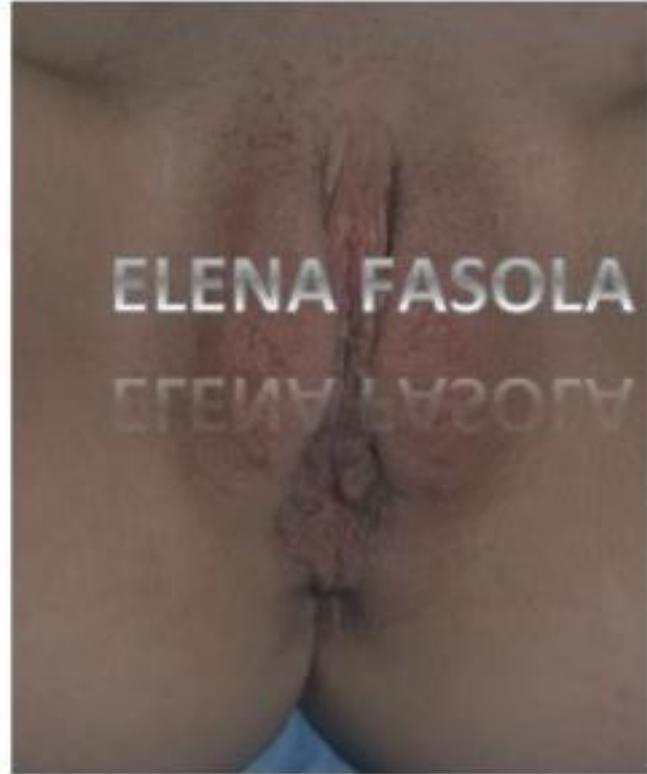
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37 yo, parous (2) before
+ Dispareunia



After LM remodelling + 2 PRP

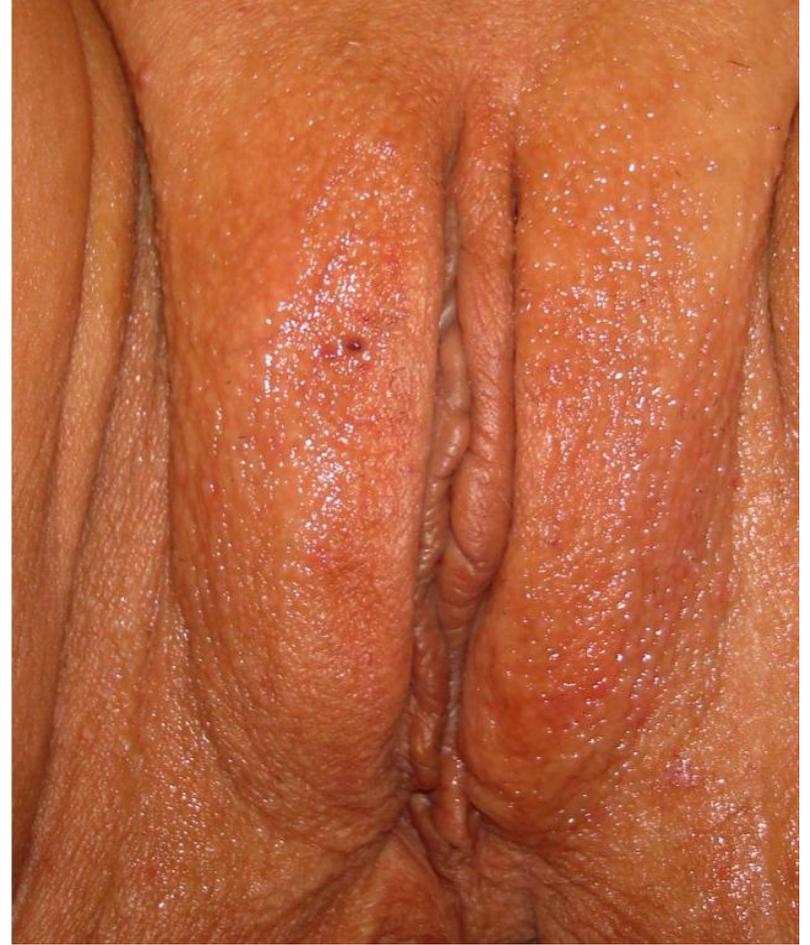
Ipotrofia Moderata 2a



Pz 33aa primipara



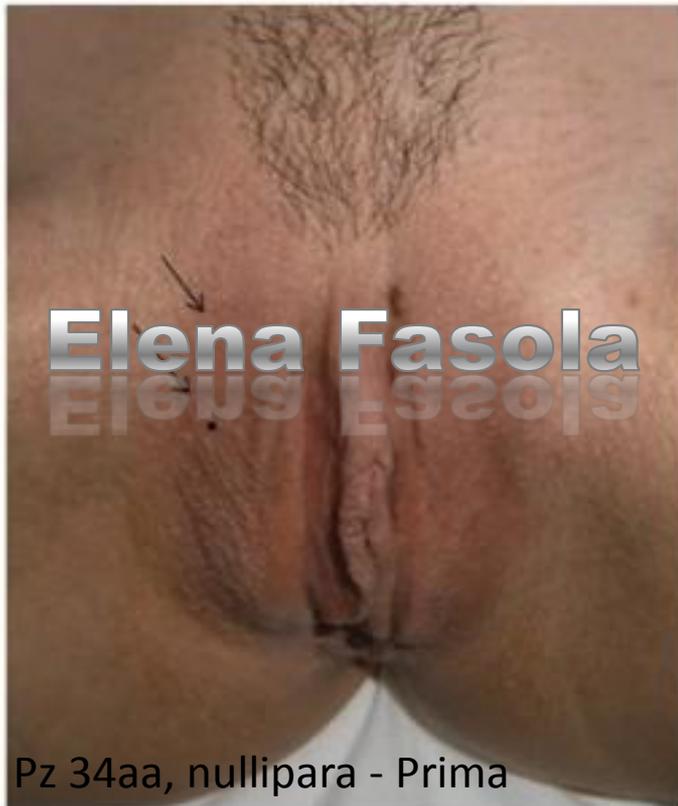
Post LM lifting + LM filler





1) Pz 46yo, parous-
HA 21 mg/ml1,5ml x
labia, Labioplasty and Perineumplasty,
14 months after- Gennuary 2012,
March 2013)

Ipotrofia Moderata (2a)



2 STEPS: same pt (48yo) before and after HA LM filler



Ipotrofia Moderata b

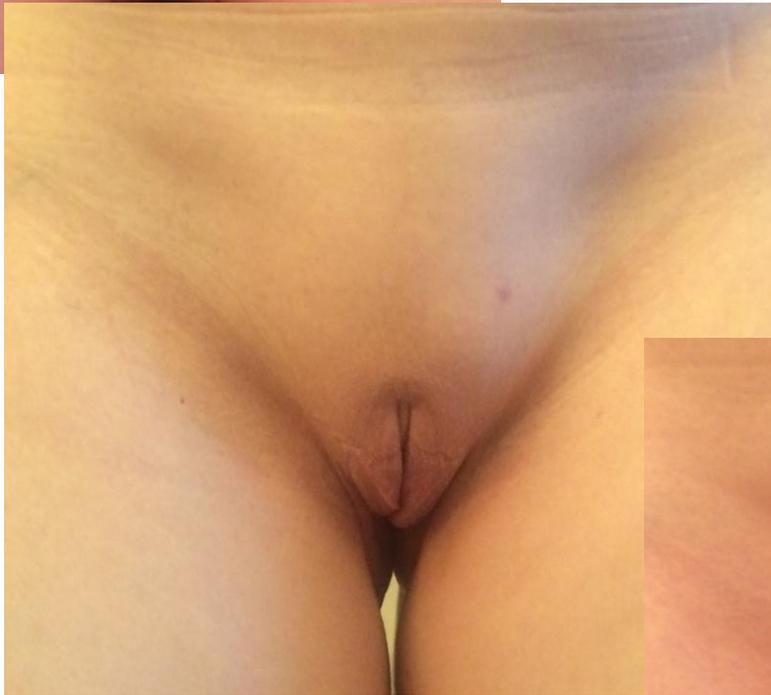


Ipotrofia Leggera



Assenza di Ipotrofia

Pt 52yo, before and after 1ml of HA
24mg/ml in the left labia end 2 ml in
the right labia majora, in th same
session



HAVING SAID THAT...

