Vulvodynia: A Common and Under-Recognized Pain Disorder in Women and Female Adolescents
Disclosures

I have no disclosures financial or otherwise

(other than I am a Doctor of Physical Therapy, NOT an MD)
Learning Objectives

At the end of this session, learners will be able to

- Recognize vulvodynia as a prevalent, misdiagnosed, and under-researched chronic pain disorder affecting millions of females
- Define vulvodynia and its subtypes
- Appreciate how to differentially diagnosis vulvodynia
- Perform a comprehensive exam for diagnose
- Implement an individualized, multidisciplinary treatment regimen
Section 1: Historical Perspective

- Early Descriptions - 1880 Onward
- Early Definitions - 2004
- Consensus Definition - 2015
Historical Perspective
Early Descriptions of Vulvodynia

1880
“...excessive sensibility of the nerves supplying the mucous
membrane of some portion of the vulva, sometimes...confined
to the vestibule...other times to one labium minus.”

1888
“...characterized by the supersensitiveness of the vulva...No
redness or other external manifestation ...visible...When the
examining finger comes in contact with the hyperaesthetic
part, the patient complains of pain, which is sometimes so
great as to cause her to cry out. Sexual intercourse is equally
painful and becomes, in aggravated cases, impossible.”

Thomas 1880, Skene 1888
**Historical Perspective**

*Early Descriptions of Vulvodynia*

1928

“...exquisitely sensitive deep-red spots in the mucosa of the hymenal ring as a fruitful source of dyspareunia.”

1929-1974

No mention of the condition in medical texts for five decades

1975

Defined as *burning vulva syndrome* by the International Society for the Study of Vulvovaginal Disease (ISSVD) World Congress

*Kelly 1928, McKay 1984, Moyal-Barracco 2004, Haefner 2007*
Historical Perspective

ISSVD Definition 2004

Vulvodynia

- Vulvar discomfort, most often described as burning pain, occurring in the absence of relevant visible findings or a specific, clinically identifiable, neurologic disorder
Historical Perspective

**ISSVD Definition 2004**

Descriptors

- **Location**
  - Generalized (e.g., entire perineum)
  - Localized (e.g., vestibulodynia, clitorodynia)
  - Mixed

- **Symptom presentation**
  - Provoked (e.g., insertional, contact; sexual or nonsexual)
  - Unprovoked (e.g., pain present with no provocation)
  - Mixed
Historical Perspective

**ISSVD Definition 2004**

Vulvar pain related to a specific disorder ≠ vulvodynia

1) **Infectious** (e.g., recurrent candidiasis, herpes)
2) **Inflammatory** (e.g., lichen sclerosus, lichen planus, immunobullous disorders)
3) **Neoplastic** (e.g., Paget’s disease, squamous cell carcinoma)
4) **Neurologic** (e.g., post-herpetic neuralgia, nerve compression or injury, neuroma)
Historical Perspective

ISSVD Definition 2004

Idiopathic pain disorder

Diagnosis of exclusion
Historical Perspective
Consensus Terminology and Classification of Vulvodynia, 2015

Consensus meeting
- Discussants ISSVD, ISSWSH, and IPPS; observers ACOG and NVA

Recognizing changes in literature, practice since 2003
- Tricyclics antidepressants—neuropathic etiology
- Nerve excision for removal—neuroma, pudendal compression
- Descriptors for onset—primary vs secondary
- Variations in symptoms—intermittent vs persistent pattern

Bornstein 2016
Vulvodynia

- Vulvar pain of at least 3 months duration, without clear identifiable cause, which may have potential associated factors
Historical Perspective
Consensus Terminology and Classification of Vulvodynia, 2015

Descriptors:
- Location
  - Generalized (e.g., entire perineum)
  - Localized (e.g., vestibulodynia, clitorodynia)
  - Mixed
- Symptom presentation
  - Provoked (e.g., insertional, contact; sexual or nonsexual)
  - **Spontaneous** (e.g., pain present with no provocation)
  - Mixed
Historical Perspective
Consensus Terminology and Classification of Vulvodynia, 2015

