


VI Corso Base A.G.E.O.
COLPOSCOPIA
Diagnostica e Operativa del Basso Tratto Genitale
8-9-10 Novembre 2018 MILANO



ELETTRO-RADIO-PORAZIONE NELLA PATOLOGIA VULVOVAGINALE

Dr Claudio Catalisano
MD Obst-Gyn

Cerba HealthCare
ITALIA

DISCLOSURE

- Dichiaro di non avere interessi commerciali nell’esposizione
- dei contenuti di questa relazione

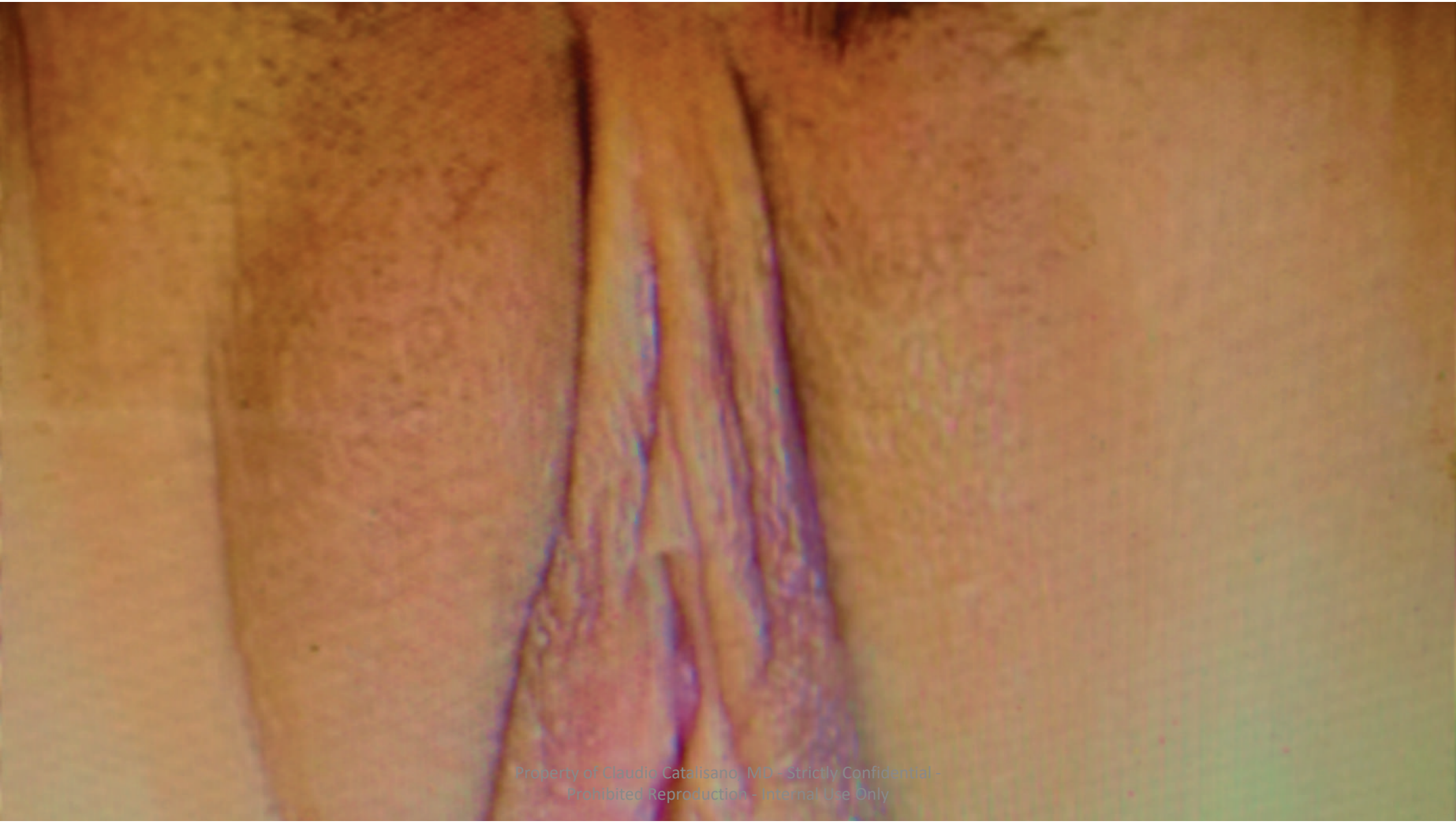
- Faro’ riferimento unicamente alle tecnologie utilizzate

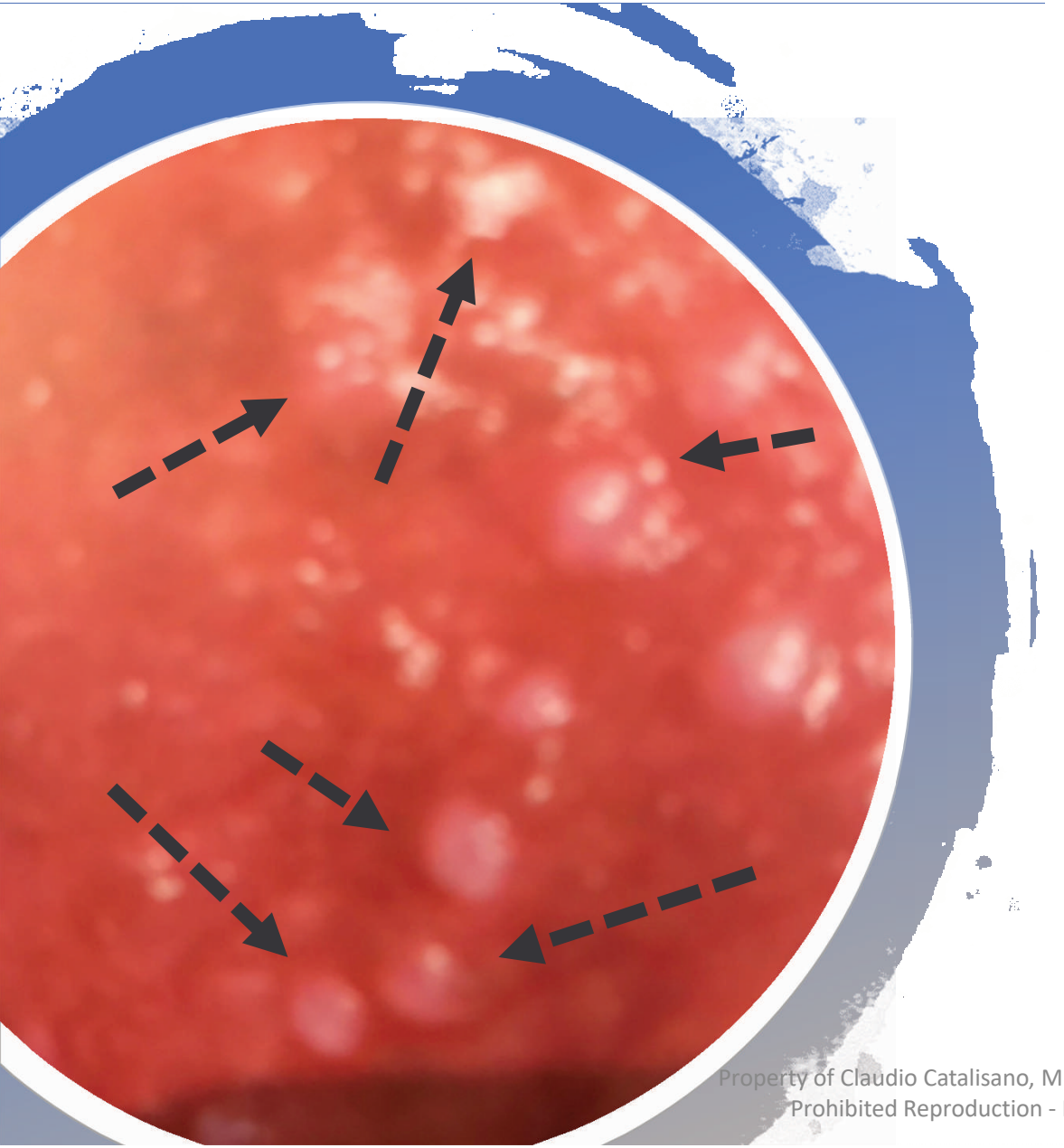
HUMAN PAPILLOMA VIRUS

HIGH RISK	**16,18,31,33** 35,39,45,51,52,56, 58,59,68,82, 26,53,66 (probably)	**CERVICAL CANCER CIN, VIN, VAIN BOWEL CANCER OROPHARYNGEAL CANCER**
LOW RISK	**6,11** 40,42,43,44, 54,61,72,81	**CONDILOMATAS**