Excellent results have obtained thanks intravaginal injections of HA 19mg/ml

ROMA: FIGO 2012



Blindly Cross-Linked Hyaluronic Acid Infiltration in Cosmetic and Functional Treatment of Vulvo-Vaginal Atrophy. Preliminary Study.

Oliva Cosima¹, Fasola Elena², Perrella Eleonora³, Fiorelli Claudia¹, Basile Stefano⁴, Saccucci Pietro¹

1. Dpt of Obstetrics and Gynecology San Filippo Neri Hospital, Rome, Italy. 2. Aesthetic Medicine and Microsurgery, Milan, Italy. 3. Dpt of Anatomic and Histological Pathology – University Campus Bio-Medico, Rome, Italy. 4. II Dpt of Obstetrics and Gynecology, Azienda Ospedaliero-Universitaria Pisana, Pisa, Italy

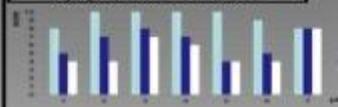
OBJECTIVES

There are few studies about local use of Hyaluronic Acid in vaginal atrophy and no study used Hyaluronic acid infiltration. (1,2,3). Hyaluronic Acid is a molecule well known and widely used in aesthetic medicine and plastic surgery. Efficacy of local infiltration of Hyaluronic Acid in biostimulation of others anatomical districts is well documented by numerous international references.(4-5) On the basis of a prior experience using non-cross-linked Hyaluronic Acid (in press), the authors researched the efficacy of blandly cross-linked Hyaluronic Acid infiltration in cases of vaginal mucosa atrophy.

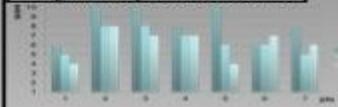
METHODS

10 patients 12 months postmenopausal were selected, 8 were enrolled, 2 were excluded. The median age of enrolled patients was 54.1 yrs, the median BMI was 24.5. They had signs and symptoms of vulvovaginal atrophy and didn't take any hormone replacement therapy. All symptoms, such as vaginal dryness, dyspareunia, itching, chafing/irritation were evaluated by a self-assessed score (0 to 10). Atrophy was valued by a clinical score (0=absent, to 4=severe). Vaginal pH and Maturation Index were measured and compared. We used 0.5-0.8 ml per patient of blandly cross-linked Hyaluronic Acid (19 mg/ml) added to mannitol, in order to delay Hyaluronic Acid degradation. 10-12 wheals were performed by intramuscular infiltration in inferior posterior vagina. Prior topical anesthesia with 2.5% lidocaine cream was performed. Scheduled Follow-up was at 1 (T1), 3 (T2), 6 (T3), 12 (T4) months. It was possible new HA infiltration at 3 months. This is a preliminary uncontrolled open prospective study and was conducted at San Filippo Neri Hospital in Rome – Department of Gynecology and Obstetrics.

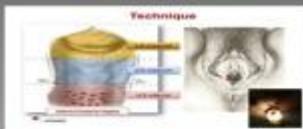
Dyspareunia Outcome



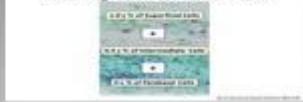
Vaginal Dryness Outcome



Technique



VMI: Vaginal Maturation Index



RESULTS

Vaginal symptoms:
-dryness and above all dyspareunia improve rapidly and stably for all of 7 patients, significantly;
-itching was present in 5 of 7 patients when enrolled, but wasn't referred by any patients at 3 months follow-up;
-chafing/irritation, present in all of 7 patients at T0, was referred by only 3 patients at T2 follow-up.
On the contrary Vaginal Maturation Index and Vaginal pH didn't improve in any patient.
Clinical impression of a steadily improved mucosal trophism and overall doctor's satisfaction was high (7.2/10 score at 3 months).
Overall patient's satisfaction was high too (7.4/10 score at 3 months).

CONCLUSIONS

These results are different from those of our previous study with not-cross-linked hyaluronic acid (6-7). Actual data are encouraging with regard to relief of vaginal symptoms such as dryness and above all dyspareunia, stably. Our impression is that no significant changing in mucosal cytology and biology are induced by hyaluronic acid injections. Probably positive results on symptoms' treatment are related to the improvement of tissue hydration. In order to define the efficacy of vaginal hyaluronic acid infiltration as treatment of vaginal atrophy, we need more studies with higher number of patients, with placebo control group or with other treatment control group (vaginal creams with hyaluronic acid, phytoestrogens and vitamin E)

REFERENCES:

1. Morali G et al. Arzneimittelforschung. 2006;56(3):230-238, 2006
2. Murat E et al. Arch Gynec Obstet. 2011;283(3): 539-543.
3. Cancellieri F et al. Ann SIGO. 2011;Vol LXXXVII
4. Wang F. Arch Dermatol. 2007 Feb;143(2): 1
5. Gold MH. Clin Interv Aging. 2007;2(3): 369-76
6. Oliva C et al. 1st Rome Focus Meeting, 2012
7. Fiorelli C et al. La Medicina Estetica. Anno 36(2):115-6

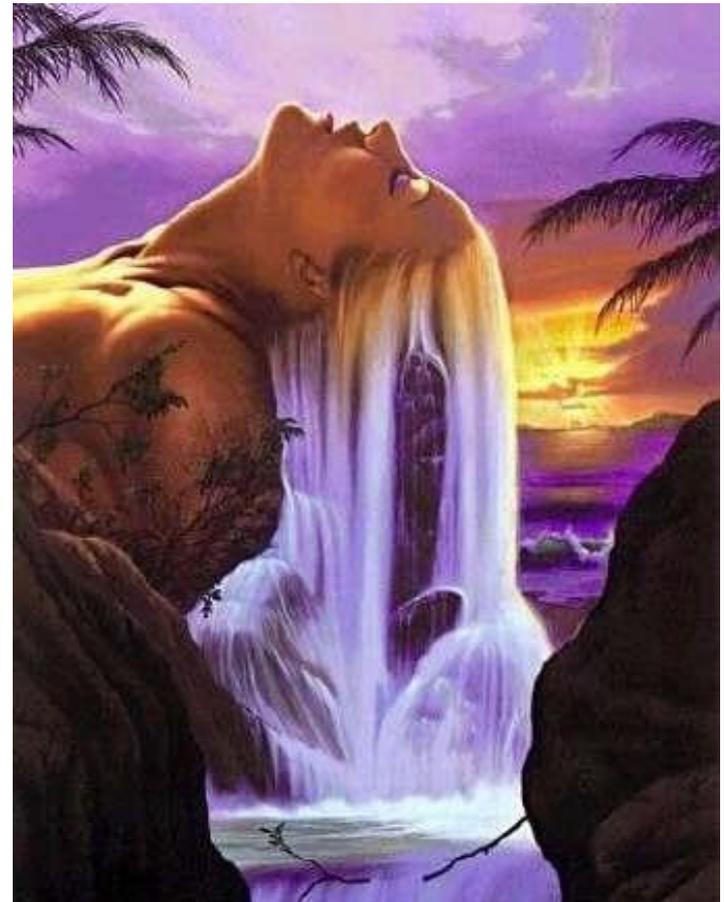
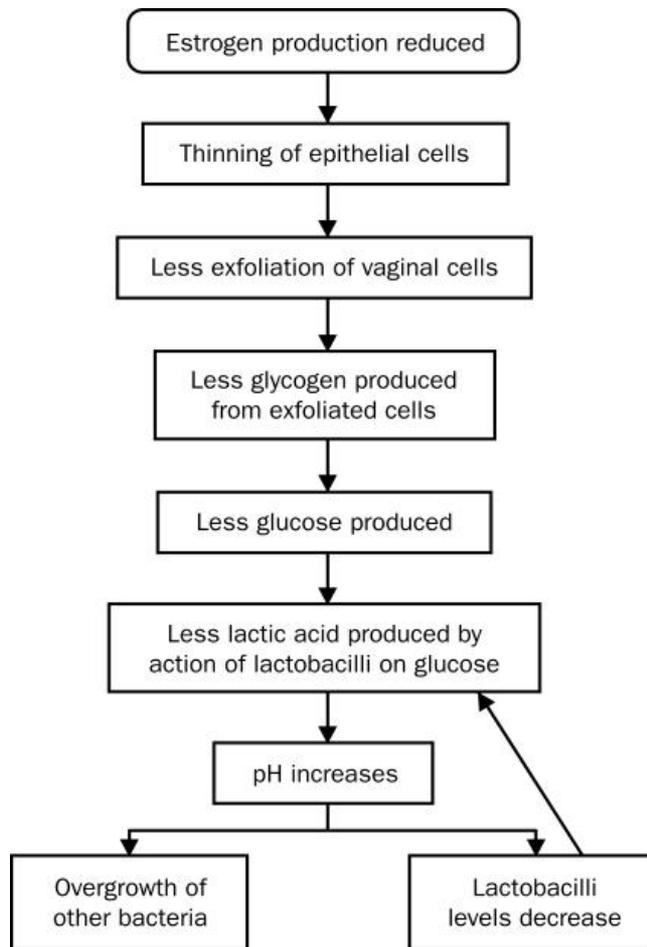
HA 19 mg/ml

