Disclosures

• Consultant for
  – Apricus
  – Emotional Brain
  – Palatin
  – Sprout
  – Shionogi
  – Pfizer
  – NovoNordisk
  – Trimel
  – Viveve
Learning Objectives

• Define the female sexual disorders
• Identify how postmenopausal sexuality is perceived and experienced
• Outline techniques for effective assessment of and communication around sexual health
• Describe treatment options for the female sexual disorders
“Normal” Female Sexuality Defined by Cultural Norms

• Historically given little attention
• Victorian era: discovery that female orgasm is irrelevant to conception
• 2013: Women’s sexuality hits ‘Primetime’, but not quite its ‘Prime’
Cultural Recognition of Ageless Sensuality: Role Models for the 64 Million U.S. Women Over Age 45
Postmenopausal Sexual Attitudes and Behaviors
Importance of Sexuality to QOL: AARP

Agreeing That Sex Is Important to QOL (%)

Age (y)

45-49 50-59 60-69 70+

Men

Women

Fisher L. AARP Survey. 2010
How Important is Sex in Overall Life

![Bar chart showing the percentage of respondents who find sex moderately, very, or extremely important.

Men: 83%
Women: 63%

*5-point scale where 5 is extremely important and 1 is not at all important.

Laumann, et al. 2005 The Global Study of Sexual Attitudes and Behavior

40-80 years of age
Do you agree with the statement "older people no longer want sex"?

**Males**

- Somewhat/Strongly Agree (4-5): 17%
- Neither (3): 18%
- Somewhat/Strongly Disagree (1-2): 64%

**Females**

- Somewhat/Strongly Agree (4-5): 24%
- Neither (3): 56%
- Somewhat/Strongly Disagree (1-2): 20%

Based on a 5-point scale, where "5" is Strongly Agree and "1" is Strongly Disagree.
Do you agree with the statement “older people no longer have sex”?

Males
- Somewhat/Strongly Agree (4-5): 15%
- Neither (3): 19%
- Somewhat/Strongly Disagree (1-2): 65%

Females
- Somewhat/Strongly Agree (4-5): 20%
- Neither (3): 58%
- Somewhat/Strongly Disagree (1-2): 20%

Based on a 5-point scale, where “5” is Strongly Agree and “1” is Strongly Disagree.
Have you had intercourse in the past 12 months?

- Males: 82%
- Females: 64%
How frequently have you had sex in the past 12 months?

**Males**
- Less than once per month: 2%
- Less than once per week: 13%
- 1 – 6 times per week: 26%
- Once a day, or more: 57%

**Females**
- Less than once per month: 2%
- Less than once per week: 17%
- 1 – 6 times per week: 51%
- Once a day, or more: 27%

Note: Among those who have had sex in the past 12 months.
A study of sexuality and health among older adults in the U.S.: National Social Life, Health, and Aging Project

- 1550 women and 1455 men ages 57-85
- Majority of older adults in an intimate relationship regard sexuality as important part of life
- Though sexual problems are frequent, many older Americans are still sexually active
- Physical health more strongly associated with being sexually active than age alone
- Sexual activity declines with age, yet many sexually active in 70’s & 80’s

Lindau ST et al. NEJM, 2007; 357(8):762-774.
Sex Has a Huge Impact on a Relationship

- When sex is good, it adds 15-20% additional value to a relationship
- When sex is bad or non-existent, it plays an inordinately powerful role draining the relationship of all positive value, about 50-70%!

Barry McCarthy 1997
JSMT
Which Counts More?
Age of Relationship or Age of Partners

Length Matters!
What We Expect Sex to Be

EASY
EXCITING
SPONTANEOUS
PASSIONATE
EVERY TIME!!!
The TRUTH

Long Term Success Requires WORK and EFFORT
Human Sexual Response: Classic Models

- Excitement
- Plateau
- Orgasm
- Resolution

Divided

Desire

Arousal

Linear Progression

Female Sexual Response Cycle

Excitement

Plateau

Orgasm

Adapted from Masters WH, Johnson VE. Human Sexual Inadequacy. Little Brown; 1970.
Female Sexual Response Cycle