Baseman JG, Koutsky LA. The epidemiology of human papillomavirus infections. *J Clin Virol* 2005; 32: S16- 24

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only


Property of Claudio Catalisano, MD - Strictly Confidential -
Prohibited Reproduction - Internal Use Only



GENITAL WARTS

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

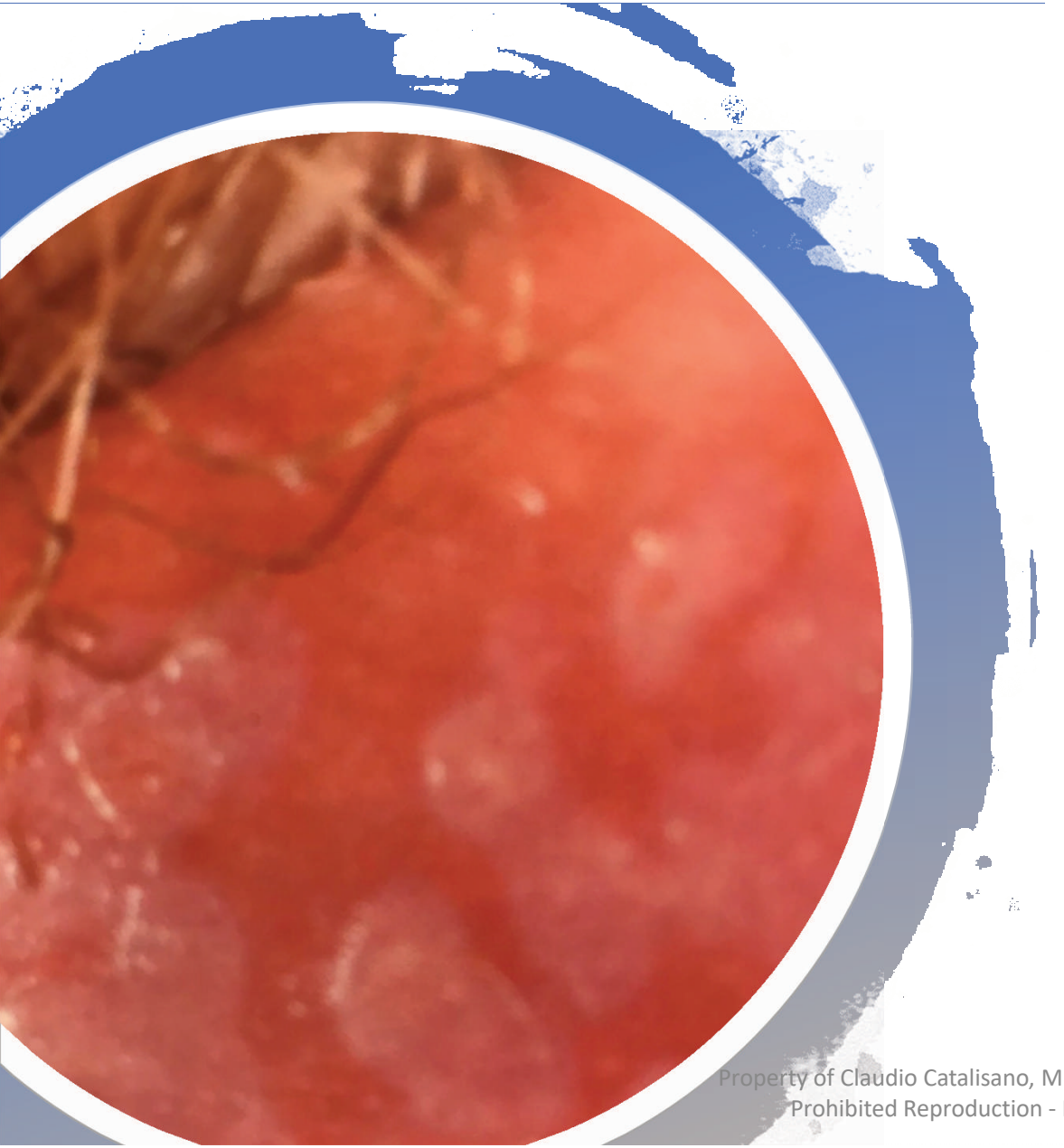

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction -
Internal Use Only



GENITAL WARTS

“FLORID”

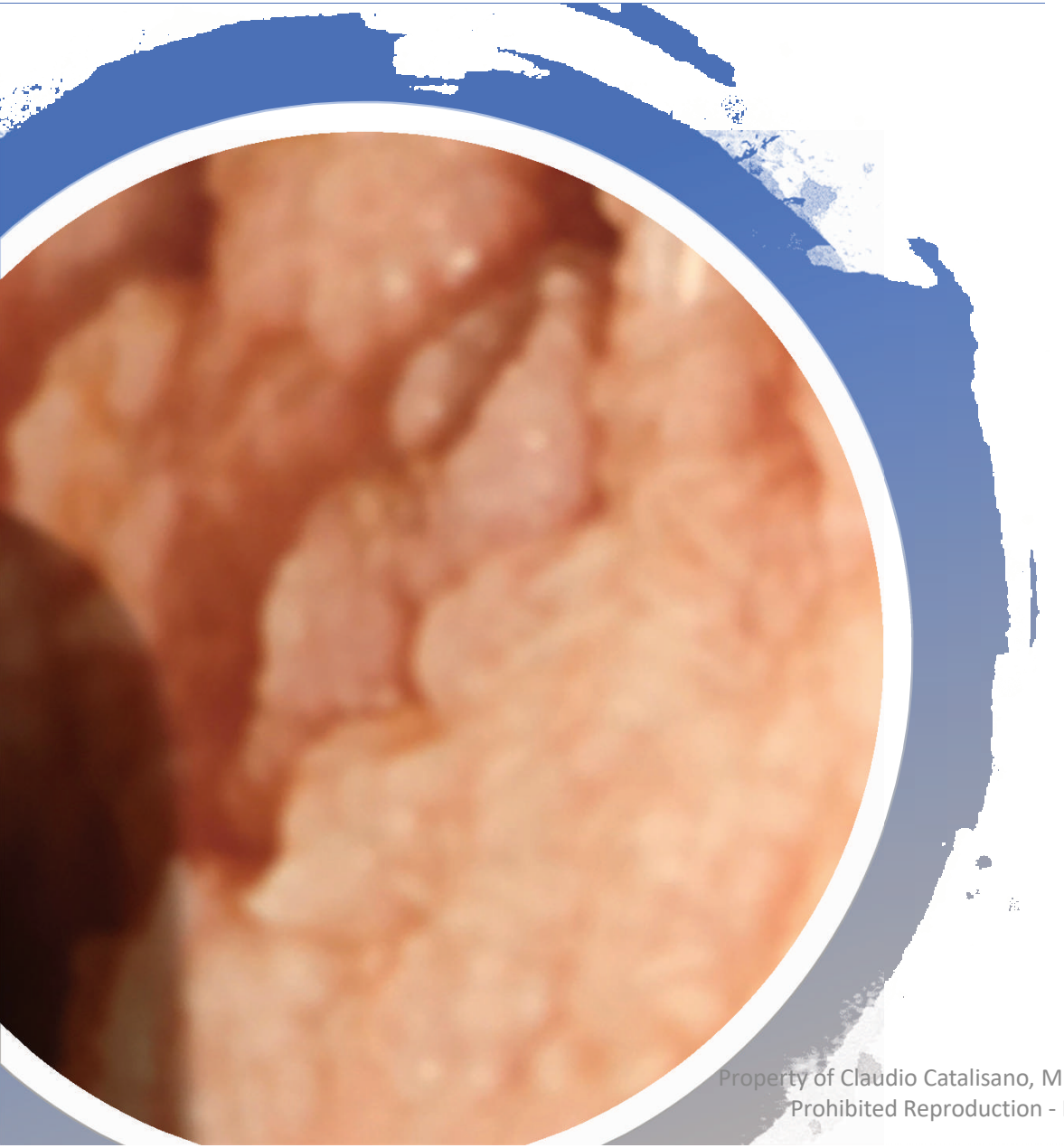
Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