FUNCTIONAL AIMS

106 patients

(April 2012 – October 2013)

Cascade-of-Effects Mechanism of VVA

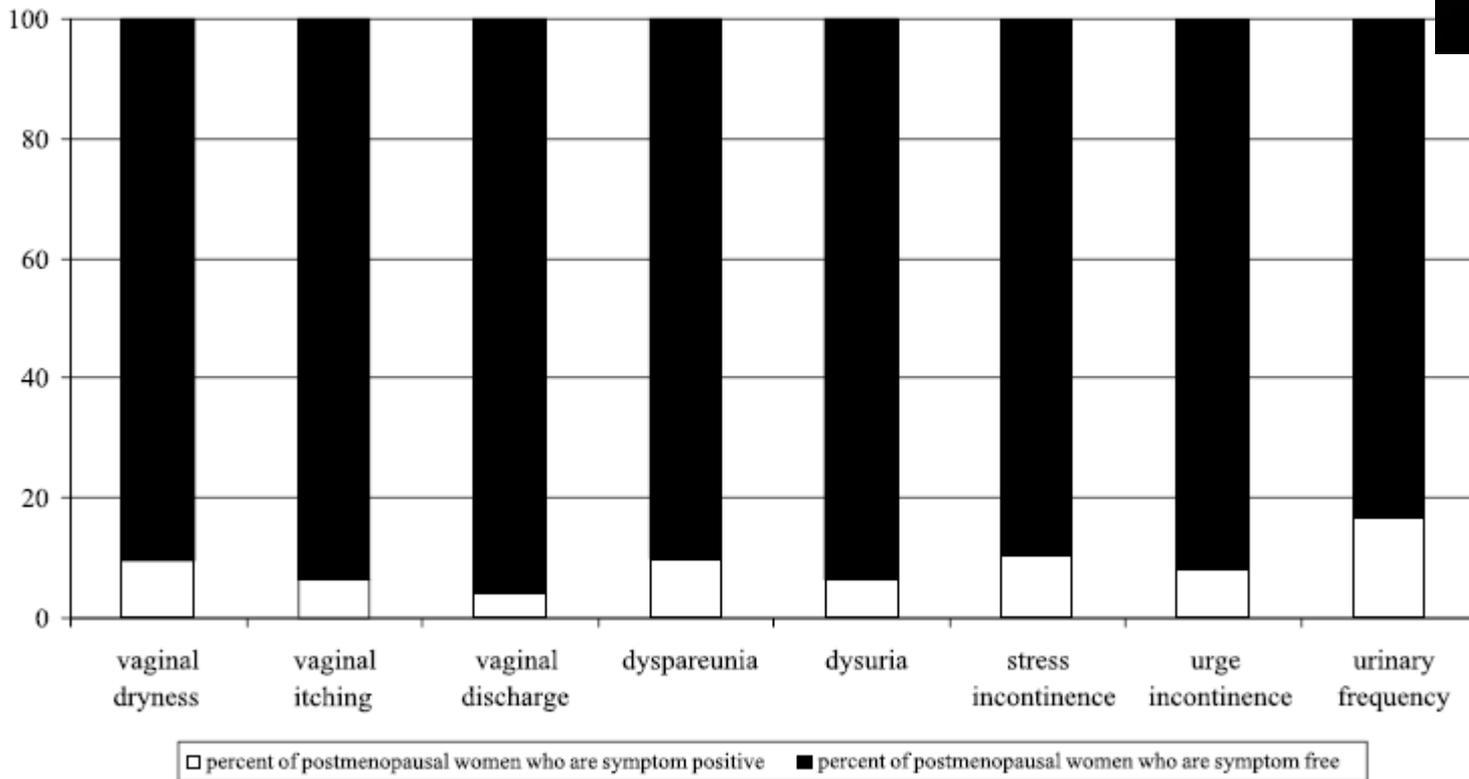


Clinical Findings



Symptoms in menopausal AGE

- Dryness
- Irritation
- Postcoital Bleeding
- Soreness
- Vaginal Discharge
- Dyspareunia



currently available therapy ...

Non Hormonal Treatments

- Vaginal Agents



Hyaluronic Acid vs Vaginal Estrogens

Arch Gynecol Obstet (2011) 283:539–543

DOI 10.1007/s00404-010-1382-8

GENERAL GYNECOLOGY

The comparison of hyaluronic acid vaginal tablets with estradiol vaginal tablets in the treatment of atrophic vaginitis: a randomized controlled trial

**Murat Ekin · Levent Yaşar · Kadir Savan ·
Muzaffer Temur · Mehmet Uhri · Işıl Gencer ·
Esra Kıvanç**

...in oral supplementation..

Hyaluronic Acid Oral Supplementation

SIGO 2011

ATTI della Società Italiana di Ginecologia e Ostetricia - Vol. LXXXVII

ACIDO IALURONICO E TROFISMO VAGINALE IN MENOPAUSA

F. Cancellieri, T. La Galia

Prospective, Randomized , Double Blind, Placebo Controlled

LMW Hyaluronic Acid
pill, 220 mg, once a day, three months

Subjective Satisfaction

Vaginal HISTOLOGICAL Changes

Hormonal Treatments

- Systemic Estrogens
- Vaginal Estrogens



10% to 20% of women may have residual VVA symptoms

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Menopause, Vol. 14, No. 3, 2007
Cochrane Database Syst Rev. 2010

...a new way to treat the VVA.....

