Gender Health

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DISCLOSURES

• None
Polycystic Ovary Disease

Every Life Deserves World Class Care
Objectives and Outcomes Part 1

Use the nursing process to identify and stratify risks important to gender health in 2017 as it relates to:

- Polycystic ovarian disease
- Menopause
- LGBT Care
- Cancer screening and prevention
  - Breast health screening
  - Cervical cancer screening
  - Prostate health screening
  - Nutrition
Guiding Questions--PCOS

• What are diagnostic criteria for PCOS?

• What are the pathophysiologic mechanisms of PCOS?

• Why is insulin resistance an issue in PCOS? What are some strategies can we use to manage it in this patient group?

• Why is this disease important to management of populations?
PCOS

• There is a lack of diagnostic criteria at extremes of age

• In adolescents, due to overlapping of signs with normal puberty

• Rotterdam criteria (2003): androgen excess, chronic anovulation, polycystic ovaries
  – Must have 2 of 3
Diagnostic Criteria for PCOS

- **Adults**—androgen excess, ovulatory dysfunction, polycystic ovaries (must have 2 of 3)

- **Adolescents**—androgen excess with irregular menses, but no just irregular menses or polycystic ovaries (may have normal ovaries)

- **Perimenopause/Menopause**—based on past history, unlikely to see polycystic ovaries on ultrasound
Associated Morbidity

- Skin manifestations
- Infertility
- Endometrial Cancer
- Pregnancy Complications
- Type 2 Diabetes
- Obesity
- Depression
- OSA
- Cardiovascular Risks
The Great Imitators - Diagnoses to Exclude

- Thyroid disease
- Prolactin excess
- Nonclassical congenital adrenal hyperplasia
- Pregnancy
- Acromegaly
- Cushing’s Syndrome
- Androgen-secreting tumor
- Primary ovarian insufficiency
- Hypothalamic amenorrhea (female athlete triad)
PCOS Treatment

• Exercise

• Weight Loss

• Medications
  – Hormonal contraceptives (acne, menstrual irregularities)
  – Metformin (insulin resistance)
  – Statins (hyperlipidemia, may increase insulin resistance)
  – Clomiphene citrate/letrozole (infertility)
Case Study 1

- Maya, a 42 year old woman, presents for gyn care. She has a history of irregular menstrual cycles for several years and has been reluctant to see a provider because of lack of insurance. She reports some abnormal uterine bleeding, presenting mostly as periods lasting 2 weeks or longer, particularly over the last 4 months.
In doing your initial interview with Maya, you discover:

- Sexually active-prefers same gender
- No birth control
- Nulliparous
- Last pap 15 years ago
Case 1 continued

PMH: obesity

PSH: none

Family history: diabetes, cancer, stroke, heart disease, menstrual disorders, infertility, obesity

Social: stays with friends when she can; uses cigarettes, alcohol and marijuana when accessible
Case 1 continued

Physical findings:

VS- BP=160/98, pulse 78, RR 12

BMI=25.5, hyperpigmentation around neck, hirsuit upper lip and chin.

Breast, heart and lung exams are normal.
Case 1 Discussion Points

- Risk assessment of a patient identifying LGBT gender spectrum
- What are the common issues affecting the care of LGBT patients?
- How can we use this knowledge for the assessment of risk and prevention of disease in this patient population?
- Life issues and risk: psychosocial issues with self esteem, unstable living and support system, drug use, healthcare access, silence.
Case 1 Discussion Points

- Patient issues: poor screening history, irregular menses/chronic anovulation, nulliparous, family history of menstrual irregularities/infertility, hirsuitism, possible acanthosis nigricans, LGBT patient group
Case 1 Discussion Points

• Evaluate for co-morbidities:
  – Type 2 diabetes
  – hyperlipidemia
  – endometrial hyperplasia
  – obesity
  – sleep apnea
  – carcinomas

• Consider: Statin therapy and worsened insulin sensitivity
Objectives

• Review the diagnostic criteria for menopause—one year after last menstrual period (LMP)

• Symptoms may begin years earlier
  – Perimenopause or “Menopause Transition”

• What symptoms commonly occur in women due to the physiologic changes of menopause?
  – Vasomotor
  – Menstrual irregularities (perimenopause)
  – Genitourinary Syndrome of Menopause
  – Urinary incontinence
Menopause Symptom Treatment

• Supportive therapies
  – Lifestyle modifications
  – Silicon-based vaginal lubricant

• Pharmacotherapies
  – Hormonal
    – Estrogen or estrogen/progesterone oral or transdermal for systemic symptoms
    – Estrogen cream or ring for vaginal symptoms
    – Progesterone alone—no (poss. Increased risk of breast cancer)
    – Testosterone—not currently recommended, but may have role with estrogen/progesterone therapy
  – Nonhormonal
    – SSRI’s, Clonidine, Gabapentin
Menopause Symptom Treatment continued