Additions
- Temporal pattern of symptoms
  - Persistent
  - Constant
  - Immediate
  - Delayed
  - Intermittent
Historical Perspective
Consensus Terminology and Classification of Vulvodynia, 2015

- Onset of symptoms
  - Primary
    - Pain occurring with first vaginal penetration, sexual or nonsexual
    - Often younger onset
    - Often have higher pain sensitivity, more genetic influence, more evidence of inflammation, lower successful treatment outcomes, and different neural activation patterns and structural findings

Pukall 2016, Bornstein 2016
Historical Perspective
Consensus Terminology and Classification of Vulvodynia, 2015

- Onset of symptoms
  - Secondary
    - Pain occurring with vaginal penetration after some period of pain free vaginal penetration and/or coital intercourse
    - Often unknown origin
    - May be progressive or sudden

Pukall 2016, Bornstein 2016
Vulvar pain related to a specific disorder ≠ vulvodynia

- Infectious (e.g., recurrent candidiasis, herpes)
- Inflammatory (e.g., lichen sclerosus, lichen planus, immunobullous disorders)
- Neoplastic (e.g., Paget’s disease, squamous cell carcinoma)
- Neurologic (e.g., post-herpetic neuralgia, nerve compression or injury, neuroma)
- Trauma (e.g., female genital cutting, obstetrical)
- Iatrogenic (e.g., post-operative, chemotherapy, radiation)
- Hormonal deficiencies (e.g., genito-urinary syndrome of menopause, lactational amenorrhea)
## Consensus Terminology 2015

### Potential Factors Associated with Vulvodynia

<table>
<thead>
<tr>
<th>Potential Factor*</th>
<th>Level of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-morbidities and other pain syndromes (e.g., painful bladder syndrome, fibromyalgia, irritable bowel syndrome, temporomandibular disorder)</td>
<td>2a</td>
</tr>
<tr>
<td>Genetics</td>
<td>2b</td>
</tr>
<tr>
<td>Hormonal factors (e.g., pharmacologically induced)</td>
<td>2b</td>
</tr>
<tr>
<td>Inflammation</td>
<td>2b</td>
</tr>
<tr>
<td>Musculoskeletal (e.g. pelvic muscle overactivity, myofascial, biomechanical)</td>
<td>2b</td>
</tr>
<tr>
<td>Neurologic mechanisms: Central (spine, brain) and peripheral</td>
<td>2b</td>
</tr>
<tr>
<td>Neuroproliferation</td>
<td>2b</td>
</tr>
<tr>
<td>Psychosocial factors (e.g., mood, interpersonal, coping, role, sexual function)</td>
<td>2b</td>
</tr>
<tr>
<td>Structural defects (e.g., perineal descent)</td>
<td>2b</td>
</tr>
</tbody>
</table>

*The factors are ranked by alphabetical order.*
## Other Terms - Confusion is Common

<table>
<thead>
<tr>
<th>Generalized Vulvodynia</th>
<th>Provoked Vestibulodynia (PVD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperaesthesia of the vulva</td>
<td>Vulvar Vestibulitis Syndrome</td>
</tr>
<tr>
<td>Dysesthetic Vulvodynia</td>
<td>Vestibular Adenitis</td>
</tr>
<tr>
<td>Vulvar Dysesthesia</td>
<td>Minor Vestibular Gland Syndrome</td>
</tr>
<tr>
<td>Essential Vulvodynia</td>
<td>Localized Provoked Vulvodynia</td>
</tr>
</tbody>
</table>
Section 2:
Magnitude of the Problem

PREVALENCE
INCIDENCE
REMISSION
MISDIAGNOSIS
ECONOMIC IMPACT
QUALITY OF LIFE
Prevalence

- Four population-based studies suggest prevalence of 3-7% in reproductive-aged women
- Approximately 7% of US women with symptoms consistent with vulvodynia by age 40, differing by ethnicity
- Documented in preadolescent girls, ages 7-11
- Of 1,425 adolescent girls aged 12-19, 20% of 251 sexually active young women reported penetrative pain consistent with symptoms of PVD
- Severe pain at first tampon insertion suggests a fourfold risk of reporting chronic dyspareunia