LASER CO2: 10600nm
LASER ERB-YAG: 2940nm



106 pts in 7 groups (36 to 68 yo)

All with signs and / or symptoms of cutaneous-mucosal hypo-atrophy

- **Group A**

15 fertile women with dyspareunia (from 39 to 51aa)

- **Group B**

24 women in menopause for at least 3aa (50 to 70AA)

- **Group C**

10 women in pre-menopause (from 42 to 49yo)

- **Group D**

9 women on HRT (by 51aa to 60 aa)

- **Group E**

10 women in TMX (from 2 to 4 years: from 42 to 54aa)

- **Group F**

7 women treated with amitriptyline

- **Group G**

31 women (from 36 to 67aa), asymptomatic with signs of cutaneous atrophy

Study Design: **Exclusion Criteria**

- Presumed or confirmed sensitivity towards one of the contents or ingredients of the product
- Ongoing inflammatory and/or infectious local: Dermatitis, Herpes, HPV viral infections, Mycosis, Bacterial infections or traumatic local conditions...
- Ongoing anti-inflammatory and anti-coagulant therapies
- Important Systemic Diseases and Autoimmune Systemic Diseases and major part of autoimmune diseases of soft tissue (Diabetes, LES, Sclerodermia....)
- No signs and/or symptoms VVA related

Linea di HART

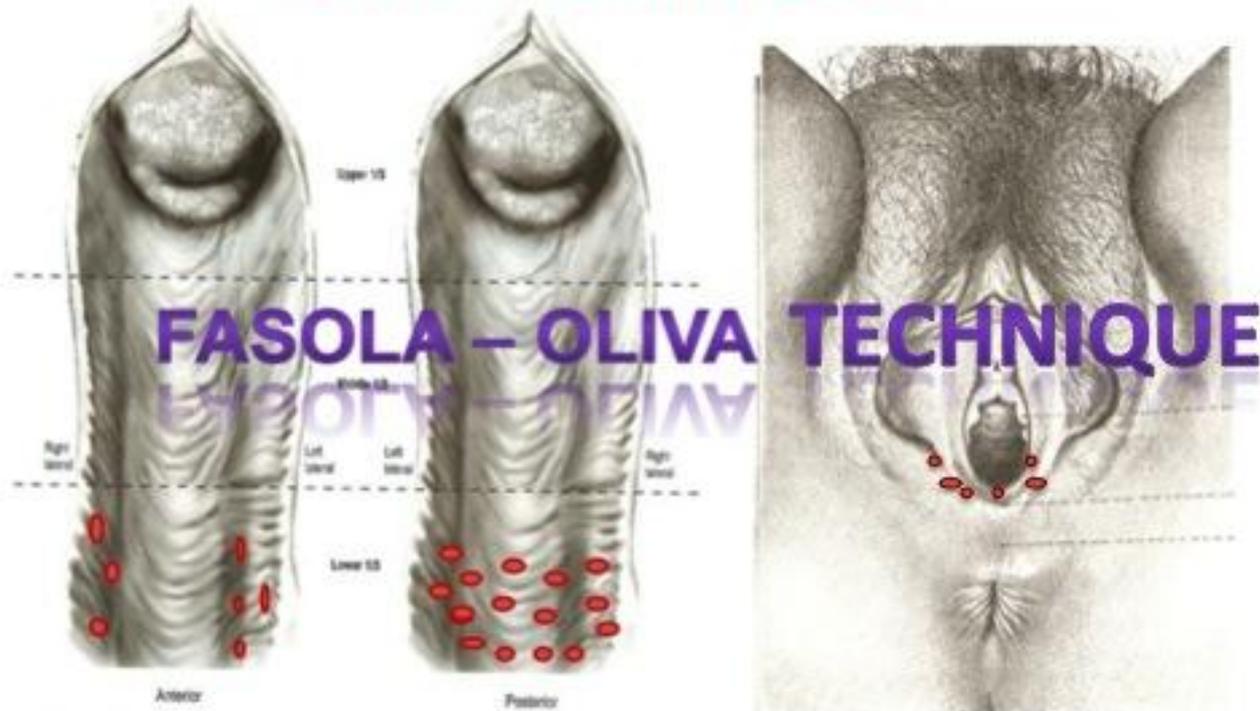


STUDY DESIG

Materials and Methods

- HA 19mg/ml, cross-linked BDDE + mannithol
- 1 intra-mucosal infiltration, each 2 months for 3 times (introit and vestibule)
- Cutaneous infiltration in LM according to the case

Schema della Tecnica



● : Infiltration points

Vaginal Introit and Vestibule



HEALTHY PT(58yo), with symptoms
menopause related



Pt with LSA (31yo), with symptoms
related to Lichen



NOTES IN ANESTHESIA

**SUPERFICIAL INTRA-MUCOSAL
INJECTION :**
**TOUCH WITH LIDOCAINE 2%
SOAKED GAUZE
IN VAGINAL INTROIT AND
VESTIBULAR AREA**

Side Effects

- **Slight Hyperemia in the injections site (normal and common)**
- **NO EDEMA**
- **NO ECCHIMOSI**
- **NO noteworthy adverse events**