- Spontaneous Sexual Drive
- Sexual Arousal
- Arousal and Sexual Desire
- Emotional and Physical Satisfaction
- Emotional Intimacy
- Sexual Stimuli
- Biologic
- Psychological

Biopsychosocial Model of Female Sexual Response

- **Biology**
  - (e.g., physical health, neurobiology, endocrine function)

- **Psychology**
  - (e.g., performance anxiety, depression)

- **Sociocultural**
  - (e.g., upbringing, cultural norms and expectations)

- **Interpersonal**
  - (e.g., quality of current and past relationships, intervals of abstinence, life stressors, finances)

### Female Sexual Dysfunction: DSM-IV-TR Codes and Definitions

<table>
<thead>
<tr>
<th>Sexual desire disorders</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoactive sexual desire disorder</td>
<td>302.71 or 799.81</td>
</tr>
<tr>
<td>Sexual aversion disorder</td>
<td>302.79</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sexual arousal disorders</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Female sexual arousal disorder</td>
<td>302.72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orgasmic disorders</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Female orgasmic disorder</td>
<td>302.73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pain disorders</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyspareunia</td>
<td>302.76 or 625.0</td>
</tr>
<tr>
<td>Vaginismus</td>
<td>306.51 or 625.1</td>
</tr>
</tbody>
</table>

Am Psych Assoc 2000; Buck, et al. 2008
### Female Sexual Disorders: DSM 5

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Code</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female Orgasmic Disorder</strong></td>
<td>302.73</td>
<td>Presence of either of the following on all or almost all (75%-100%) occasions of sexual activity:</td>
</tr>
<tr>
<td></td>
<td>(F52.31)</td>
<td>1. Marked delay in, marked infrequency of, or absence of orgasm.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Markedly reduced intensity of orgasmic sensations</td>
</tr>
<tr>
<td><strong>Female Sexual Interest/Arousal disorder</strong></td>
<td>302.72</td>
<td>Lack of, or significantly reduced, sexual interest/arousal as manifested by 3 of the following:</td>
</tr>
<tr>
<td></td>
<td>(F52.22)</td>
<td>1. Absent/reduced interest in sexual activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Absent/reduced sexual/erotic thoughts or fantasies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. No/reduced initiation of sexual activity and unreceptive to partner’s attempts to initiate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all (75%-100%) sexual encounters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues (written, verbal, visual)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Absent/reduced genital or nongenital sensations during sexual activity in almost all or all (75%-100%) sexual encounters</td>
</tr>
</tbody>
</table>

Symptoms persisted a minimum of 6 months and not better explained by a nonsexual mental disorder or consequence of severe relationship distress or other significant stressors and not due to effects of substance/medication or other medical condition.

American Psychiatric Association, DSM 5, 2013
### Female Sexual Disorders: DSM 5

| Genito-Pelvic Pain/Penetration Disorder | 302.76 (F52.6) | Persistent or recurrent difficulties with 1 or more of the following:
1. Vaginal penetration during intercourse
2. Marked vulvovaginal or pelvic pain during intercourse or penetration attempts
3. Marked fear or anxiety about vulvovaginal or pelvic pain in anticipation of, during, or as a result of vaginal penetration
4. Marked tensing or tightening of the pelvic floor muscles during attempted vaginal penetration.

Symptoms persisted a minimum of 6 months and not better explained by a nonsexual mental disorder or consequence of severe relationship distress or other significant stressors and not due to effects of substance/medication or other medical condition

American Psychiatric Association, DSM 5, 2013
OBJECTIVES: Estimate the prevalence of self-reported sexual problems (any, desire, arousal, and orgasm), the prevalence of problems accompanied by personal distress, and describe related correlates.

NOT DETERMINED: Whether low desire with sexually related personal distress was primary or secondary to another illness; pain was not assessed.

POPULATION: 31,581 US female respondents ≥18 years of age from 50,002 households.

RESULTS*: Response rate was 63% (n=31,581 / 50,002).