Harlow 2003, Arnold 2007, Reed 2004, Reed 2006; Harlow 2014; Reed 2008; Landry 2009
Incidence

- Annual incidence is 3.1%
- More recently, the incidence was 4.2 cases/100 woman-years and differed by age, ethnicity and marital status

Remission

- Range of 26 to 38% depending on duration of pain
- Ranged of 17-25%, with a rate of remission incidence of 22% over two years

Reed 2012, Reed 2014; Nguyen 2015, Reed 2008, Reed 2012
Affected Populations

- All ages affected
- Incidence of symptom onset highest ages 18 to 25
- All ethnicities affected
  - Hispanic women have an increased risk with different subtypes

Significant Economic Impact

- US direct/indirect cost is $31-$72 billion

Magnitude of the Problem
Affected Populations, Economic Impact, and Misdiagnosis

Misdiagnosis

- Common
- First NIH-funded population-based study, 2003
  - 60% of women consulted at least three MDs seeking diagnosis
  - 40% remained undiagnosed after three medical consultations
- Population-based study, 2012
  - Only 1.4% of women seeking medical care were accurately diagnosed

Hartlow 2003, Reed 2012
Magnitude of the Problem

Quality of Life

Confusion About Onset of Pain

Delay in Treatment for Serious Health Condition

Fruitless Search for Causal Attributions

Deleterious Consequences on Physical, Emotional and Sexual Health and Relationships

Numerous Barriers to Seeking Medical Care and Help

Self-Management Attempts with Various Strategies Provide Little Relief

Donaldson 2010
Section 3: Anatomy and Neurobiology of the Urogenital Tract
Anatomy and Neurobiology

**Vulva and Vulvar Vestibule**

**Vulva**

Image courtesy of Dr. Libby Edwards

**Vestibule**

Reprinted with permission from the John O. L. DeLancey, MD collection


Farage 2006
Anatomy and Neurobiology

*Innervation of the Vulva*

Farage 2012

Images courtesy of Drs. Denniz Zolnoun and Georgine Lamvu.
Understanding of the pathophysiological mechanisms of vulvodynia is in its infancy.

fMRI research has suggested abnormal pathophysiologic transmission of pain in women with vulvodynia as compared to controls.

It is likely that different mechanisms, influenced by several predisposing, triggering and maintaining factors, as well as genetic and environmental factors, will be identified and studied.
Section 6: Differential Diagnosis

DISORDERS KNOWN TO CAUSE VULVAR PAIN
(RULE-OUT DIAGNOSES)

VS.

VULVODYNIA
Differential Diagnosis

Possible Risk Factors for Vulvodynia

- Vulvovaginal infection
- Oral contraceptive use
- Genetic variability
- Dysmenorrhea
  - Chronic pain in other areas of the body
- Autoimmune disease
  - Altered immuno-inflammatory response
- Allergies
  - Vulvar dermatologic disorders
- Early menarche
- Early age of first intercourse
  - Pain with first intercourse
  - Pain with/after sex
- Nulliparity
- Childhood enuresis
  - Nocturnal urination
  - Urinary burning
  - Pain with wiping
- Pain with bike riding
- Difficulty or severe pain with first tampon use
- Adverse life experiences
Differential Diagnosis

Rule-Out Diagnoses

Chronic Vulvar Pain

Visible and/or neurologic findings

- Infectious, inflammatory, neoplastic, neurologic, traumatic, iatrogenic, hormonal deficiencies (treat accordingly)

Pain is localized to one part of the vulva (vestibule, clitoris, labia, etc.)

- No visible findings except possible erythema. Hyperalgesia (painful stimuli induce sensitivity). Allodynia (non-painful stimuli induces pain). Pain can be: primary or secondary; spontaneous or provoked; intermittent, persistent, constant, immediate, delayed

- Pain throughout the entire vulva though some parts may be more painful than others. Provocation typically exacerbates symptoms. Pain may be described as burning, stabbing, stinging, etc.