Materials e Metods

Symptoms Score

0=none

1=mild

2=moderate

3=severe

Epithelial Atrophy + Lugol test

0=none

1=mild

2=moderate

3=severe

Vaginal pH

0: <5

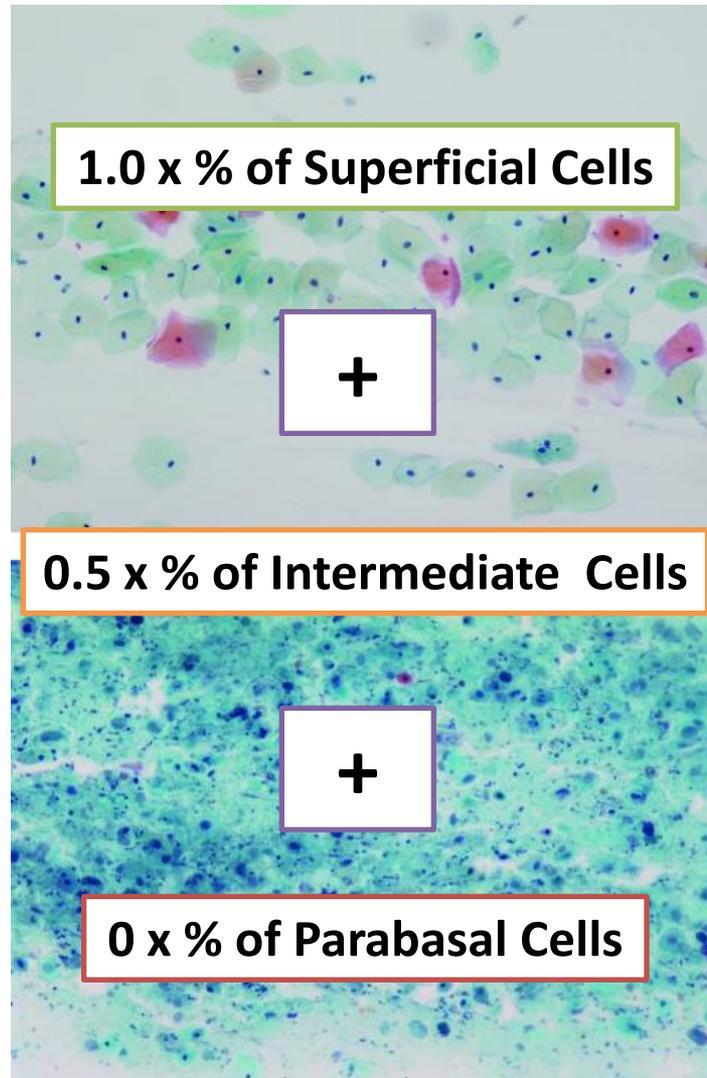
1: 5-5.49

2: 5.5-6.49

3: >6.49

Vaginal Maturation Index

VMI: Vaginal Maturation Index



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Citologic

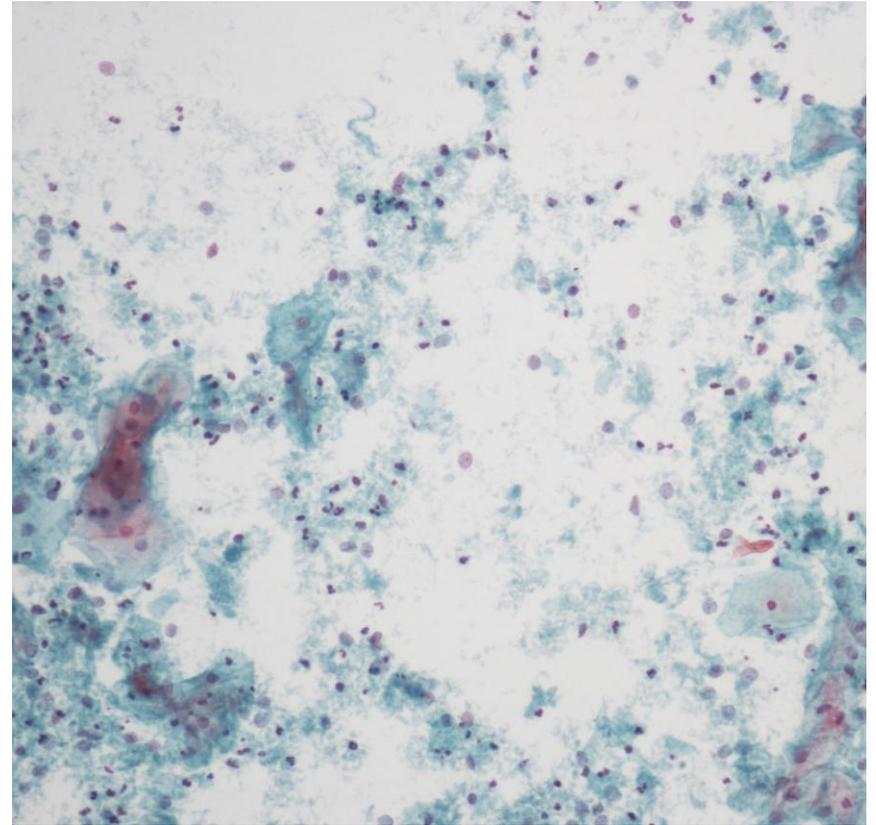
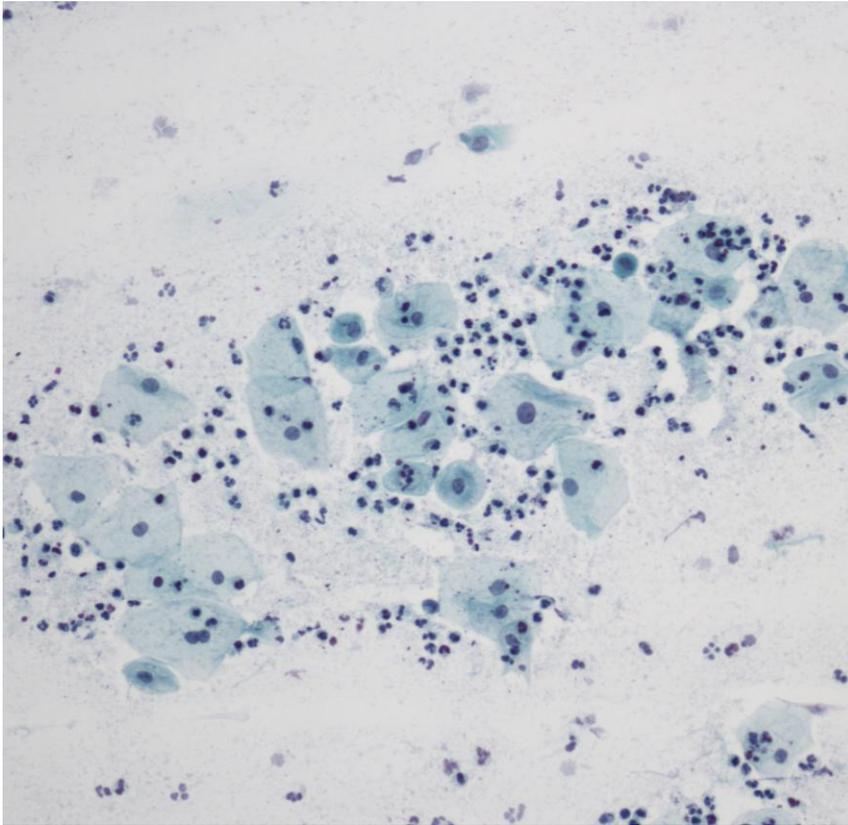
g B (m)

T0

VMI = 21%

T3

VMI = 48%

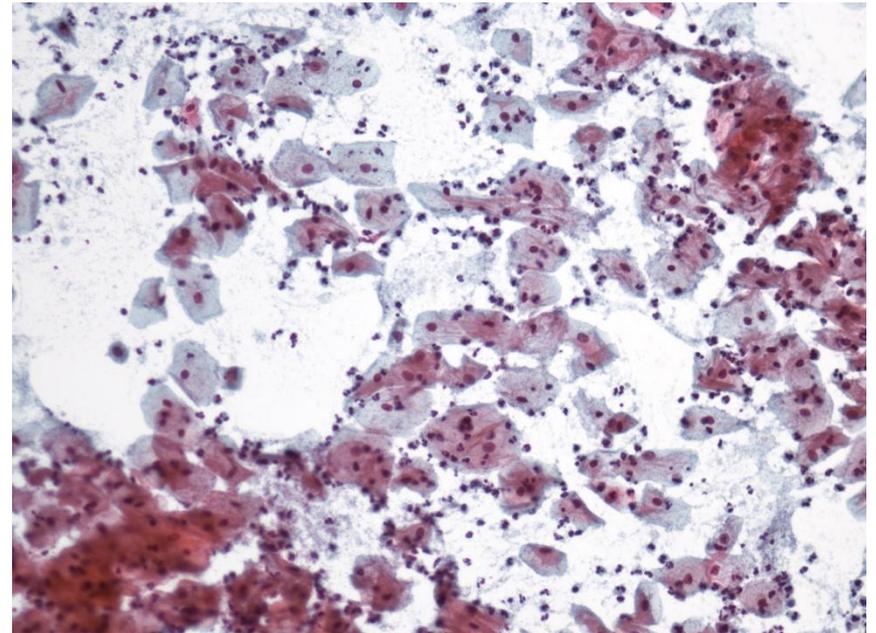
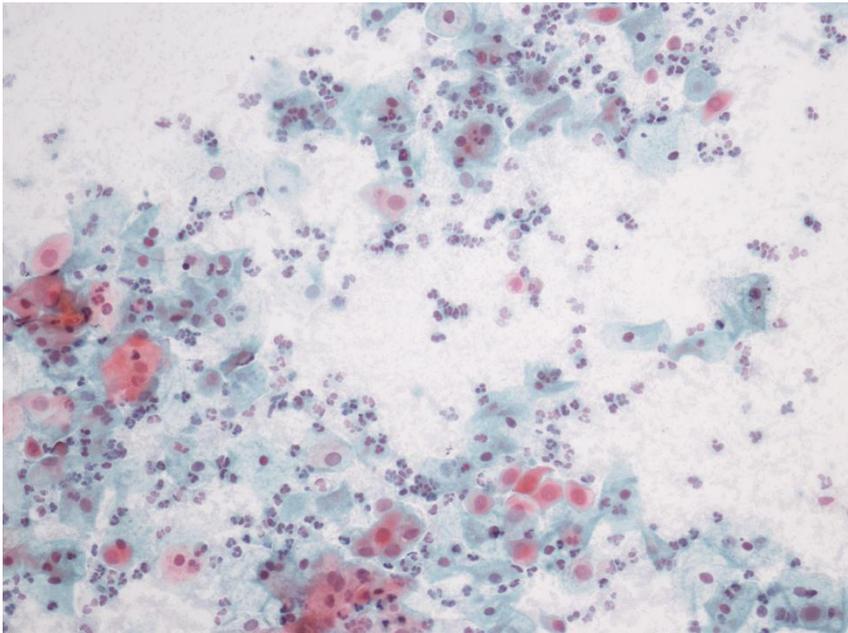