# Prevalence of Sexual Problems Associated with Distress (PRESIDE)

<table>
<thead>
<tr>
<th>Age-stratified Prevalence</th>
<th>Desire 2868/28,447</th>
<th>Arousal 1556/28,461</th>
<th>Orgasm 1315/27,854</th>
<th>Any 3456/28,403</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-44</td>
<td>8.9</td>
<td>3.3</td>
<td>3.4</td>
<td>10.8</td>
</tr>
<tr>
<td>45-64</td>
<td>12.3</td>
<td>7.5</td>
<td>5.7</td>
<td>14.8</td>
</tr>
<tr>
<td>65 or older</td>
<td>7.4</td>
<td>6.0</td>
<td>5.8</td>
<td>8.9</td>
</tr>
</tbody>
</table>

Women’s International Study of Health and Sexuality (WISHeS)

- Comprehensive survey on general, menopausal, & sexual health
- Included pre- & postmenopausal women, aged 20-70
- N=2050 US women
- Self administered, mail survey
- 85% of women who agreed to participate returned the survey

What is the Incidence of HSDD Among Menopausal Women?

<table>
<thead>
<tr>
<th>Menopausal Status</th>
<th>Surgical (20-49 yrs)</th>
<th>Surgical (50-70 yrs)</th>
<th>Natural (50-70 yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>% Low desire (a)</td>
<td>% Low desire (a)</td>
<td>% Low desire (a)</td>
</tr>
<tr>
<td>Surgical (20-49 yrs)</td>
<td>36</td>
<td>33</td>
<td>29</td>
</tr>
<tr>
<td>Natural (50-70 yrs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Women with low desire classified as distressed (b)</td>
<td>72</td>
<td>44</td>
<td>33</td>
</tr>
<tr>
<td>% Total population with HSDD (a x b/100)</td>
<td>26</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

WISHES data, P&GP
A study of sexuality and health among older adults in the U.S.: National Social Life, Health, and Aging Project

- 1550 women and 1455 men ages 57-85
- Results for Women
  - HSDD: 43%
  - Difficulty with vaginal lubrication: 39%
  - Anorgasmia: 34%
  - Sex not pleasurable: 23%
  - Pain: 17%
- 38% of men and 22% of women reported having discussed with a physician since age 50

Lindau ST et al. NEJM, 2007; 357(8):762-774.
Hypoactive Sexual Desire Disorder (HSDD)

- Persistent or recurrent deficiency or absence of sexual thoughts, fantasies and/or desire for sexual activity
  - Causes marked personal distress or interpersonal difficulties
  - Not better accounted for by another primary disorder, drug/medication, or general medical condition

DSM IV-TR
Female Sexual Interest/Arousal disorder

Lack of, or significantly reduced, sexual interest/arousal as manifested by 3 of

1. Absent/reduced interest in sexual activity
2. Absent/reduced sexual/erotic thoughts or fantasies
3. No/reduced initiation of sexual activity and unreceptive to partner’s attempts to initiate
4. Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all (75%-100%) sexual encounters
5. Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues (written, verbal, visual)
6. Absent/reduced genital or nongenital sensations during sexual activity in almost all or all (75%-100%) sexual encounters

Symptoms persisted a minimum of 6 months and not better explained by a nonsexual mental disorder or consequence of severe relationship distress or other significant stressors and not due to effects of substance/medication or other medical condition

APA, DSM 5, May 2013
Components of Desire: Causal Factors of HSDD

**DRIVE:**
Biological component based on neuroendocrine mechanisms

**COGNITIVE:**
Reflects expectations, beliefs and values

**MOTIVATION:**
Willingness to engage in sexual activity

Drive: Neuro-hormonal contributions

- Sex steroids and neurotransmitters play a role in modulating sexual interest (drive) and behavior
Female sexual drive and the CNS

- Dopamine modulates sexual desire
- Norepinephrine and dopamine increase the sense of sexual excitement and the desire to continue sexual activity\(^1\)
- Neurotransmitters modulate the secretion of many hormones
- Hormones influence synthesis and storage of neurotransmitters\(^2\)

