Atrophic Vaginitis
How to Diagnose and Treat

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Disclosures/Conflicts of Interest

• Hope Haefner, MD has been on the Advisory Board of Prestige, Inc.
Learning Objectives

At the end of this presentation, the participant will
• Gain knowledge on the symptoms of atrophic vaginitis
• Understand the findings of estrogen absence in the vagina
• Evaluate current treatments for vulvovaginal atrophic vaginitis

Clinical Symptoms

• Vaginal soreness, irritation, itching

• Dyspareunia which may be followed by bleeding after intercourse

Often associated with menopausal state, oral contraceptive pills, chemotherapy, and breast-feeding
• pH: Vaginal pH in atrophic vaginitis is more than 4.5 with pH indicator strip or cotton swab inserted into the lateral walls of vagina (no water or lubricant)
• Microscopy (wet mount) to rule out other vaginal conditions such as bacterial vaginosis, candidiasis, and trichomoniasis
• Culture or other testing for infection

Vaginal Examination

Should be performed using a small speculum to
• Avoid injury or bleeding from the atrophic vaginal tissues
• Minimize discomfort
Red Spots on Vagina and/or Cervix

Wet Mount
Immature Epithelial Cells (Parabasal cells) from Estrogen Deficiency

Normal epithelium
Estrogen deficiency

L Edwards, MD
Atrophic Vaginitis

Atrophic Vaginitis Treatment Options

- Moisturizers and lubricants
- Systemic hormone therapy
- Vulvovaginal estrogen treatments
  - Newer treatments
    - Prasterone®
    - Ospemifene®
- Vaginal laser therapy
Moisturizers

Extra Virgin Olive Oil
Vitamin E oil
Coconut Oil
Luvena
Replsens
Moist Again
KY Silk-E
K-Y liquibeads

Lubricants

Water Based
- Astroglide
- Astroglide Gel Just Like Me
- Astroglide Silken Secret
- K-Y Liquid Personal
- K-Y SILK-E
- K-Y Ultra Gel
- Liquid Silk
- Me Again
- Pink Water
- Pjur Water Based
- Pre-Seed
- Probe
- Slippery Stuff Gel
- Sliquid H20
- Sweet seduction
- System Jo H20

Silicone based
- Astroglide X
- Gun Oil
- ID Millennium
- Jo Premium
- K-Y Intrigue
- Lubrin (Suppository)
- Pink Silicone
- Pjur silicone
- Sliquid Silver
- Wet Platinum Premium Lubricant

Hypoallergenic
- Good Clean Love
- Just like Me
Systemic and Vaginal Hormone Therapy

Systemic and vaginal estrogen are effective treatments for vaginal atrophy and can be used together (although costly)

**Estrogen effects**
- Increases the maturation index
- Lowers vaginal pH
- Increases subepithelial capillary growth
- Improves epithelial integrity and differentiation
- Lower doses minimize adverse effects

Vaginal Estrogen Options

- **Creams**
  - Premarin® (conjugated estrogens)
  - Estrace® (estradiol)
  - Estriol
- **Tablet**
  - Vagifem® (estradiol)
    - Slow release tablet containing 10µg 17β-estradiol
    - One tablet per vagina q d x 2 weeks, then twice weekly
- **Rings**
  - Estring® (local), Femring® (systemic) (estradiol vaginal ring)
    - Flexible silicone ring
    - Hormone slowly released Restores pH
    - Problem if limited vaginal capacity or limited manual dexterity / prolapse
Topical Estrogen Treatments
Absorption Needs

• Absorption depends on the estrogen type and dose, and the degree of vaginal atrophy

• Estradiol dose of 10 μg does not increase plasma estradiol levels and does not increase the risk of endometrial hyperplasia and carcinoma
  • Progestins not needed

• Estradiol absorption may be higher when treatment is initiated in patients with significant atrophy
  • Absorption subsequently decreases with continued use

Atrophic Vaginitis
Common Problems

Women often don’t use their estrogen

They read the labels and are scared to use it

• Be sure to educate your patient on the safety of topical estrogens
• Women may think they are too wet and believe they have an infection
  • Warn patients they will get increased but normal discharge
Irritation from topical medications

- Compound estrogen in a bland base (petrolatum)
- Give systemic estrogen for a month when possible, to improve resiliency of the epithelium
  - Systemic estrogen ongoing for a select few

Estrogen deficient women are resistant to vaginal yeast infections

- With re-estrogenization, the risk of yeast increases, especially in the first 3-4 weeks
- Can treat these women proactively with a fluconazole each week or an azole vaginal suppository twice a week for the first 3 weeks of re-estrogenization, or advise them of this risk
Remove Black Box Warning Topical Estrogens

• A new prospective analysis from the Nurses’ Health Study (NHS) indicates that, despite its “black box” warning, low-dose vaginal estrogen does not pose an increased risk of cardiovascular disease (CVD) or cancer


Other Treatments

Oral Pilocarpine

• Shown to stimulate vaginal lubrication (Sjogren’s syndrome)
• Significant improvement in vaginal dryness noted in women with atrophic symptoms following chemotherapy
• Side effects- sweating, bronchial secretion, bronchospasm, bradycardia, vasodilation, and diarrhea