GENITAL WARTS

"FLAT"

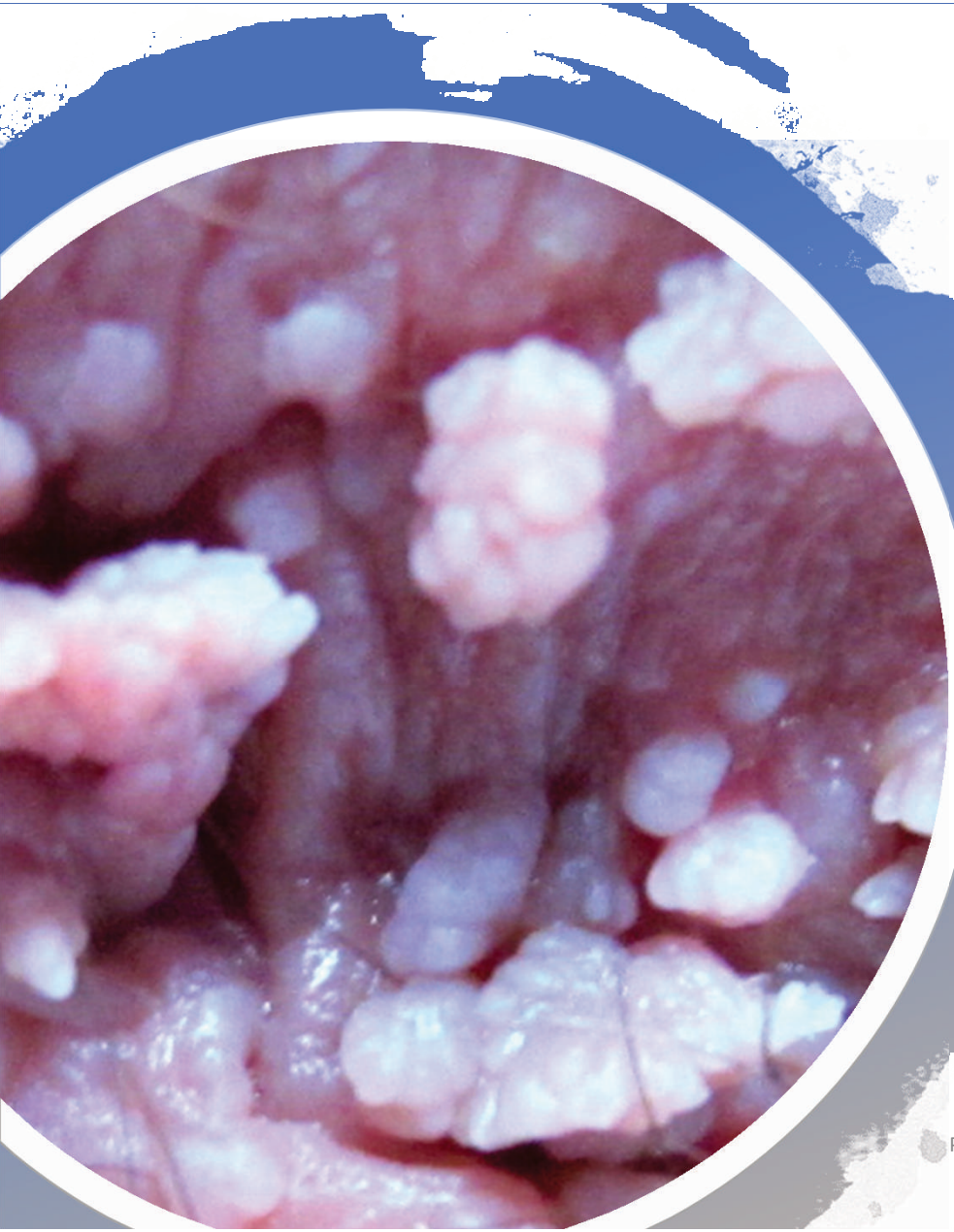
Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



GENITAL WARTS

“FLORID”

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



GENITAL WARTS

“FLORID”

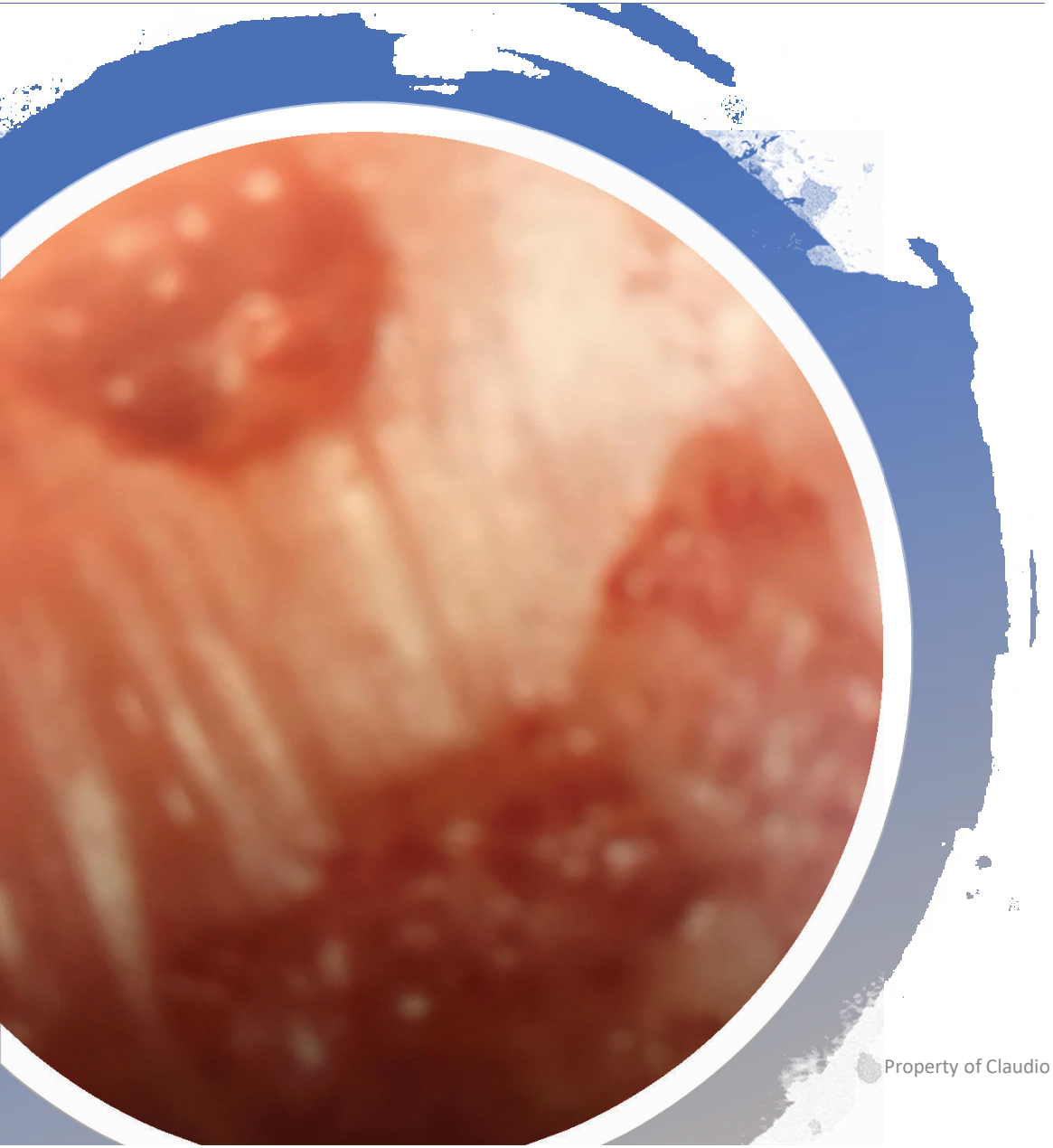
Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