• Natural therapies
  – Soy, phytoestrogens (plants)
  – Herbs: ginseng, black cohosh, gingko biloba, St. John’s Wort, dong quai
  – Vitamin E

• Complementary/Alternative Therapies
  – Accupuncture combined with Chinese herbal medicine
Case 2

- Louise is a 46 year old woman (established patient for several years) coming to see you for her annual well-woman visit. She has been reporting symptoms she associates with perimenopause off and on for the past 5 or 6 years. However, her symptoms are increasing in severity, particularly her hot flushes, and she wants to know what she can do to ameliorate them. She is interested in both pharmacologic and non-pharmacologic options.
Case 2 Continued

In talking with Louise, you discover:

• Her hot flushes prevent her from sleeping soundly at least 3-4 nights of the week

• Menses are becoming irregular in timing and duration as well as quantity

• She complains of sometime vaginal discomfort during intercourse that she describes as “irritation.”
Case 2 continued

PMH: G2P2, normal spontaneous vaginal deliveries, takes a multivitamin daily, walks for fitness, hayfever controlled with PRN cetirizine

PSH: T&A as a child

Family history: diabetes, cancer, hypertension

Social: divorced, lives alone, 2 adult children with whom she is close, many supportive family and friends
Case 2 Continued

Physical Findings:

• BP: 128/68 P: 70 R: 12

• BMI: 27

• Breast, heart, lung exams normal

• Genital exam reveals characteristics of mild atrophic vaginitis
  – Genitourinary Syndrome of Menopause: reduced vaginal blood flow, diminished lubrication, decreased elasticity, thinning of epithelium
  – Results in pain, burning, fissuring, irritation, bleeding with intercourse
Case 2 Discussion Points

• Taking into account Louise’s symptoms, what would you suggest as options for management of her complaints?

• What are your recommendations for follow up/continued care?
Cancer Screening and Prevention Updates

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Objectives

Discuss the recent advances and recommendations for

– Anal cancer screening
– Breast cancer screening
– Cervical cancer screening
– Endometrial cancer
– Oral cancer screening
– Prostate cancer screening
– Colorectal cancer screening
By the end of this session, attendees will be able to:

- State the current Pap and HPV screening guidelines
- State current HPV vaccination guidelines
Case 3

Kevin is a 52 year old man presenting for a required health assessment due to his new position as an xray tech. He tells you that he is on medication for high blood pressure and has recently begun an exercise and nutrition program to decrease his weight. He tells you also that his wife complains of his snoring at night, and he often wakes in the morning feeling tired. He complains of some urgency and frequency with urination over the past couple of months, with a weak stream noted.
Case 3 continued

During your interview with Kevin, you discover he:

• Is married, but his wife now sleeps in a separate room
• His wife complains of snoring and tossing and turning all night
• Complains a lot of feeling fatigued during the day
• Is on medication for hypertension x 5 years
• He is thinking of starting an exercise program
• Complains of difficulty starting his urinary stream and nocturia
Case 3 continued

PMH: obesity

PSH: none

Family history: diabetes, cancer, stroke, heart disease

Social: works full time, smoker- 20 pk year history, denies illicit substance use, has 1-2 alcoholic beverages (hard liquor) each night, drinks “lots” of coffee to stay alert throughout day. History of genital warts in college. Just starting an exercise program to help fatigue.
Case 3 continued

Physical findings:

VS - BP=132/78, pulse 70, RR 12

BMI=36

Oral exam is unremarkable except for a white plaque on his oropharynx

Heart and lungs exam unremarkable

Prostate exam remarkable for enlargement

Nodule on rectal exam
Case 3 Discussion Points

• Review prostate screening guidelines
• Review the significance of HPV in men
• Discuss the risk of smoking and HPV infection
• Any other conditions for which Kevin is at risk?
• Labs
  – PSA
  – Lipid panel
  – Fasting glucose
  – HgbA1C
HPV-associated Cancers

- 39,000 new HPV associated cancers each year
- Most sexually active people (75-80%) will be infected – most will clear and be asymptomatic
- HPV vaccines can prevent most anal, oropharyngeal and other genital cancers
- Incidence of these cancers are increasing
- HPV vaccines protects against the
  - Two high risk HPV strains that are responsible for 70% of all cervical cancers
  - Two low-risk HPV strains that cause 90 percent genital warts
HPV vaccination guidelines

• Children 11-12- 2 doses of the vaccine at least 6 months apart
• Adolescents and young adults older than 15: three dose series within 6 months
• Critical need to increase vaccination rates
Recommendations