- Generalized Vulvodynia

- Clitorodynia - pain confined to the clitoris. Can be described as burning or stabbing pain or less commonly persistent arousal (AKA persistent genital arousal disorder - PGAD).

- Vestibulodynia (AKA vulvar vestibulitis (VVS) or provoked vestibulodynia (PVD). Primary if pain began at first vaginal penetration attempt. Secondary if pain began after a period of pain-free vaginal penetration.
Rule-Out Diagnoses

Infectious Disorders

Vulvovaginal Candidiasis

Courtesy of CDC Public Health Image Library

Courtesy of Dr. Andrew Goldstein

Ledger 2007, Nyirjesy 2008
Rule-Out Diagnoses

Infectious Disorders

Trichomoniasis

Genital Herpes

Courtesy of CDC Public Health Image Library

Courtesy of Dr. Libby Edwards

Rule-Out Diagnoses

*Inflammatory Disorders*

Lichen Sclerosus

*Image courtesy of Dr. Libby Edwards*

*Image courtesy of Dr. Andrew Goldstein*
Rule-Out Diagnoses

*Inflammatory Disorders*

**Lichen Planus**

*Image courtesy of Dr. Andrew Goldstein*

*Image courtesy of Dr. Libby Edwards*

Lewis 2013, Moyal- Barracco 2014, Burrows 2008
Rule-Out Diagnoses
*Inflammatory Disorders*

Contact Dermatitis

Lichen Simplex Chronicus

*Courtesy of Dr. Libby Edwards*

*Courtesy of Dr. Andrew Goldstein*

Burrows 2008, Margesson 2004; Moyal-Barracco 2014
Rule-Out Diagnoses

Neoplastic Disorders

Squamous Cell Carcinoma

Images courtesy of Dr. Andrew Goldstein
Pudendal neuralgia due to nerve entrapment

- Diagnosed using Nantes Criteria
  1. Pain in the anatomical territory of the pudendal nerve
  2. Worsened by sitting
  3. The patient is not woken at night by pain
  4. No objective sensory loss on clinical examination
  5. Positive anesthetic pudendal nerve block

- Exclusion criteria: purely coccygeal, gluteal, or hypogastric pain; exclusively paroxysmal pain or pruritus; presence of imaging abnormalities able to explain the symptoms
Rule-Out Diagnoses

**Neurologic Disorders**

**Pudendal, genitofemoral and/or ilioinguinal nerve injury**
- Caused by varying insults including childbirth, sports injuries, trauma, incontinence, and/or POP surgery

**Peripheral neuropathy/neuralgia**
- Neuropathy induced by diabetes, chemotherapy, multiple sclerosis
- Herpes zoster virus can lead to post-herpetic neuralgia masking as vulvodynia
- Pharmacologic toxicity, e.g., nitrofurantoin

Rule-Out Diagnoses
Neurologic and Other Disorders

Sacral Meningeal (Tarlov) Cysts

- Referred pain—ruptured disc or scarring around sacral nerve roots after disc surgery, pelvic floor muscle dysfunction, and/or orthopedic condition, e.g., labral hip tear (image below)

Image courtesy of Wikimedia Commons

Image courtesy of Deborah Coady

Hiers 2010, Van de Klef 1991
Rule-out Diagnoses

Trauma

Trauma to the vulva

- Female Genital Cutting
- Perineal trauma
- Straddle injuries
  - Bicycles
  - Falls from climbing, sports
- Injuries to pelvis
- Motor vehicle accidents
Rule-out Diagnoses

Hormonal Deficiencies

Courtesy of Dr. Andrew Goldstein
Rule-out Diagnoses

Iatrogenic

Images Courtesy of Dr. Andrew Goldstein
Vulvodynia Assessment

Chronic Vulvar Pain

Visible and/or neurologic findings

Infectious, inflammatory, neoplastic, neurologic, trauma, iatrogenic, hormonal deficiencies (treat accordingly)

Pain is localized to one part of the vulva (vestibule, clitoris, labia, etc.)