GENITAL WARTS

“FLORID”

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



GENITAL WARTS

“Flat+Accuminata”

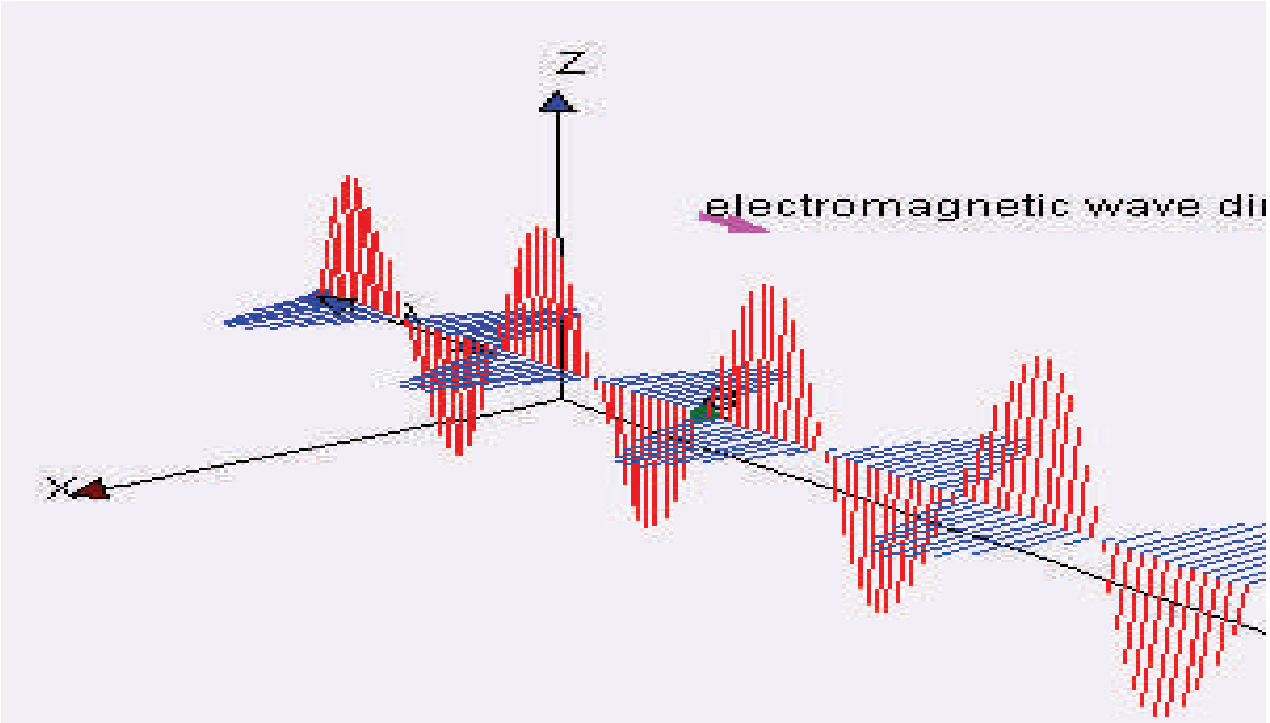
Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



These
Genital Warts
could be defined:

G.W.
« Terrifying»

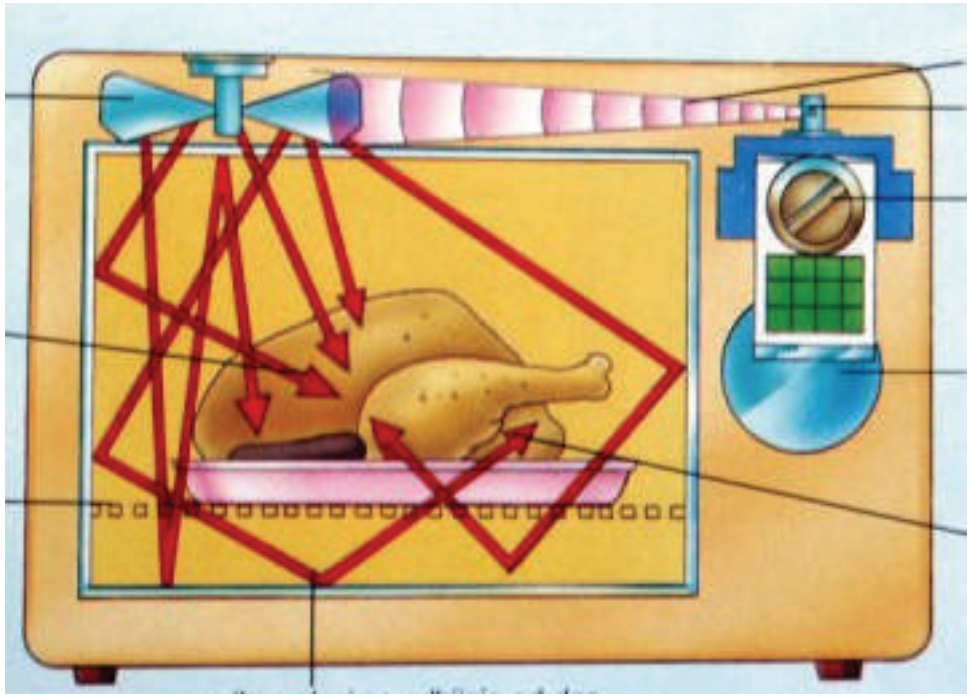
ELECTROMAGNETIC WAVE



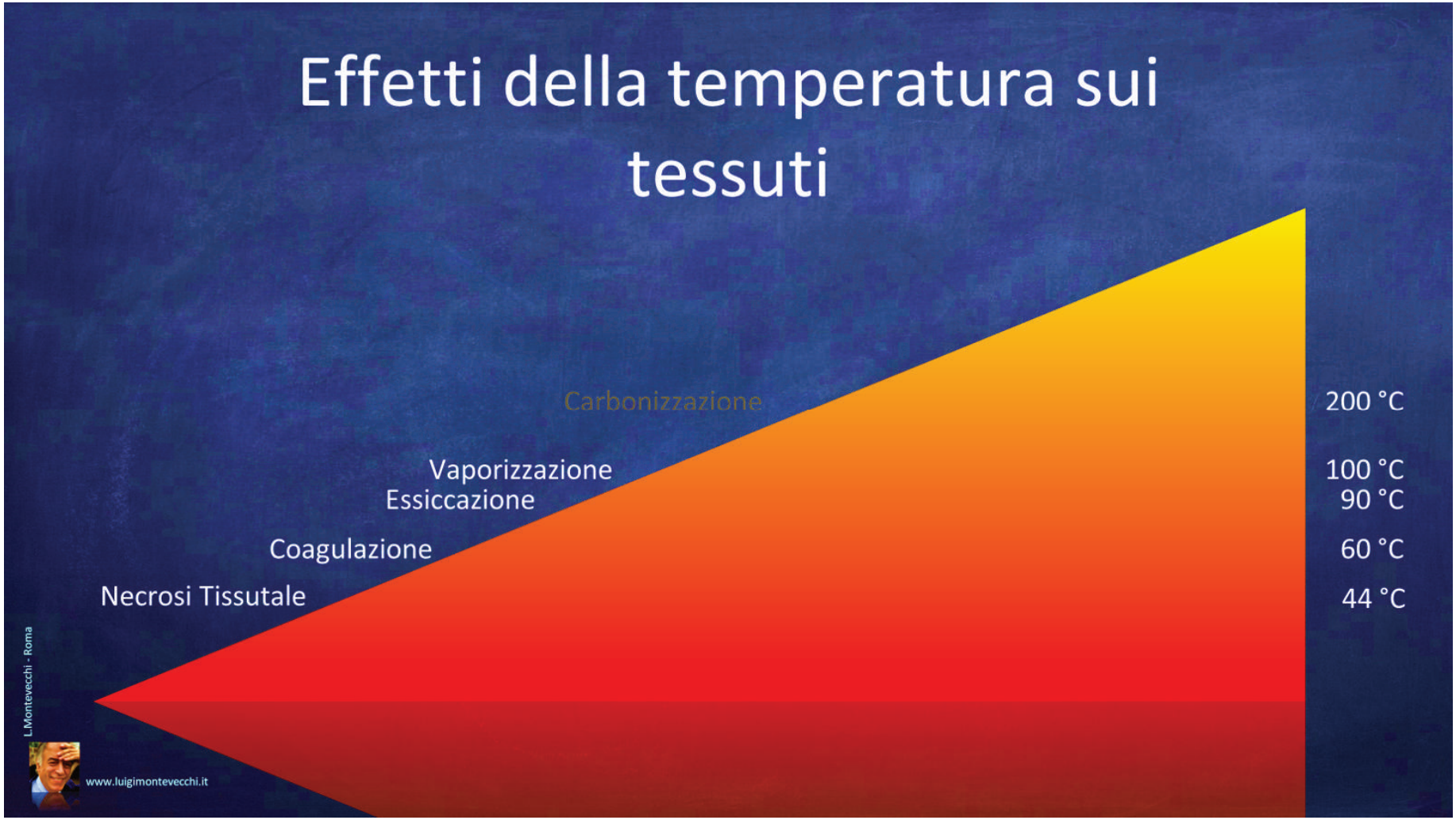
Property of Claudio Catalisano, MD - Strictly Confidential -
Prohibited Reproduction - Internal Use Only