Citologic

g C (pre-m)

T0 VMI = 38%

T3 VMI = 69%



Citologic

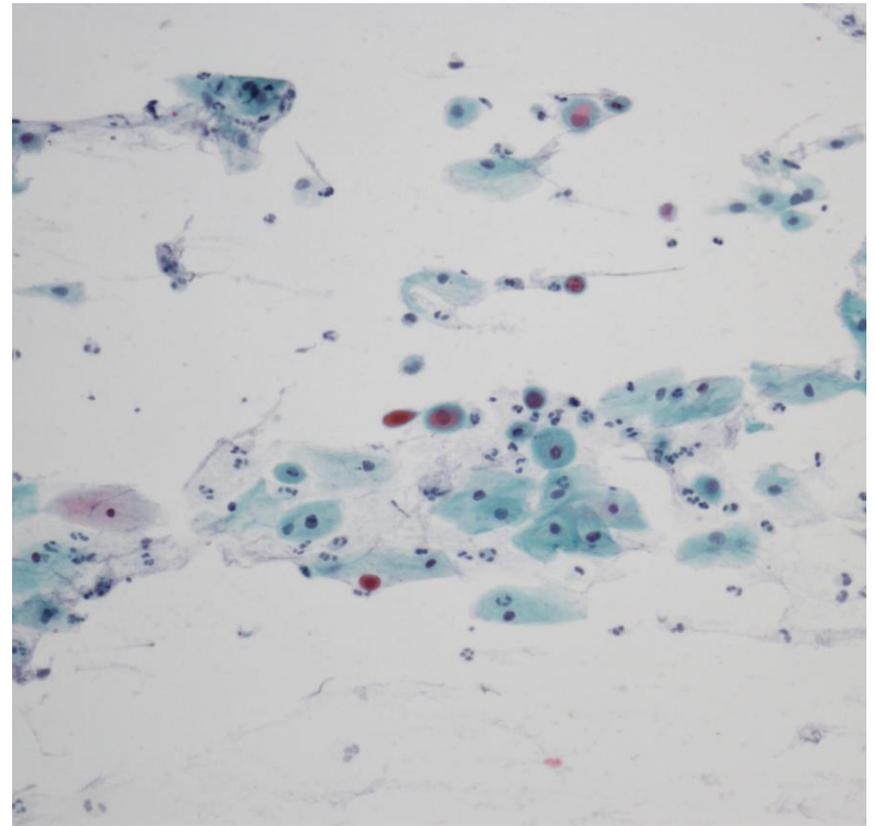
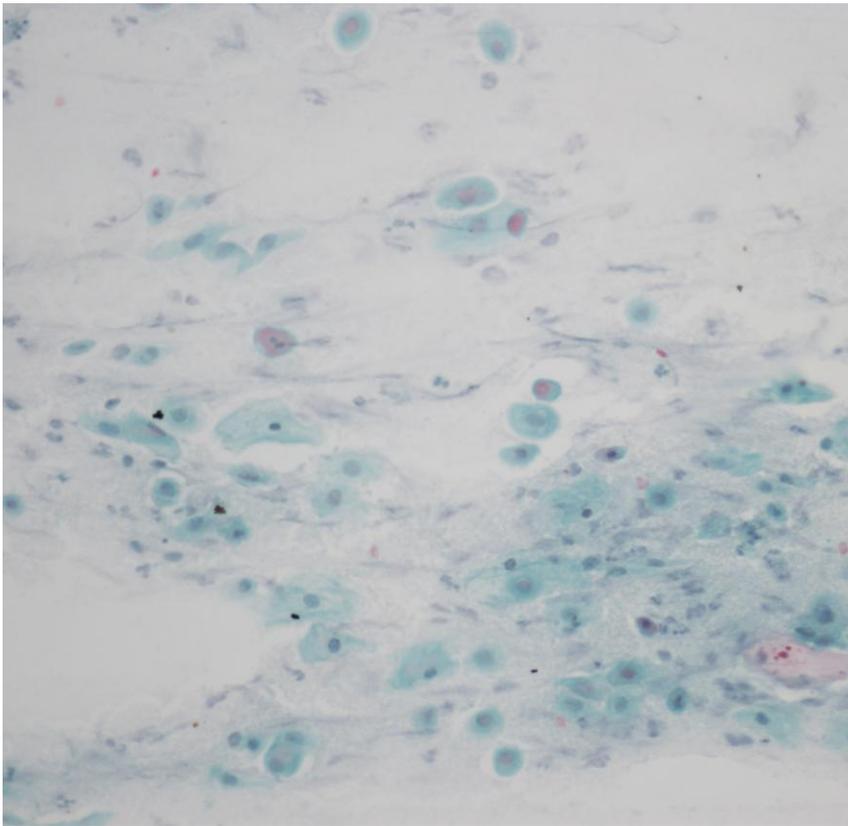
g E (TMX)

T0

VMI = 9%

T3

VMI = 25%



Citologic

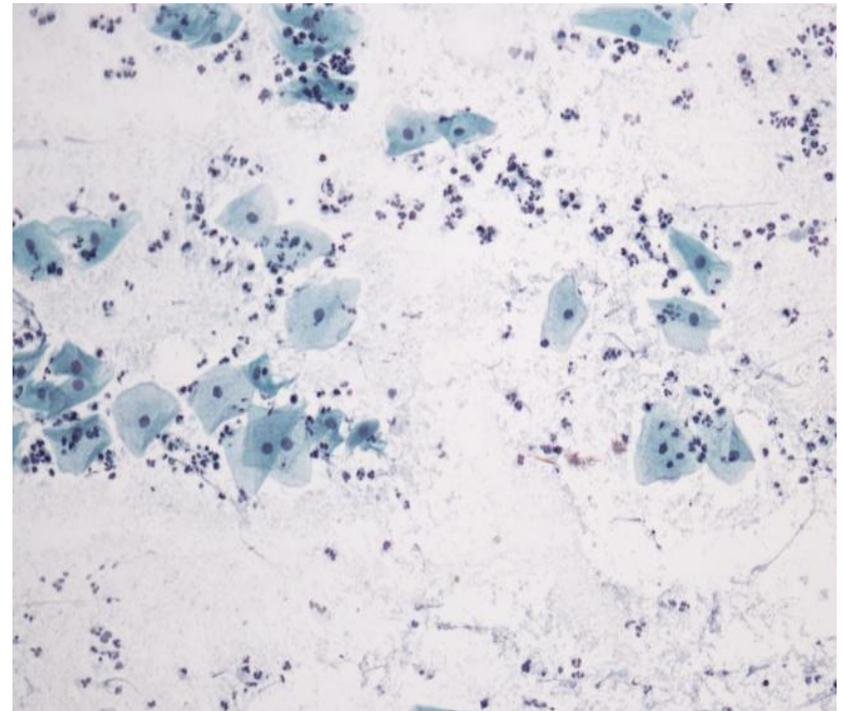
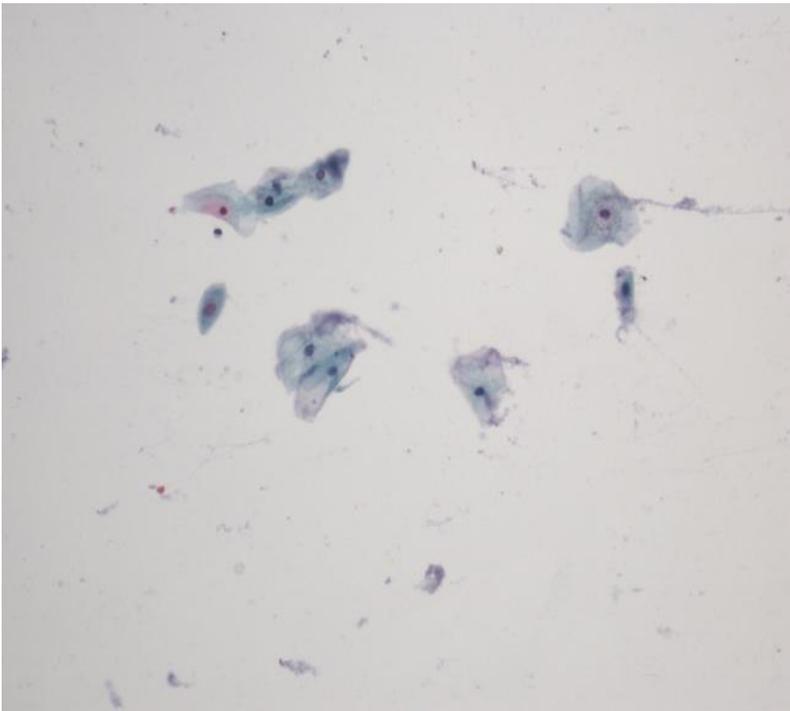
g F (amitr)