The role of androgens

- Androgens appear to be important in female sexuality
- Decline in androgens parallels increasing age in late reproductive years (30+)
- Declining levels contribute to decline in sexual desire, arousal, and orgasm

Motivation: Psychosocial Factors

- Relationship conflict
- Major life stressor(s)
- Boredom
- Discrepant desire levels between partners
- Cultural/religious prohibitions/guilt
- Subclinical depression/anxiety/body image

If Axis I condition then FSD may not be the diagnosis
• Self-Perception Theory
  – People make attributions about their own attitudes by relying on observations of external behaviors (Bem, 1965)
• Wundt's schema of sensory affect
  – Increases of stimulus intensity above threshold are felt as increasingly pleasant up to a peak value beyond which pleasantness falls off through indifference to increasing unpleasantness.
“Annie Hall”
Decreased Sexual Desire With Distress Negatively Impacts Women’s Lives

• Decreased sexual desire is associated with negative effects including:\(^1,^2\)
  – Poor self-image
  – Mood instability
  – Depression
  – Strained relationships with partners

Dyspareunia and Vulvovaginal Atrophy

- Condition in which menopausal low estrogen levels cause vaginal walls to become thin, pale, dry, fragile, and inflamed
  - Loss of vaginal elasticity and lubrication\(^1\)
- Signs and symptoms
  - Vaginal dryness, pruritis, bleeding, dyspareunia, urinary urgency, and recurrent UTIs
  - Unlike the vasomotor symptoms of menopause, urogenital symptoms may worsen over time unless treated\(^2\)
- Symptoms are NOT limited to sexually active women

UTI, urinary tract infection.

The Scope of the Problem

- VVA and/or associated symptoms affect an estimated 25% to 50% of postmenopausal women, with roughly 32 million women currently suffering from VVA\(^1,3\)
- Only 7% are currently being treated with prescription therapies

References:
What *Does* Vulvovaginal Atrophy Look Like?

Timeline of Menopause Symptoms

- 40: Final period
- 45: Vaginal discomfort
- 50: Hot flashes
- 55: Bladder symptoms
- 60: Heart disease
- 65: Osteoporosis

Impact of VVA and Perceptions of the Postmenopausal Woman

- Perceptions of Societal Views Toward Menopause
- Impact of Menopause and Vulvovaginal Atrophy on Sexual Function
Surveys of Postmenopausal Women

- Since 2008, 6 surveys on Women’s Views of Impact of Menopause/VVA on Sexual Life
  - REVEAL: Revealing Vaginal Effects At MidLife
  - VIVA: Vaginal Health: Insights, Views, and Attitudes
  - CLOSER: Clarifying Vaginal Atrophy’s Impact On SEx and Relationships
  - REVIVE: REAL WOMEN’S VIEW OF TREATMENT OPTIONS FOR MENOPAUSAL VULVAR/VAGINAL CHANGES
  - Women’s Voices in the Menopause
  - Healthy Women

- Consistent findings of Negative Impact of VVA on Sexual Health

- Barriers to Treatment

www.revealsurvey.com, Wyeth
Nappi RE, Kokot-Kerepa M. Climacteric 2012;15(1)36-44.
Simon et al. Menopause 2013 June 3, Epub ahead of print
Nappi RE, Kingsberg S, Maamari R, Simon J.

Krychman M and Berman L, Healthy Women Survey www.issmsmsna2012.org
• Representative sample of 1006 women who were naturally postmenopausal and not currently on hormone therapy (hysterectomized women were excluded)
  • A subgroup of postmenopausal women who experienced dyspareunia or pain during sexual intercourse was further evaluated (n = 255)
• Aged 45-65
• Market research surveys, which were completed in December 2008
Women’s perception of importance of sexual health

My sexual health is important to me

FQ31. I am going to read you a list of statements now and I’d like you to tell me if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with each.