COMMON USE OF RADIOFREQUENCY





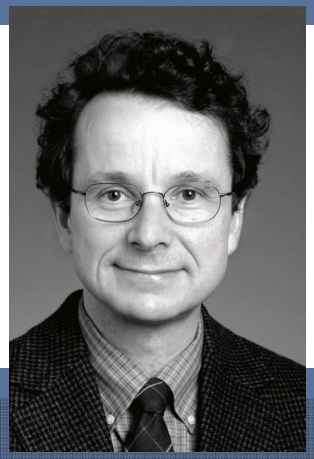
Property of Claudio Catalisano, MD - Strictly Confidential -
Prohibited Reproduction - Internal Use Only

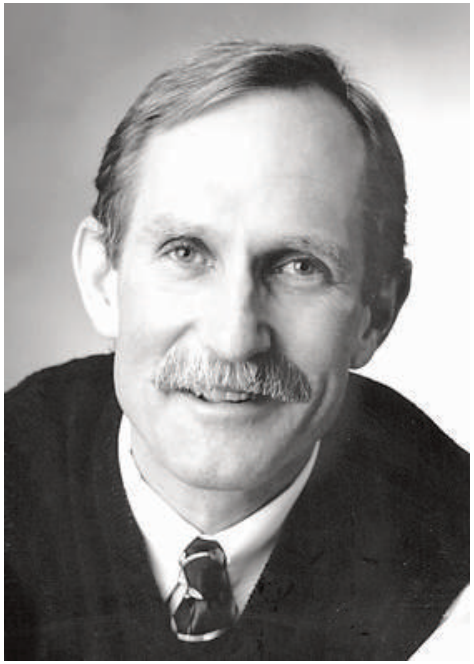


Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

Diapositiva 17

CC1 CLAUDIO CATALISANO; 14/09/2018





WHY RADIOFREQUENCY CAN TREAT VULVO- VAGINAL CONDILOMATAS ??

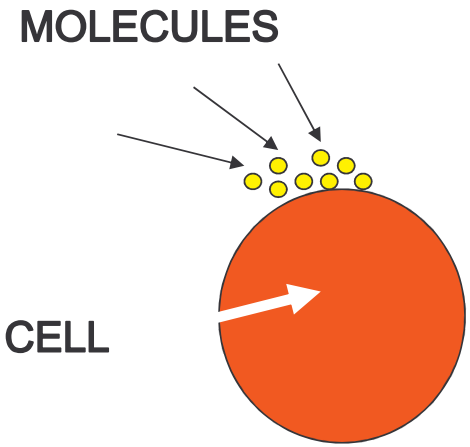
Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

DR AGREE
DR MCKINNON

2003’ NOBEL PRICE
for
ELECTROPORATION

ELECTROPORATION

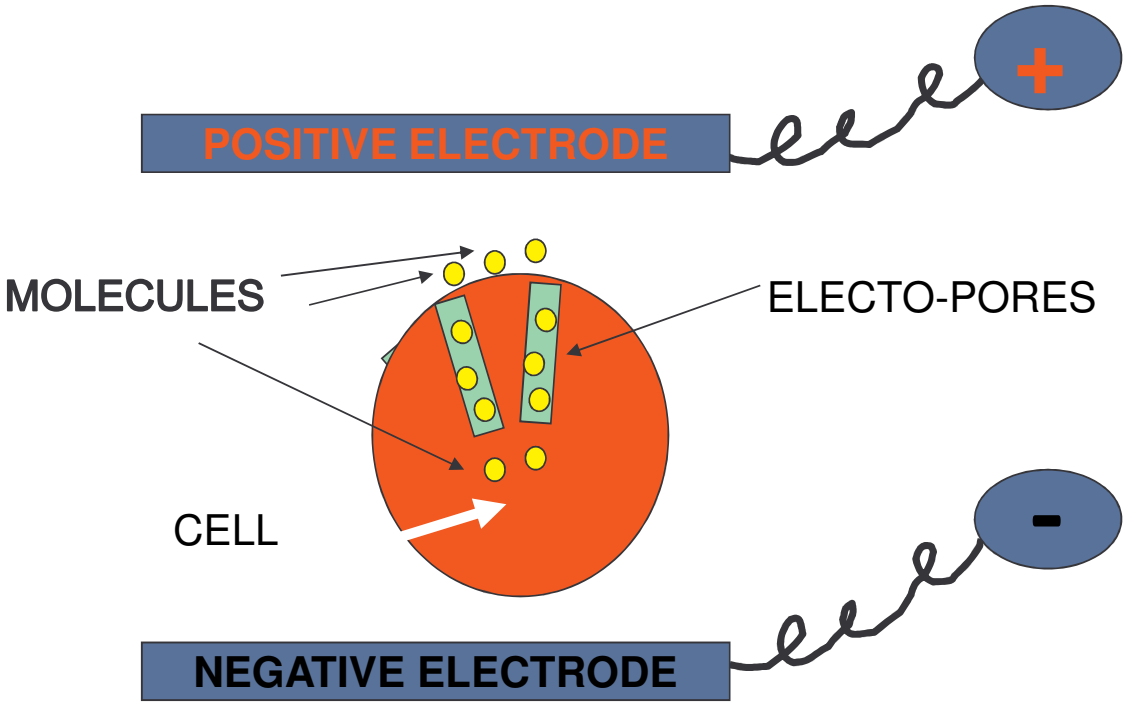
TOPIC-SUBSTANCES -DRUGS



Property of Claudio Catalisano, MD - Strictly Confidential -
Prohibited Reproduction - Internal Use Only

BY ELECTROPORATION

DRUGS AND SUBSTANCES
CAN PENETRATE THE CELLULAR WALLS



Property of Claudio Catalisano, MD - Strictly Confidential -
Prohibited Reproduction - Internal Use Only

BENCHMARKS

ELETTROPORATION

Agree-McKinnon Nobel 2003

To demonstrate the cellular channels by electric waves

RADIOPORATION- **UPR®**

Improved Transfection Efficiency of 293 cells by Radiofrequency Electroporation

(Zhan,Cao,Bao - University of Virginia-USA

Zuld,Murray University of Michigan USA 2012)

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

«PORATION» BY RADIOFREQUENCY

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed

Advanced

Format: Abstract

Send to

Prep Biochem Biotechnol. 2001 Feb;31(1):1-11.

Strategy for increased efficiency of transfection in human cell lines using radio frequency electroporation.

Zald PB[1], Cotter MA, Robertso ES.