No visible findings except possible erythema. Hyperalgesia. Allodynia. Pain can be: primary or secondary; spontaneous or provoked; intermittent, persistent, constant, immediate, delayed

Pain throughout the entire vulva though some parts may be more painful than others. Provocation typically exacerbates symptoms. Pain may be described as burning, stabbing, stinging, etc.

Clitorodynia - pain confined to the clitoris. Can be described as burning or stabbing pain or less commonly persistent arousal (aka persistent genital arousal disorder - PGAD).

Vestibulodynia (aka vulvar vestibulitis or provoked vestibulodynia (PVD)). Primary if pain began at first vaginal penetration attempt. Secondary if pain began after a period of pain-free vaginal penetration.

Generalized Vulvodynia*

Haefner 2007, Bornstein 2016
Vulvodynia Assessment

Screening Questions

Four Questions Highly Predictive of Clinical Diagnosis

1) Experience genital “pain”?  
2) Experience genital burning > 3 months?  
3) 10 or more episodes of pain on contact with tampon insertion, sexual intercourse or gynecological exam?  
4) Does pain on contact limit/prevent intercourse?

Harlow 2009
Vulvodynia Assessment

Components of the Examination

After infectious, inflammatory, neoplastic, neurologic and other disorder identified and treated, assessment for vulvodynia uses five-step exam

Step 1: Visual examination
Step 2: Cotton-swab exam of vulva, vulvar vestibule
Step 3: Neurosensory examination
Step 4: Pelvic floor muscle examination
Step 5: Evaluate pain comorbidity & contributing factors
Vulvodynia Assessment

Subjective Findings: “Where does it hurt?”

**Generalized Vulvodynia**

“It hurts all over, all of the time.”

Less prevalent (20%) subtype

**Provoked Vestibulodynia**

“It hurts at the opening only with touch or pressure.”

More prevalent (80%) subtype
Vulvodynia Assessment

Step 1: Visual Examination

Patient #1
Severe Erythema

Patient #2
Moderate Erythema

Patient #3
Minimal Erythema
Severe Pain

Pain severity and subsurface inflammation do not consistently correlate with the amount of erythema observed (Bergeron 2001, Farage 2009)

Vulvodynia Assessment

Step 2: Cotton-Swab Examination of the Vulva

Using cotton swab
- test for allodynia, hypo- and hyperalgesia

Apply gentle pressure
- 1-2 inner thigh
- 3-5 labia majora
- 6-8 interlabial sulcus
- 9 clitoris, clitoral hood
- 10 perineum
- 11 sites within vestibule

For each site, ask patient to
- Rate pain severity (VAS score)
- Describe pain character (burning, raw, etc.)
Vulvodynia Assessment

Step 2: Cotton-Swab Examination of Vulvar Vestibule

Image courtesy of Dr. Denniz Zolnoun
Vulvodynia Assessment

Step 3: Neurosensory Examination

- Instruct patient on ‘cotton’ vs. ‘pin-prick’ sensation
- Touch outer thigh above knee with cotton portion, then by wood end
- Using cotton swab, gently stroke upwards each sensory dermatomes
- Note sensation (normal, allodynia, hypo-sensitive), pain score, pain character (sharp, burning, shooting), and right to left differences
- Break cotton swab in half; repeat exam with sharp wood portion of swab using punctate pressure (light pressure, 1 sec) each dermatome
- Note sensation as before

From ongoing NIH Grant 5K23HD053631
Vulvodynia Assessment

Step 4: Pelvic Floor Muscle Examination

Images courtesy of Dr. Denniz Zolnoun
Vulvodynia Assessment

Step 5 – Evaluate Pain Comorbidity & Contributing Factors

**Emotional distress and sexual impairment**
- Often consequence of living with poorly understood, under-recognized, genital pain disorder