Note: 3% of respondents chose the response option “Don’t Know (DK)/Not Applicable (NA)/Refused.”
## Women’s perceptions: Societal constraints

<table>
<thead>
<tr>
<th>Total Agree (Strongly + Somewhat Agree)</th>
<th>Total, %</th>
<th>60-65 years old, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Society constrains the sexual expression of women my age more so than men my age</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Society is more accepting of discussing men’s physical sexual problems than women’s physical sexual problems</td>
<td>73</td>
<td>74</td>
</tr>
<tr>
<td>While there are medicines available for men’s physical sexual problems, the same do not exist for women’s physical sexual problems</td>
<td>71</td>
<td>67</td>
</tr>
<tr>
<td>Society would prefer to believe that women my age do not have sex</td>
<td>53</td>
<td>60</td>
</tr>
</tbody>
</table>
Suffering in Silence

• Half of the postmenopausal women surveyed (51%) agreed that they have *learned to live with* the vulvar and vaginal symptoms of menopause, such as dryness, as *a normal part of getting older*

• One out of four postmenopausal women surveyed (25%) *experience dyspareunia* at least sometimes
  – Even though it is painful, approximately 72% engage in sex at least once a month, and 34% engage in sex at least once weekly

Less than half of the women experiencing dyspareunia (44%) have initiated a conversation with their health care professionals about dyspareunia
Vaginal Health: Insights, Views & Attitudes (VIVA)

- 3520 women aged 55-65
- Online survey
- 7 countries
  - US, Great Britain, Canada, Sweden, Denmark, Finland, and Norway
  - 500 participants in each country

Nappi RE, Kokot-Kerepa M. Climacteric 2012;15(1)36-44.
Impact on quality of life (VIVA)

- When asked about how a woman might feel about herself when having vaginal discomfort
  - 57% “less sexual”
- When asked how do they think vaginal discomfort affects women’s lives in general
  - 65% negative consequences on sex life
  - 40% negative consequences on marriage/relationship
  - 36% lowers quality of life
  - 31% makes them feel old
  - 26% negative impact on self-esteem
  - 13% negative impact on social life

Nappi RE, Kokot-Kerepa M. Climateric 2012;15(1)36-44.
• 3046 Postmenopausal women 45-75 with symptoms of VVA

• Characterize women’s knowledge of VVA as a chronic medical condition of menopause

• Understand the impact of VVA on women's lives

• Examine respondent's view of the benefits and limitations of currently available agents
All VVA Symptoms Are Seen as Bothersome

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Bothersome (%)</th>
<th>Not Bothersome (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain w/sex</td>
<td>52%</td>
<td>6%</td>
</tr>
<tr>
<td>Bleeding w/sex</td>
<td>48%</td>
<td>15%</td>
</tr>
<tr>
<td>Pain w/exercise</td>
<td>37%</td>
<td>17%</td>
</tr>
<tr>
<td>Irritation</td>
<td>36%</td>
<td>8%</td>
</tr>
<tr>
<td>Dryness</td>
<td>33%</td>
<td>13%</td>
</tr>
<tr>
<td>Tenderness</td>
<td>32%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Respondents with symptoms of dyspareunia report the greatest degree of "Bother"
VVA Impacts a Woman’s Sex Life, Especially Those with a Partner

Enjoyment of sex
Sexual spontaneity
Ability to be intimate
Relationship w/ partner
Sleeping
Temperament
Enjoyment of life
Seeking new relationship
Traveling
Athletic activities
Everyday activities
Social activities
Ability to work

No partner
Total
Have partner
Women Don’t Realize That VVA Symptoms Are Caused by Menopause

- When women in the survey were asked, in an unaided question, to name the cause of their VVA symptoms:
  - Only 24% of the women attributed their symptoms directly to Menopause

- Of the 76% citing another cause for their VVA symptoms, 33% responded they “Don’t Know”
• Women reported only 19% of HCPs addressed their sexual life
  • Only 13% raised the issue of VVA symptoms specifically during their checkup
    – 50% of patients think VVA is a natural—and perhaps unavoidable—consequence of aging
    – Others do not associate VVA with menopause
    – 40% of these women expected that their HCP would initiate discussion related to menopausal symptoms
Treatment for Dyspareunia/Vulvovaginal Atrophy
The Importance of Physical Examination in Identifying Vulvovaginal Atrophy