Author information

Abstract

Traditional electroporation devices use direct current electric fields to stimulate the uptake of oligonucleotides, plasmids, short peptides, and proteins into a variety of cell types. A variation of this widely used technique is now available which relies on radio frequency (RF) electrical pulses. This oscillating type of electrical field reportedly elicits greater uptake of plasmid DNA across the plasma membrane. We evaluated a protocol for RF electroporation of the a human embryonic kidney cell line and a Burkitt's lymphoma (BL) cell line for effeciency of transfection by RF electroporation. The plasmid EGFP, which codes for the widely used fusion protein, enhanced green fluorescent protein (EGFP), was used as a reporter of plasmid uptake after transfections. Transfection efficiency consistently increased approximately 30% from that typically obtained with conventional DC type electroporation and was accompanied by greater survivability of cells. Additionally, in some instances, percent transfection efficiency increased to over 70%. Thus, RF electroporation represents an improved methodology for transfection of human cell lines. Moreover, the RF protocol is simple to incorporate in laboratories already utilizing conventional electroporation devices and techniques.

PMID: 11321159 DOI: 10.1081/PB-100103367

[Indexed for MEDLINE]

Prohibited Reproduction - Internal Use Only

«Radio-PORATION»
BY
QUADRI-POLAR
ULTRA-PULSED
RADIOFREQUENCY

Clinical Obstetrics, Gynecology and Reproductive Medicine

oat
open access text

Research Article ISSN: 2059-4828

Ultra-Pulsed Radioporation further enhances the efficacy of Dynamic Quadripolar RadioFrequency in women with post-menopausal vulvo-vaginal atrophy

Rosario Tranchini[1] and Mauro Raichi[2]*

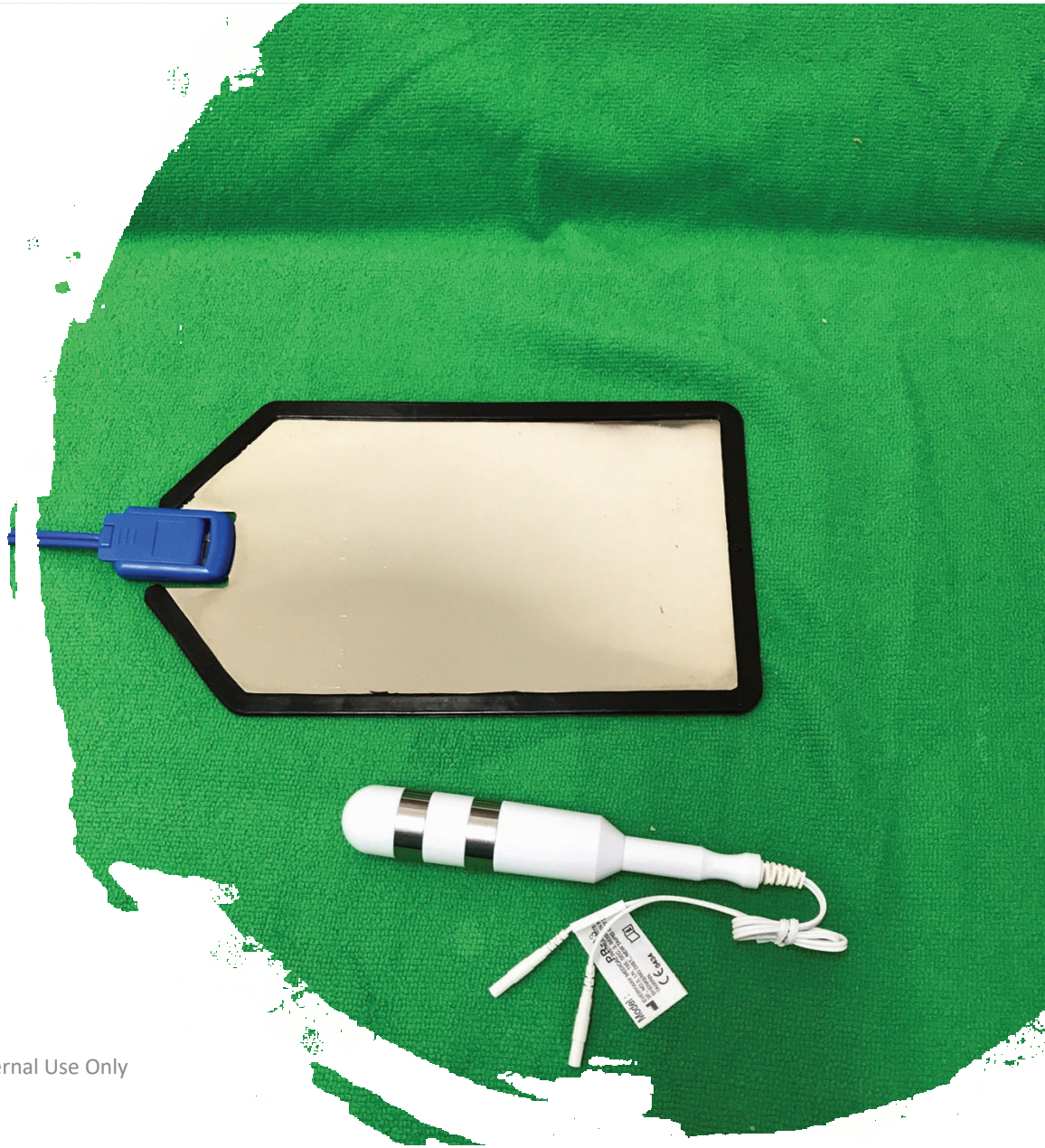
[1]Obstetrician and Gynaecologist, Santa Maria di Loreto Nuovo Hospital, Naples, Italy
[2]Clinical Pharmacology and Biophysics Consultant, Milan, Italy

Abstract

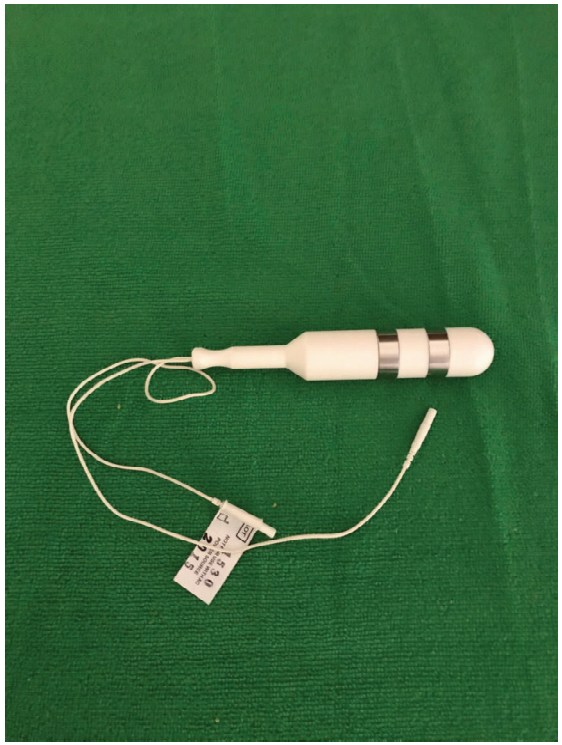
Background: A growing body of evidence illustrates the benefits experienced by women with vulvo-vaginal atrophy/genitourinary syndrome of menopause (VVA/GSM) undergoing vaginal rejuvenation with the very recent low-energy Dynamic Quadripolar RadioFrequency (DQRF™) technology. Twelve-month follow-up data describe significant improvement from both a clinical (relief of VVA/GSM symptoms) and psychological perspective (women's self-esteem and satisfaction from sexual life and couple relationship). The proprietary Ultra-Pulsed Radioporation (UPR™) technology is intended to associate the anti-atrophic benefits of both the DQRF™ technology and any topical agent with anti-atrophic properties. UPR™ acts by opening aqueous channels in cell membranes and further modulating DQRF™ performance. UPR™ helps any active principle with useful properties to penetrate the deep layers of vulvar skin and vaginal mucosa. Topical hyaluronic acid (HA) is increasingly used, based on solid biological rationale, to help slow and reverse the menopause-related loss of elasticity and volume of vulvo-vaginal tissues. This pilot study was designed to verify if the novel UPR™ technology, applied to a test anti-atrophic topical agent like HA in combination with standard DQRF procedures, could indeed enhance the already established anti-atrophic efficacy of the DQRF™ technology.