**Comorbid pain syndromes**
- Interstitial cystitis/painful bladder syndrome
- Irritable bowel syndrome, endometriosis
- Orofacial Pain (TMJ), chronic headache (migraine, tension type)
- Fibromyalgia/chronic fatigue syndrome

See Comorbidity References in Section 6.
Vulvodynia Assessment

Step 5 – Evaluate Pain Comorbidity & Contributing Factors

Assessment of comorbid disorders

- Important in selecting therapies that target all factors contributing to current pain state
- Pain -- location(s), intensity & interference
- Emotional functioning
- Sleep interference -- both falling asleep & staying asleep
- Physical functioning
- Sexual functioning

See Comorbidity References in Section 6.
Vulvodynia Assessment
Neuroproliferative Vestibulodynia

Vestibulodynia with tenderness throughout entire vestibule

Neuroproliferation

Acquired Neuroproliferative Vestibulodynia
HX: Allergic reaction, chronic yeast infection, polymorphisms in IL1RA, MBL, IL1B, associated with urticaria, hives, sensitive skin

PE: Tenderness of the entire vestibule from Hart's line to the hymen, often with erythema that worsens after touch with cotton swab. Umbilical hypersensitivity in approximately 60% of these women.

LABS: increased density of c-afferent nociceptors if using S-100 of PGP 9.5

Congenital Neuroproliferative Vestibulodynia
HX: Pain since first tampon use, speculum insertion, and coitarche. No pain free sex. Late coitarche > 25 years old.

PE: Tenderness of the entire vestibule from Hart's line to the hymen, often with erythema that worsens after touch with cotton swab. Umbilical hypersensitivity in approximately 60% of these women.

LABS: increased density of c-afferent nociceptors if using S-100 of PGP 9.5

King 2014
INFLAMMATORY VESTIBULODYNIA

HX: Chronic infections, allergic reactions, copious yellowish discharge.

PE: Erythema (redness), leukorrhea (thick discharge), induration (hardening of soft tissue), vaginal mucosal tenderness, cervicitis/ectropion (inflammation of the outer cervix)

CAUSES: Desquamative inflammatory vaginitis, chronic candidiasis, latex allergy/semen allergy

DESQUAMATIVE INFLAMMATORY VAGINITIS

HX: Copious yellow vaginal discharge that ruins underwear or requires a panty liner, vulvar pruritus where discharge dries

PE: Copious leukorrhea, vaginal mucosa erythema, cervicitis, cervical ectropion

CAUSES: Unknown, but current hypothesis is either infection of unknown pathogen, erosive lichen planus, vulvovaginal atrophy, or cervical ectropion.

RECURRENT CANDIDIASIS

PE: Erythema, induration, thin fissures, peri-anal erythema. Discharge is often thin and yellow, not thick and white (cottage cheese-like).

LABS: Hyphae and increased WBCs on wet mount. Positive cultures

CAUSES: Diet high in simple sugars, antibiotics, OCPs

Vulvodynia Assessment
Neuroproliferative Vestibulodynia

Vestibulodynia with tenderness throughout entire vestibule
Vulvodynia Assessment

**Hormonally Associated Vestibulodynia**

Vestibulodynia with tenderness throughout entire vestibule

**HORMONALLY ASSOCIATED VESTIBULODYNIA**

PE: Gland ostia are erythematous, mucosal pallor with overlying erythema, decreased size of labia minora and clitoris

LABS: High SHBG, low free testosterone, low estradiol

CAUSES: Hormonal contraceptives, spironolactone, Tamoxifen, aromatase inhibitors, oophorectomy, amenorrhea, lactation
Vestibulodynia: A Diagnostic Algorithm

Pelvic Floor Muscle Dysfunction and Pudendal Neuralgia

**VESTIBULODYNIA**

- Tenderness only in the posterior vestibule

**OVERACTIVE PELVIC FLOOR MUSCLE DYSFUNCTION**

HX: Urinary symptoms (frequency, sensation of incomplete emptying, hesitancy) if it involves coccygeus muscle. Constipation, rectal fissures, hemorrhoids if it involves puborectalis. Associated with anxiety, low back pain, scoliosis, hip pain, "holding urine," excessive core strengthening exercises.