T0

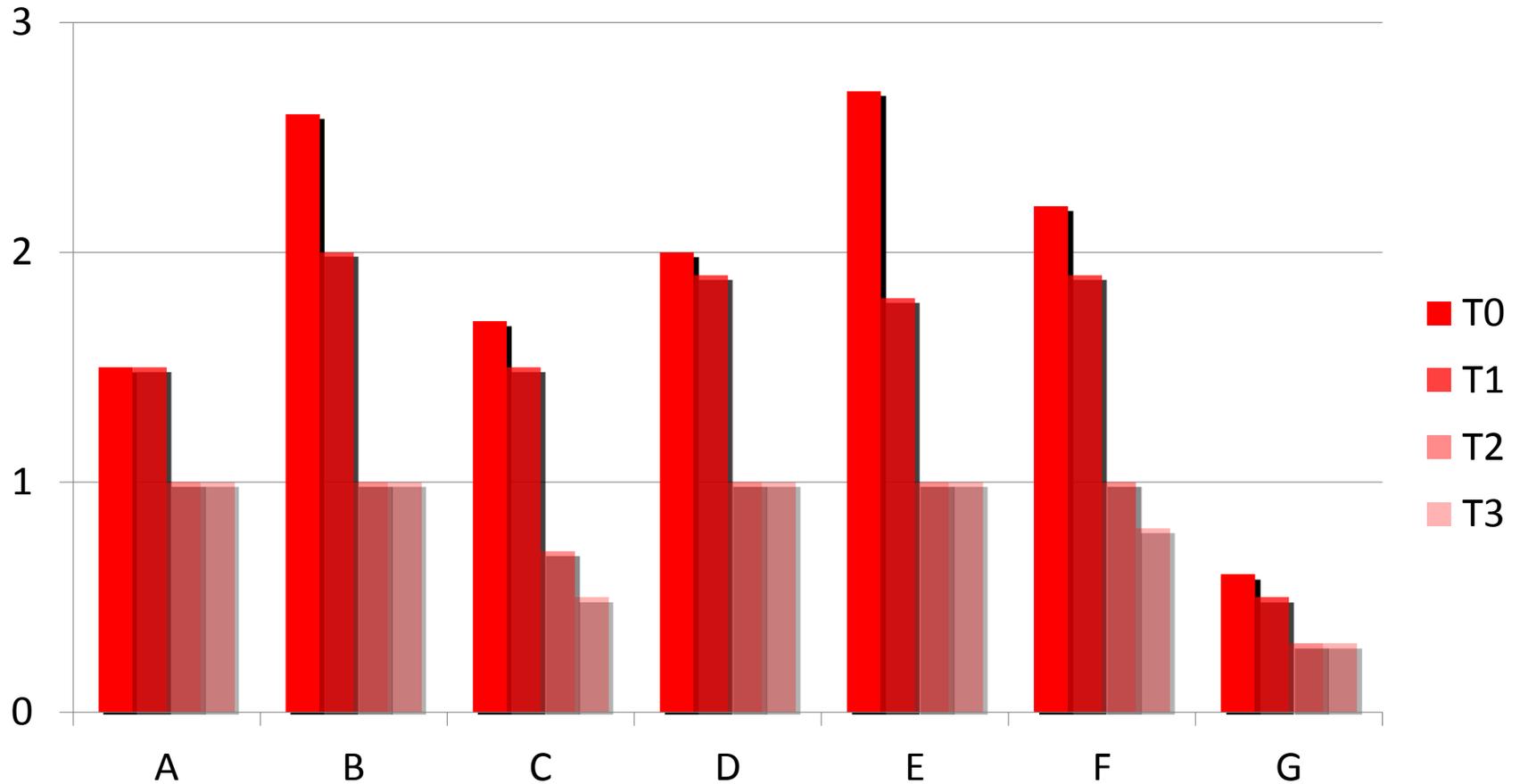
VMI = 32%

T3

VMI = 50%

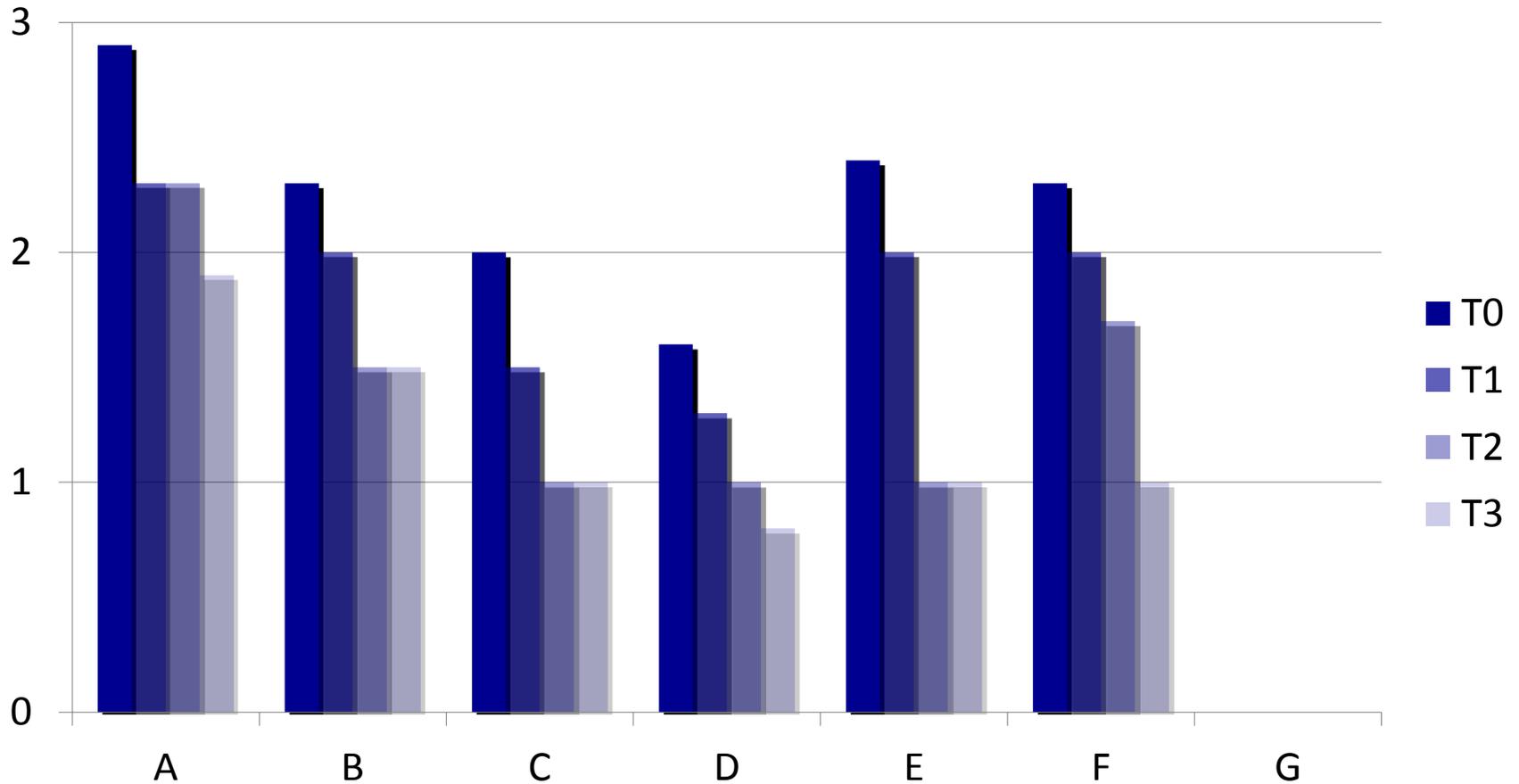


Risultati sulla Secchezza



ΔT : 2 mesi

Risultati sulla Dispareunia



ΔT : 2 mesi

1

**Biostimulation
in mild tissue
hypotrophy
cases:**

HA 19 mg/ml

Injection location:
INTRADERMIC

30 1/2 G needle



2

**Implant using
a needle in
moderate
hypotrophy
cases:**

HA 19 mg/ml

Injection location:
slightly
SUBDERMAL

Ago da 27 G 25mm



3

**Deep implant in
severe
hypotrophy
cases :**

HA 20 mg/ml

Injection location:
DEEP SUBDERMAL
**1,60mm x 12,5 cm
cannula**

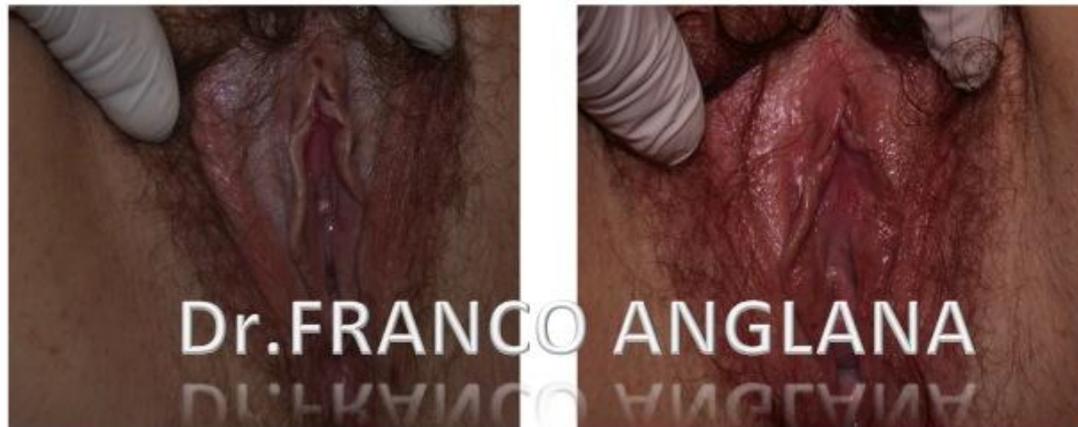