Sturdee 2010
Other Treatments
Vitamins D and E

- Vitamin D appears to be involved in the regulation of vaginal stratified squamous epithelium
- Crossover study of 60 women demonstrated less atrophy symptoms than placebo
- Vitamin E shown to increase vaginal lubrication in one trial

Sturdee 2010; Tan 2012

Other Treatments
Hyaluronic Acid

- 30 postmenopausal women (51-62 years)
- 5 mg sodium hyaluronate intravaginal x 2 wks, then twice weekly for 90 days
- Severity of symptoms improved
- Histopathology improved 12% superficial to 23% superficial (similar to estrogen)

Karaosmanoglu 2011
Newer Therapies

- May 30, 2018 FDA approved Imvexxy® (bioidentical 17 beta estradiol estrogen vaginal insert) for treatment of moderate to severe dyspareunia
- November 17, 2016 FDA approved Intrarosa (Prasterone ®/DHEA) for treatment of dysparuenia
- February 26, 2013 FDA approved Osphena® (ospemifene) (SERM)
- Laser treatments

Imvexxy
### Imvexxy®

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
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<td><img src="image1" alt="Week 1" /></td>
<td><img src="image2" alt="Week 2" /></td>
<td><img src="image3" alt="Week 3" /></td>
<td><img src="image4" alt="Week 4" /></td>
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### Prasterone®/DHEA

- On Nov. 17, 2016, the U.S. Food and Drug Administration approved Intrarosa (prasterone) to treat moderate to severe pain during sex in postmenopausal women.
Efficacy of Intravaginal Dehydroepiandrosterone (DHEA) on Moderate to Severe Dyspareunia and Vaginal Dryness, Symptoms of Vulvovaginal Atrophy, and of the Genitourinary Syndrome of Menopause

- Prospective, randomized, double-blind, placebo-controlled trial
- Effect of daily intravaginal 0.50% DHEA (Prasterone®) was examined

<table>
<thead>
<tr>
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<th>Prasterone 0.50%</th>
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<tbody>
<tr>
<td>Parabasal cells</td>
<td>27.7% decrease (P &lt; 0.0001)</td>
</tr>
<tr>
<td>Superficial cells</td>
<td>8.4% increase (P &lt; 0.0001)</td>
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<tr>
<td>Vaginal pH</td>
<td>0.66 pH unit decrease (p &lt; 0.0001)</td>
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<tr>
<td>Pain with sexual activity</td>
<td>1.42 severity score decrease at baseline or 0.27 unit over placebo (p= 0.0002)</td>
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<td>Serum steroid levels</td>
<td>Remained well within the normal postmenopausal values</td>
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<td>Only 1 side effect</td>
<td>Vaginal discharge due to melting of the vehicle at body temperature in 6% of patients</td>
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Labrie et al., Menopause 2018

Intravaginal DHEA (Prasterone®) on the Female Sexual Function Index (FSFI) in postmenopausal women

- The long-term effect of 52-week treatment with daily intravaginal DHEA 0.50% (6.5 mg) was assessed with the Female Sexual Function Index in 154 postmenopausal women with mild to severe symptoms of VVA

<table>
<thead>
<tr>
<th>FSFI domains</th>
<th>Changes after one year</th>
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<tbody>
<tr>
<td>Desire</td>
<td>28 %</td>
</tr>
<tr>
<td>Arousal</td>
<td>49 %</td>
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<tr>
<td>Lubrication</td>
<td>115 %</td>
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<tr>
<td>Orgasm</td>
<td>51 %</td>
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<tr>
<td>Satisfaction</td>
<td>41 %</td>
</tr>
<tr>
<td>Pain</td>
<td>108 %</td>
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<tr>
<td>Total FSFI Score</td>
<td>Increased from 13.4 ± 0.62 at baseline to 21.5 ± 0.82 (+60%)</td>
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Bouchard et al., 2016
**Osphena®**

- Osphena® (Ospemifene), an oral SERM, has received FDA approval for the treatment of moderate to severe dyspareunia, approved for atrophic vaginitis
  - SERM with estrogen agonist effects on vagina tissue and estrogen antagonist in breast tissue
  - Makes vaginal tissue thicker and less fragile
- Dose: 60 mg PO daily with food
- Indication: moderate to severe dyspareunia
- Monitor for abnormal uterine bleeding

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**Vulvovaginal Atrophy and Laser Treatments**

- Vaginal application of CO₂ laser achieves a deep thermal effect on vaginal collagen
- Collagen improves its remodeling
- Increase of lactobacilli growth, thus decreasing vaginal pH
## Complementary/Alternative Treatments

- Phytoestrogens
- Black Cohosh
- Vitamins (D and E)
- Oral pilocarpine
- Hyaluronic acid
- Nettle
- Comfrey root
- Don quai root
- Motherwort
- Wild yam
- Bryonia
- Acidophilus

## Breast Cancer History
One Last Tip

- If there is inflammation, consider hydrocortisone acetate 25 mg rectal suppositories/cream per vagina

Thank You!
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