- Menopausal women should be assessed for vulvovaginal atrophy, even if they have not mentioned symptoms\(^1\)
- Contraction of the introitus in estrogen-deficient women typically occurs slowly over time\(^2\)
  - It often goes unnoticed at the annual visit
- Laboratory testing is not required in women with obvious physical signs of atrophy\(^3\)

# Nonhormonal Therapeutic Options

<table>
<thead>
<tr>
<th>Lubricant – As needed</th>
<th>Moisturizer – Long term</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water-based</strong></td>
<td><strong>Silicone-based</strong></td>
</tr>
<tr>
<td>Slippery Stuff</td>
<td>ID Millennium</td>
</tr>
<tr>
<td>Astroglide</td>
<td>Pjur</td>
</tr>
<tr>
<td>K-Y Jelly</td>
<td>Pink</td>
</tr>
<tr>
<td>Summer’s Eve</td>
<td></td>
</tr>
<tr>
<td>FemGlide</td>
<td>Oil-based</td>
</tr>
<tr>
<td>Pre-Seed</td>
<td>Elegance</td>
</tr>
<tr>
<td></td>
<td>Replens</td>
</tr>
<tr>
<td></td>
<td>Moist Again</td>
</tr>
<tr>
<td></td>
<td>Vagisil Feminine Moisturizer</td>
</tr>
<tr>
<td></td>
<td>Feminease</td>
</tr>
<tr>
<td></td>
<td>K-Y Silk-E</td>
</tr>
<tr>
<td></td>
<td>K-Y Liquibeads</td>
</tr>
</tbody>
</table>

Lifestyle modifications: increased coital activity and smoking cessation

VVA: Estrogen Treatment Effects

- Lowers vaginal pH, increases subepithelial capillary growth, and thickens epithelium
- Raises level of vaginal secretions
- Increases VMI reflecting higher percentage of superficial cells relative to parabasal cells
- Alleviates subjective vaginal symptoms
  - Dryness, soreness, irritation, pruritus, dyspareunia
- Progestational endometrial protection not usually necessary\textsuperscript{1,2}

Archer DF. Menopause. 2010;17:194-203
## Vaginal Estrogens Available for Postmenopausal Use in the US\(^1\)\(^-\)\(^3\)

<table>
<thead>
<tr>
<th>Composition</th>
<th>Name</th>
<th>Dosing</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vaginal cream</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estradiol</td>
<td>Estrace®</td>
<td>Initial 2-4 g/d for 1-2 wk Maintenance: 1 g/d (0.1 \text{ mg active ingredient/g}) 0.5-1.0 g (0.625 \text{ mg active ingredient/g}) 3x weekly</td>
<td>Preventin® is also indicated for dyspareunia</td>
</tr>
<tr>
<td>Conjugated estrogens</td>
<td>Premarin®</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vaginal ring</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estradiol</td>
<td>Estring®</td>
<td>Device containing 2 mg releases 7.5 μg/d for 90 d</td>
<td></td>
</tr>
<tr>
<td>Estradiol acetate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vaginal tablet</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estradiol hemihydrate</td>
<td>Vagifem®</td>
<td>Initial: 1 tablet/d for 2 wk Maintenance: 1 tablet twice/wk (tablet 10.3 μg of estradiol hemihydrate equivalent to 10 μg of estradiol)</td>
<td>The 10 mcg dose is the only available formulation of the drug available in the US</td>
</tr>
</tbody>
</table>

Ospemifene and dyspareunia associated with VVA

- Ospemifene, an oral triphenylethylene, originally developed for osteoporosis
- Approved by FDA February 2013 for treatment of moderate to severe dyspareunia, a symptom of VVA
- Multicenter phase 3 randomized, double-blind 12-week efficacy and safety study
- 605 women 40-80 yo (mean age 58 yo) with self-reported most bothersome symptom of dyspareunia
  - Ospemifene 60 mg po/d (n = 303) vs placebo (n = 303)
- Co-primary endpoints
  - pH, parabasal, superficial cells
  - Change in severity using VVA symptom questionnaire of MBS of dyspareunia

Emerging Investigational Therapies

• Vaginal dehydroepiandrosterone (DHEA)
• Selective Estrogen Receptor Modulators (SERMs)
  – Lasofoxifene
  – Bazedoxifene


- 75 postmenopausal women symptomatic for urogenital atrophy and sexual dysfunction were randomly divided into 2 study groups and 1 control group.