• Screen annually for risk factors and then stratify

• Breast:
  – age 40-44 start mammograms annually until age 55 (ACS) when they can go to every 2 years or continue annually

• Cervix (Pap smear):
  – Screen at age 21 not earlier regardless of their sexual initiation.
  – Age 21-29 every three years with cytology.
  – Age 30-65 every 5 years with co-HPV testing of every 3 years with cytology alone.
  – Discontinuing screening after age 65 unless prior High grade Squamous Intraepithelial Lesions
Recommendations

• Cervix:
  – Special circumstances: DES exposure, immunocompromised by organ transplant, HIV positivity, CIN II or higher (all negative within the last 20 years)
  – Recommended screening should not change even if patient has received HPV vaccination
  
  – HPV negative ASC-US return to every 3 year screening rather than every 4 years. Do not let these women exit screening over 65!
Recommendations

• Colorectal: high risk vs average risk adults
  – Adenomatous polyps
  – Prior curative resection of CRC
  – First degree relative with a h/o CRC or colorectal adenomas
  – Individuals with IBD of significant duration
  – Lynch syndrome or familial adenomatous polyposis

• Endometrial: women at menopause (55,000/10,000)
  – Only screen high risk: Lynch syndrome genetic mutation high risk groups (known or suspected in the absence of genetic testing results)
Recommendations

• Prostate: men age 50- digital examination and Prostate Specific Antigen test (*controversial now-based on presence of a 10 year life expectancy*)
  – African American men and those with a first degree relative with prostate ca before age 65- start screening at age 45
Recommendation--Yearly

- Oral cancers: high risk groups
- Anal cancers: high risk groups
Advances in Prenatal Screening

Every Life Deserves World Class Care
Objectives

• Review the concept of prenatal screening and diagnosis

• Understand the screening and diagnostic options available to patients

• Describe and understand the advantages, disadvantages, and limitations of Non-Invasive Prenatal Testing (NIPT)

• Apply technologies in the prenatal setting
  – The right test at the right time

*Selected slides courtesy of Dr. E. Philipson MD*
Prenatal Screening

• Goal of prenatal screening is to increase options for patients and their families
  – Decision making
  – Often think it is for termination
  – Preparation for the delivery of a patient with complex needs
  – Recurrence risk
  – Testing for at-risk relatives

• Challenge in screening is to have a test that has a high detection rate and low false positive rate

• Screening tests by definition are NOT diagnostic
Terminology Refresher

• In medical diagnosis, **sensitivity** is the ability of a test to correctly identify those with the condition (true positive rate), whereas **specificity** is the ability of the test to correctly identify those without the condition (true negative rate).
Prenatal Screening

• American College of Obstetricians and Gynecologists (ACOG) recommendations:
  – All women should be offered screening prior to 20 weeks gestation regardless of age
  – All women should be offered the option of invasive testing regardless of age
Which Tests to Perform?

• Depends on patient’s individual situation

• Depends on patient’s desire for information regarding the pregnancy
  – Can vary widely
  – Some desire no testing at all
  – Others desire comprehensive assessment
Current Prenatal Screening Options

• Sequential screen - 2 Parts
  – First Trimester (10 3/7 weeks-14 weeks): nuchal translucency + serum markers (B-hCG + PAPP-A):
    – Sensitivity:
      – Down syndrome (Trisomy 21): 85%
      – Trisomy 18: 80%
      – False positive rate: 1.2%
  – Second Trimester (15 weeks- 22 weeks): Quad screen
    – Sensitivity:
      – Down syndrome (Trisomy 21): 90%
      – Trisomy18: 90%
      – Open Neural Tube Defects (e.g. spina bifida): 80%
      – False positive rate: 3.7%
Diagnostic Testing Options

• Chorionic Villus Sampling (CVS)
  – from 11-14 weeks
    – Many physicians perform sooner than 14 weeks
  – Accuracy 98%
  – Not always feasible
  – Risk of pregnancy loss (1/300-400)

• Amniocentesis
  – After 15 weeks gestation
  – Accuracy- 99%
  – Risk of pregnancy loss
Array Comparative Genomic Hybridization
“Microarray”

• Not the same as noninvasive prenatal testing
• If there is an abnormality noted on ultrasound, this is the recommended test.
• From chorionic villus or amniocentesis samples only, more accurate for finding the cause when there is a known issue with the fetus.
Cell Free Fetal DNA

- Circulating cell free fetal DNA is present in the plasma of pregnant women along with maternal DNA

- Variable amounts: from 2-3% to as high as 20-30%
  - Not known why it varies
  - “Fetal fraction” - important for test interpretation—need to have enough fetal DNA to test

- Can do Noninvasive Prenatal Testing earliest at 7 weeks, not as accurate, MED recommendation is 10 weeks