PE: Pain at 4, 8 o'clock if hypertonus of pubococcygeus muscle. Pain at 6 o'clock if hypertonus of puborectalis muscle.

**PUDENDAL NEURALGIA**

HX: Often unilateral pain or significantly worse on one side. Pain can extend to the clitoris, labia, perineum, or anus and the inner thigh. History of coccyx trauma, history of hip pain or labral tear. Pain is usually better with lying prone or standing, worse with sitting. Pain improves temporarily with pudendal nerve block.

PE: The pudendal nerve is tender when palpated at ischial spine on vaginal exam. The obturator internus muscle is usually very tender, unilateral or significantly greater on one side.

King 2014
Section 7: Individualized Multidisciplinary Treatment
Individualized Multidisciplinary Treatment

General Principles

Scientific level of evidence

- Poor with very few RCT for most treatments

Individualized, Multidisciplinary Regimen

- Treatment selected after identifying vulvodynia subtype, contributing factors
- Results include decreased pain, improved sexual function, increased patient knowledge, gain of tools/skills, improved mood and psychological well-being, gain of validation and support, and empowerment

See Andrews 2011 for review; Jodoin 2011, Spoelstra 2011, Stockdale 201; Sadownik 2012, Brotto 2015
Individualized Multidisciplinary Treatment

General Principles

Treatment outcomes vary

- Likely due to heterogeneity of underlying etiology
- Currently little knowledge to predict treatment outcome
- Successful treatment likely with fewer concomitant pain disorders
- Lower response in women with primary vs secondary PVD
- Can take months to identify treatment that is helpful, but majority of women improve when treated for variable periods
- Remission rates differ, underscoring heterogeneity
- Remission may occur without treatment

See Andrews 2011 for an evidence-based review; Heddini 2012; Ventolini 2009; Davis 2013, Nguyen 2015
Individualized Multidisciplinary Treatment

Components of the Provider/Patient Relationship

Believe the patient

- Clearly define realistic objectives and adapt management style
- Ask “how” the pain persists rather than “why”
- Avoid making her feel passive and dependent
- Avoid making her feel responsible for failure
- Avoid overestimating secondary benefits

Labat 2010
Individualized Multidisciplinary Treatment

Treatment Options

- First step is **vulvar self-care**, e.g., avoid all vulvar irritants, chronic pain self-care (http://www.nva.org/tips)
- Oral “pain-blocking” medications
- Topical formulations
- Nerve blocks
- Pelvic floor physical therapy
- Psychotherapy
- Neurostimulation
- Surgery

Slide references available at www.nva.org/CMErefs
Individualized Multidisciplinary Treatment

Current Focus of Efficacy Studies

- **Topical steroids**
  - Improvement, worsening reported; recent review concluded steroids ineffective

- **Neogyn (cutaneous lysate skin cream with human cytokines)**
  - Initially demonstrated decreased inflammation, dyspareunia

- **Subcutaneous Steroid/Anesthetic Injections**
  - Some improvement

- **Vaginal Diazepam**
  - Initial cases showed decreased PFM and vulvar pain; unclear if effects local or systemic

- **Physical therapy**
  - RTC of 212 women with PVD treated with multimodal physiotherapy vs overnight lidocaine ointment

Slide references [www.nva.org/CMErefs](http://www.nva.org/CMErefs)
Individualized Multidisciplinary Treatment
*Treatments Lacking Proof of Efficacy*

**Interferon Injections**
- Recent data indicate lower or non-existent efficacy rate

**Topical Cromolyn**
- Minimal efficacy for recalcitrant symptoms

**Diet Modification**
- No difference in urinary oxalate excreted by women with vulvodynia and controls
- Case-controlled, population-based study -- no association between high oxalate foods and risk of vulvodynia
- Questions remain regarding decreased acid/sugar intake
Outcomes tools