- Study group 1 received local estrogen cream; study group 2 received local estrogen and testosterone cream; the control group received KY gel for 12 weeks.

- After 12 weeks of therapy, significant improvement in all the four study parameters, which correlated well with the improvement in symptoms of urogenital atrophy and sexual dysfunction in both the study groups as compared with the control group.

- Improvement in sexuality score was greatest with combined estrogen-androgen therapy.
“I was on hormone replacement for two years before I realized that what I really needed was Steve replacement”
Treating Hypoactive Sexual Desire

- Biopsychosocial Treatment
- Treat Component(s) of Desire that is/are compromised
  - Drive
  - Beliefs
  - Motivation
FDA Approved Pharmacologic Options for Hypoactive Sexual Desire Disorder (HSDD)
Testosterone supplementation

- Testosterone enanthate injections
- Subcutaneous pellets
- Testosterone gels
- Testosterone transdermal patches
- Oral micronized testosterone
- Sublingual testosterone
- Oral methytestosterone (MT)
Flibanserin

- 5HT1-agonist/ 2A Antagonist
- Demonstrates promise as first nonhormonal treatment of HSDD in pre and postmenopausal women
- >11000 Subjects
- Studies Stage III clinical trials completed
- SE: mild nausea, dizziness, fatigue, somnolence, increased bleeding if on NSAID or ASA
• Serotonin may act as a sexual satiety signal.
• SSRIs inhibit desire, arousal, and orgasm.
• Flibanserin is a 5-HT$_{1A}$ receptor agonist which could have pro-sexual effects.
• Stimulating 5-HT$_{2A}$ receptor has been associated with decreased sexual behavior (male rodents).
• Flibanserin is a 5-HT$_{2A}$ antagonist which inhibits sexual inhibition

Bremelanotide

• A melanocortin agonist; a synthetic peptide analog of the naturally occurring hormone alpha-MSH (melanocyte-stimulating hormone).
• subcutaneous injection
• In completed Phase 2B clinical trial, bremelanotide 1.25 mg and 1.75 mg doses significantly increased sexual arousal, sexual desire and the number of sexually satisfying events, and decreased associated distress in premenopausal women with FSD. Efficacy was seen in both women with hypoactive sexual desire disorder (HSDD) and combined HSDD/female sexual arousal disorder (FSAD).
Lybrido/Lybridos

• Combination therapy and personalized medicine designed to target specific causes of HSDD
• Lybrido: Sublingual testosterone surrounded by sildenafil for women with HSDD and low arousal
• Lybridos: Sublingual testosterone surrounded by 5 HT1a receptor agonist (Buspirone) for women with HSDD and sexual inhibition
Sexual Problems Do Not Occur in a Vacuum
Psychotherapy/Sex Therapy

- Relationship conflict
- Major life stressor(s)
- Boredom
- Discrepant desire levels between partners
- Cultural/religious prohibitions/guilt
- Subclinical depression/anxiety/body image

If Axis I condition then FSD may not be the diagnosis
Sex Therapy: HSDD

- Refocus patient/couple on motivation component of desire
- Alter expectations that response is linear
  - Sexual neutrality/responsive desire
- Cognitive and behavioral restructure of perceptions of partner and lovemaking
- Mindfulness-based treatments show promise
Heterosexual Dilemma

Sex for men is often a stress reliever

Sex for women typically requires stress relief
Office Based Counseling: Follow PLISSIT Model

**Permission to talk about sexual issues, reassurance and empathy**

**Limited Information**
- e.g., education about genital anatomy or educational resources

**Specific Suggestions**
- e.g., create mystery, go out on a date, altering position

**Intensive Therapy**
- e.g., referral for psychotherapy/sex therapy

Annon, 1976
I said you had acute angina.
Questions?

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