An optimized duration thanks to the interpenetration of the three reticulated matrix AND TO THE PRESENCE OF A SUGAR that protects the product from the degradation having an anti-radical effect (this area of the implant undergoes a more rapid degradation).

OTHER PROCEDURES

PRP

requires a separate discussion

PRP & LSA



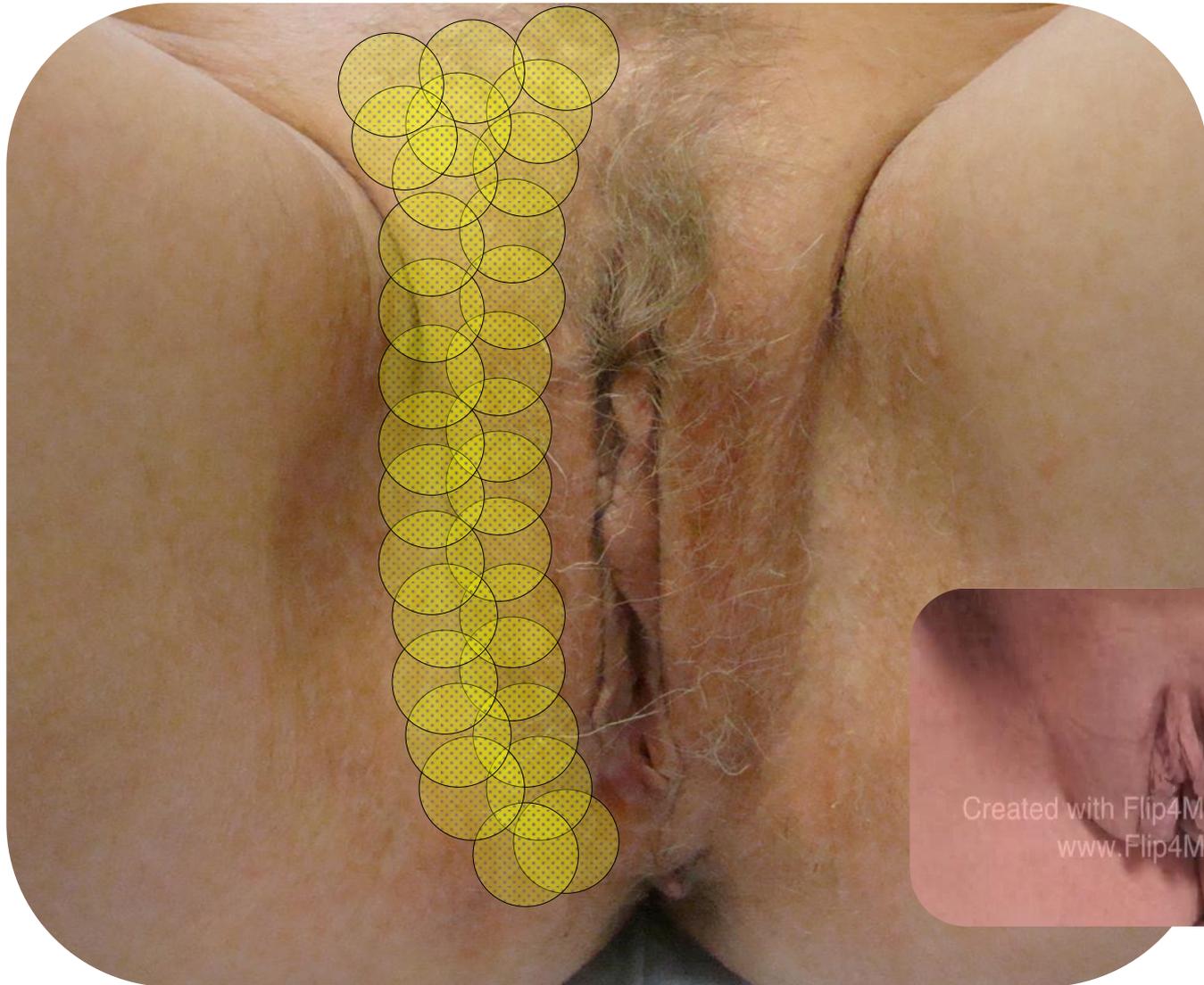
CONCLUSIONS

There is still much to do in this field!!!

We are Studying:

- **N-C-L HA + ALA**
- **Herbium Glass Laser: 1540nm**
- **RF**
- **CARBOXYTHERAPY**
- **LED-TECH**

HERBIUM GLASS LASER: 1540NM



overlapping X 3 times

Elena Fasola MD

RADIOFREQUENCY



RF- Dr.Troy Robbin Haliparn- Dr.RAY case



THANK YOU FOR ATTENTION!!!!

E.Fasola MD



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