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

TIPS



Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only





TIPS

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction -
Internal Use Only

PORATION

ELECTRIC WAVES(Agree-Mckinnon)

ELECTROMAGNETIC WAVES-UPR (others authors)

TRADITIONAL THERAPIES FOR GENITAL WARTS

Surgical

Pharmacological

SURGICAL

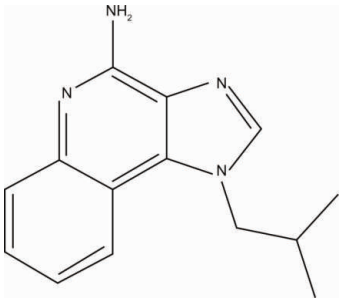
- CO2 laser surgery
- Cryotherapy
- Surgical excision
- Electrosurgery

Bertolotti A, Dupin N, et al. Cryotherapy to treat anogenital warts in nonimmunocompromised adults: systematic review and meta-analysis. *J Am Acad Derm* 2017 (http://dx.doi.org/10.1016/j.jaad.2017.04.012).

PHARMACOLOGICAL

- Bi- or trichloroacetic acid [TCA]
- Podophyllin resin
- Podophyllotoxin
- Imiquimod
- Sinecatechins
- 5-fluorouracil

Bertolotti A, Dupin N, et al. Cryotherapy to treat anogenital warts in nonimmunocompromised adults: systematic review and meta-analysis. *J Am Acad Derm* 2017 (http://dx.doi.org/10.1016/j.jaad.2017.04.012).



IMIQUIMOD

MOLECULAR FORMULA: $C_{14}H_{16}N_4$

MOLECULAR WEIGHT: 240.31 g/mol

Caperton C, Berman B. Safety, efficacy, and patient acceptability of imiquimod for topical treatment of actinic keratoses. *Clinical, Cosmetic and Investigational Dermatology*. 2011;4:35-40. doi:10.2147/CCID.S14109.

National Center for Biotechnology Information. PubChem Compound Database; CID=57469, *https://pubchem.ncbi.nlm.nih.gov/compound/57469* (accessed Apr. 5, 2018).

MECHANISM

IMMUNE MODIFIER:

- STIMULATE RELEASE OF CYTOKINES, TNF-α, IL-6, IL-12, IFN-α, IFN-γ;
- ACTIVATE NK, APC, T CELLS, B CELLS;
- INDUCES CELLULAR MEMORY VIA THE ACTIVATION OF EFFECTOR T CELLS, LANGERHANS CELLS, LYMPHOCYTES, AND MACROPHAGES

Caperton C, Berman B. Safety, efficacy, and patient acceptability of imiquimod for topical treatment of actinic keratoses. *Clinical, Cosmetic and Investigational Dermatology*. 2011;4:35-40. doi:10.2147/CCID.S14109.

POSOLOGY

- 3 APPLICATIONS/WEEK
- 6-8 HOURS
- 1 TO 4 MONTHS

SIDE EFFECTS

- ERYTHEMA
- SKIN EROSION
- EXCORIATION/FLAKING/SCALING
- OEDEMA
- PAIN
- BURNING

Caperton C, Ber8. Thurgar E, Barton S, Karner C, Edwards SJ. Clinical effectiveness and cost-effectiveness of interventions for the treatment of anogenital warts: systematic review and economic evaluation. Health Technol Assess 2016;20(24)man B. Safety, efficacy, and patient acceptability of imiquimod for topical treatment of actinic keratoses. *Clinical, Cosmetic and Investigational Dermatology*. 2011;4:35-40. doi:10.2147/CCID.S14109.

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



COMPLIANCE

A LOT OF PATIENTS
ARE
DROPPING OUT

FROM HERE COME MY IDEA

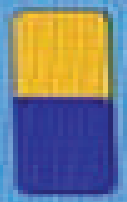
- RF AND PORATION :
- DELIVER MUCH MORE ACTIVES INTO THE TARGET CELLS
- SHORTER APPLICATION (10 MINUTES EACH SESSION)
- REPEATED SESSIONS

PENETRAZIONE DEI FARMACI PER VIA TOPICA

- LEGGE DI FICK : Dq/Dt= R x Ds x A x CV/ h
- Dq= la quantita’
- Dt= il tempo
- R= coefficiente di ripartizione del PA tra veicolo e barriera
- Ds=coefficiente di diffusione del PA attraverso ll’epidermid
- A=supeficie interessata all’assorbimento
- CV= concentrazione nel veicolo
- h= lo spessore attraversato

SITUAZIONI CHE OSTACOLANO LA DIFFUSIONE DEI FARMACI

basso	spessa	piccola	grande



coefficiente ripartizione



spessore barriera



superficie barriera



Dimensione molecola









alto	sottile	ampia	piccola

SITUAZIONI CHE FACILITANO LA DIFFUSIONE DEI FARMACI

CASE REPORT: FIRST PATIENT

- WOMAN
- 40 YEARS OLD
- CONDILOMATAS
- VULVAR FOURCHETTE


Property of Claudio Catalisano, MD - Strictly Confidential -
Prohibited Reproduction - Internal Use Only

BASELINE

AFTER 3 SESSIONS



Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

AFTER 6 SESSIONS



Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

CASE REPORT: SECOND PATIENT

- WOMAN
- 22 YEARS OLD
- CONDILOMATAS
- VULVAR FOURCHETTE AND PERINEUM



BASELINE

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



AFTER 3 SESSIONS

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



AFTER 6 SESSIONS

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only



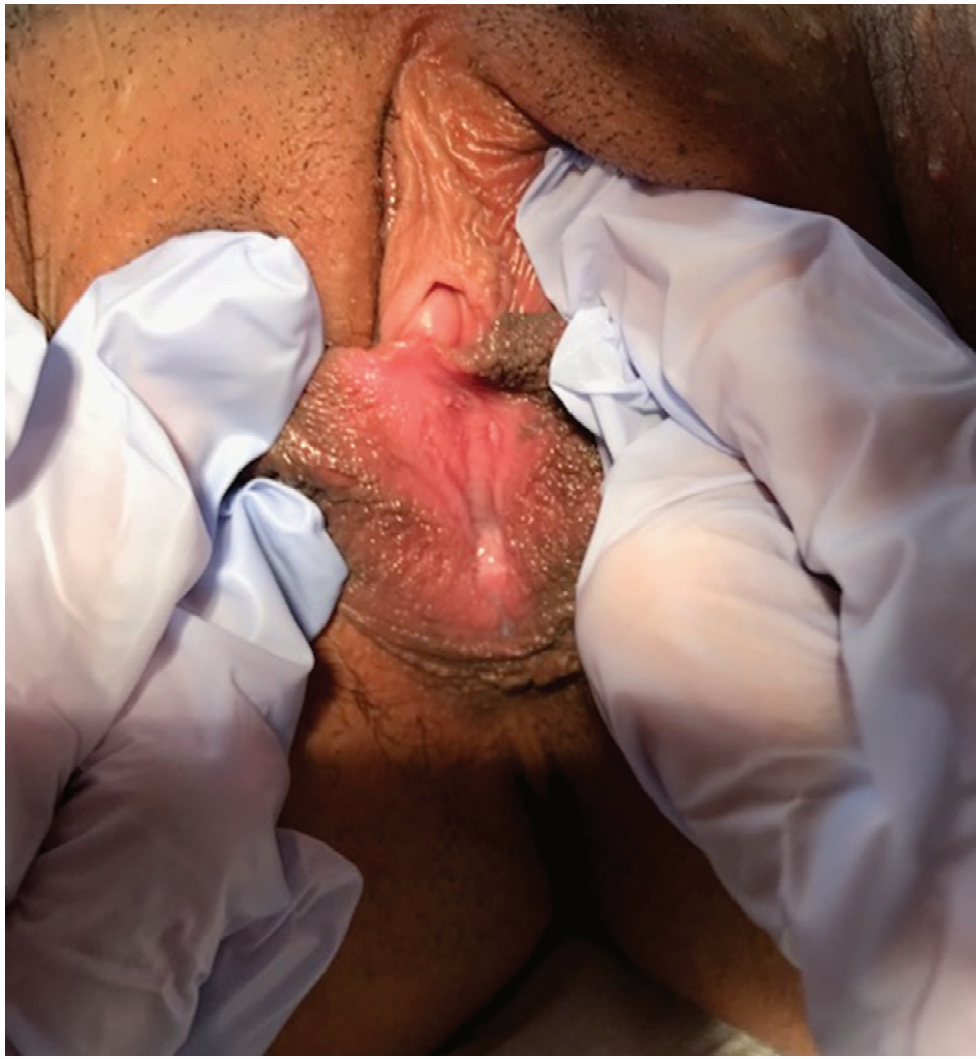
AFTER 12 SESSIONS

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

CASE REPORT: THIRD PATIENT

- WOMAN
- 21 YEARS OLD
- MICROCONDILOMATAS
- Subclinical(only post acetic test 5%)

MICROCONDILOMATAS ACETIC-AC.TEST



PORATION BY
UPR
(ultrapulsedradioF.)