- Female Sexual Function Index (FSFI)
- NIH PROMIS (Patient Reported Outcomes Measurement Information System)
  - Numerous tools using computerized adaptive testing to measure outcomes, including pediatrics
- Web-based and smartphone apps available online
  - Used by pain sufferers
- Tools listed on NVA website (www.nva.org/tools)
Vulvodynia

- Chronic vulvar pain of at least 3 months duration
- Occurring in absence of a clear identifiable cause
- Widely prevalent, misdiagnosed, and under-researched pain disorder
- Affects females of all ages and ethnicities
- Negatively affects female’s physical, emotional and sexual health
Vulva

- Contains tissues derived from both endoderm and ectoderm
- Innervated by ilioinguinal, genitofemoral, pudendal nerves
- Function relies on superficial and deep pelvic floor muscles
Key Summary Take Home Points

Symptoms

- Genital pain
- Genital burning for more than three months
- 10 or more episodes of pain on contact with tampon insertion, intercourse or gynecologic exam
- Pain on contact that limits/prevents intercourse
Pathophysiology

- Remains inconclusive
- Research supports multiple mechanisms predispose, trigger and perpetuate symptoms
- Heterogeneous mechanism-based subgroups demonstrate variable degrees of peripheral and central nervous system sensitization, vestibular tissue changes, and pelvic floor muscle dysfunction
Vulvodynia subtype classification

- **Location**
  - Generalized -- several areas of the vulva
  - Localized -- a specific vulvar region

- **Provocation (provoked, spontaneous or mixed)**
  - Generalized vulvodynia -- spontaneous pain in several vulvar areas
  - Provoked vestibulodynia (PVD) -- provoked pain localized to the vulvar vestibule
Assessment

- Ruled out all known infectious, inflammatory, neurologic, neoplastic and other causes of vulvar pain
- Visual exam of the vulva
- Cotton-swab exam of the vulva and vulvar vestibule
- Neurosensory exam
- Assess pelvic floor muscle function
- Evaluate pain comorbidity and contributing factors
Key Summary Take Home Points

Treatment

- Identify vulvodynia subtype and contributing factors
- Select components of individualized, multidisciplinary, biopsychosocial treatment regimen
- Due to heterogeneity, treatment response varies
- Can take time to identify helpful regimen but majority of females do improve
Key Summary Take Home Points

Outcomes

- Vital to assess and track key pain-related domains over time and with treatment
- Validated easy-to-use tools available
  - Pain intensity and interference
  - Physical, sexual and emotional function
  - Sleep interference
  - Treatment side effects
Selected References

- Slide references
  - www.nva.org/CMErefs
- Proceedings of the 2011 & 2003 NIH Conferences
  - www.nva.org/nihreports
- Selected reference textbooks
  - www.nva.org/bookstore
  - Female Sexual Pain Disorders: Evaluation and Management (Goldstein, Pukall, Goldstein)
  - The Vulva: Anatomy, Physiology and Pathology (Farage, Maibach)
<table>
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<th>Selected References</th>
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<td>Selected Journal References (<a href="http://www.nva.org/articles">www.nva.org/articles</a>)</td>
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- 2015 Consensus Terminology and Classification of Persistent Vulvar Pain and Vulvodynia
- Medical and Physical Predictors of Localized Provoked Vestibulodynia
- Vulvodynia: Diagnosis and Management
- Vulvodynia: An Evidence-Based Approach to Medical Management
- Vulvodynia-An Evidence-Based Literature Review and Proposed Treatment Algorithm
- The Vulvodynia Guideline
- 2013 Vulvodynia Guideline Update
- Vulvodynia Interventions – Systematic Review and Evidence Grading
Self-Help Guide
- Self-help strategies for alleviating vulvar pain and maintaining sexual intimacy

Conception to Pregnancy Guide
- Information on conception through postpartum

Partner Guide
- Helps partners have better understanding of vulvodynia and challenges of living with someone impacted

Disability Guide
- Step-by-step guide to help vulvodynia sufferers compile and submit successful disability claim
Patient Resources

NVA brochures

- www.nva.org/publications/

Self-help tips

- www.nva.org/tips
Thank you for your time and attention

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