- Cleared from maternal blood within hours after birth
Cell-free DNA (cfDNA)

cfDNA comes from apoptotic cells derived from:

- Maternal Circulation
  - Adipocytes
  - White Blood Cells
- Fetal
  - Placental cells (trophoblasts) in the maternal circulation
Non-Invasive Prenatal Testing or NIPT

- 2 Different methodologies
  1) Next Generation - uses the whole DNA sequence
     - Collects enormous amount of information
     - Costly
     - Not doing this for Trisomy 21 (Down Syndrome)
     - Patent protected
  2) Selected probes
     - Cheaper
     - Focus on area of interest
     - Can expand to more disorders if needed

  - Sensitivity: 98-99%
  - False positive: 0.2-0.3%
Differentiating NIPT Methodologies

- Massively Parallel Shotgun Sequencing
  - Sequenom MaterniT21™
  - Verinata Verifi®
  - BGI NIFTY™
  - Berry BAMBNI™

- Targeted Sequencing
  - Ariosa Harmony™

- Targeted Sequencing
  - Natera Panorama™

COUNTING

SNPs
ACOG & SMFM Committee Opinion

• Indications for NIPT
  – Advanced maternal age (>35)
  – Ultrasound findings suspicious for abnormalities
  – History of a pregnancy with Trisomy 13, 18, or 21 (Down’s)
  – Increased risk for genetic abnormality on screening test

NIPT or NIPS?

• Very important concept

• NIPT is not a test, rather a screen!

• An excellent screen
  – for Trisomy 21 (Down Syndrome): sensitivity 98-99%, false + 0.2-0.3, specificity < 1%
  – For Trisomy 13 and Trisomy 18: Not as good

• False reassurance

• Every test misses something!

• Positive result does not necessarily mean an affected pregnancy, even in high risk patients!
The Right Test At The Right Time

• NIPT should be utilized as a screening test per ACOG guidelines

• NIPT is a “substandard test” in the presence of:
  – Increased Nuchal Translucency on ultrasound
  – Congenital abnormalities
  – Translocations and other chromosomal abnormalities

• Diagnostic testing is recommended instead
NIPT and Rhesus Factor (Rh Factor)

- NIPT can screen for the Rh factor in the fetus
- It is utilized for this additional purpose in Europe, not currently in the US
- ACOG Position Statement (9/2015) does not address
Medical Management After Negative NIPT

• Alpha-fetoprotein screen (looks for spina bifida/anencephaly)

• Detailed anatomy ultrasound at 18-20 weeks

• Routine prenatal care

• Be sure to consider any need for family history and ethnicity screening
Future of Prenatal Screening/Diagnosis

• A Pandora’s Box—there will be expansive growth in technological capabilities

• NIPT will begin to replace other screening tests

• Technology will extend beyond genetic abnormality testing to include other options
Case 4

- Maria is a 28 year old who is newly pregnant
- Though not planned, she is happy about this and wants to know what she needs to do to have a “normal” baby
- She is healthy with no medical problems and takes no medications except occasional Tylenol for headaches
- Her husband was adopted and his family history is unknown
- She has a sister with 2 healthy children
  - Her sister was found to be a carrier of cystic fibrosis
- What screening do you recommend based on the above information?
Case 4 Continued

• After interviewing Maria, you offer her the following options:
  – First trimester screening
  – Chorionic villus sampling or amniocentesis
  – Non-invasive prenatal-testing

• Based on her results, you will order further testing as indicated.
FYI: Updated Definitions of Term Pregnancy

- 37-38 6/7 weeks - Early Term
- 39-40 6/7 weeks - Full Term
- 41-41 6/7 weeks - Late Term
- 42 weeks and beyond - Postterm
- Less than 37 completed weeks is still “preterm.”
Random (But Important) Obstetric Updates

• Magnesium Sulfate
  – No longer used for preterm labor!
  – Used for severe preeclampsia
  – Used for neuroprotection if < 32 weeks for 12-24 hours if delivery considered likely

• Steroids for Fetal Lung Maternity
  – 23-34 weeks to initiate lung maturity in fetus, attempt to delay delivery for 48 hours to allow time to work
  – Recommended for use in 34 - 37 week gestation if delivery considered to be likely, NO attempts to delay delivery
Joint Commission--Perinatal Core Measures

• PC-01: Elective Delivery
• PC-02: Cesarean Section
• PC-03: Antenatal Steroids
• PC-04: Health Care–Associated Bloodstream Infections in Newborns
• PC-05: Exclusive Breast Milk Feeding
  — PC-05a: Exclusive Breast Milk Feeding Considering Mother’s Choice
References


- Bouchard P, and Fauser B. PCOS: An heterogeneous condition with multiple faces for multiple doctors. www.eje-online.org


References (Continued)

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