CONCLUSIONS

1. EFFECTIVENESS

   GW DISAPPEARED

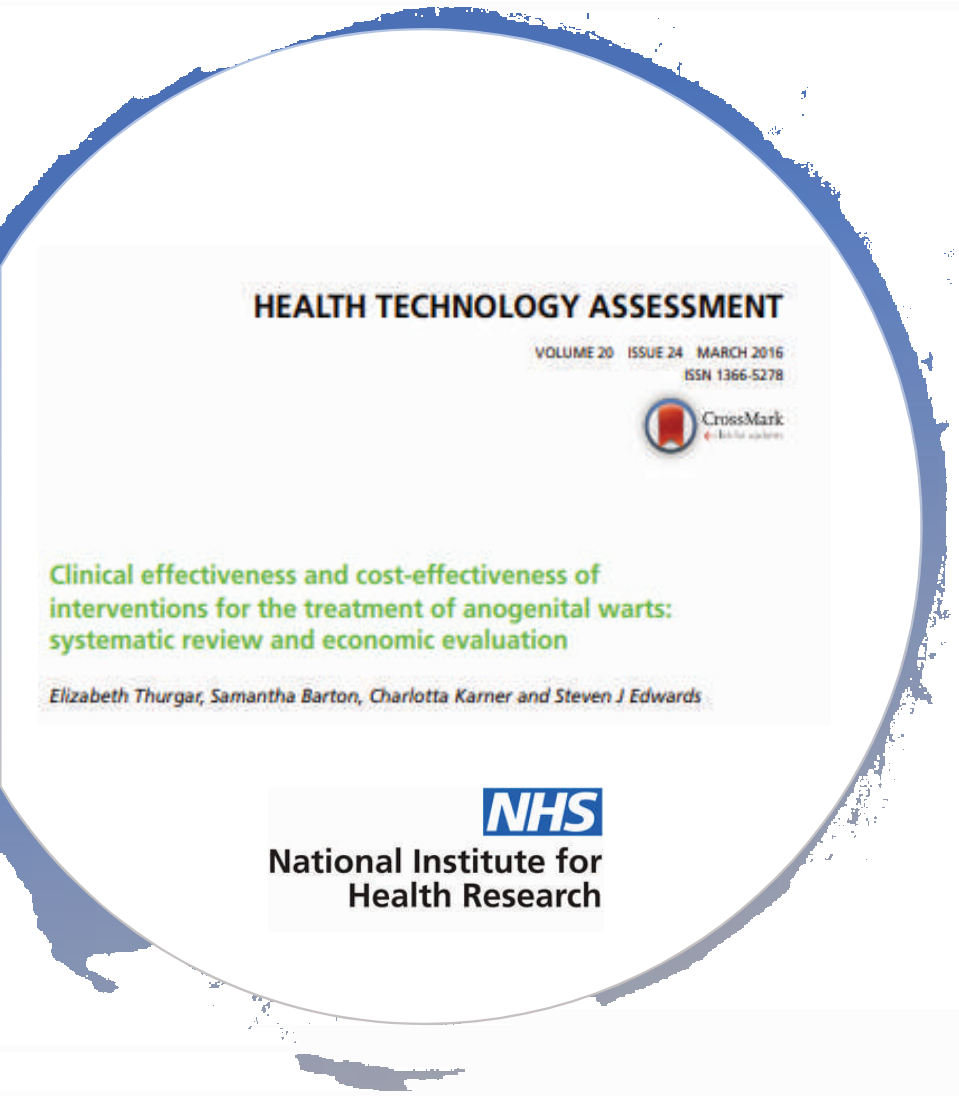
2. NO SIDE EFFECTS

3. NO DISCOMFORT

4. EASY-TO-MASTER TECHNOLOGY

5. SATISFACTION AND COMPLIANCE

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

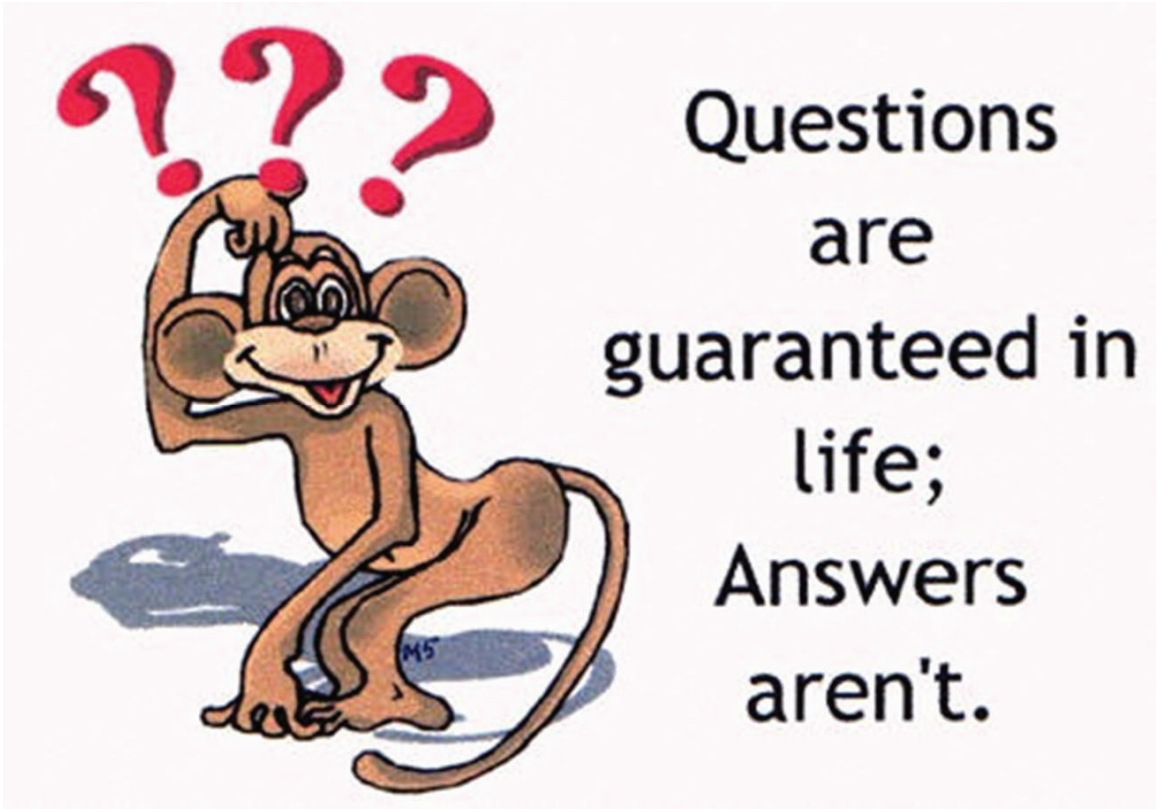


CONCLUSIONS

1. CLINICAL-EFFECTIVENESS?
2. COST-EFFECTIVENESS?
3. PATIENTS COMPLIANCE?
4. PATIENTS WILL?

Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

CONCLUSIONS



Property of Claudio Catalisano, MD - Strictly Confidential - Prohibited Reproduction - Internal Use Only

THANK YOU

CLAUDIO CATALISANO
MD-Ob-Gyn