A Morning and Working Lunch in the GYN Clinic

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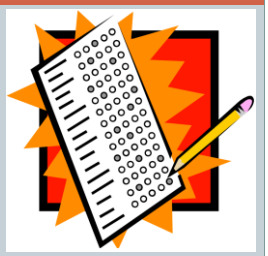
- Disclosures
  - I have no disclosures to make

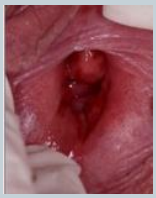
Please note with the following patient scenarios

- 1. There may be more than one correct answer
- 2. There might not be a correct answer
- 3. Local referral patterns and local expertise may affect some answers



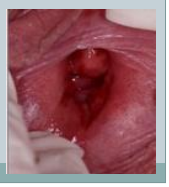
12:20

- 55 y G3P3003 presents with purulent vaginal discharge, dyspareunia…PMH/PSH only remarkable for C-HTN and Vaginal Hysterectomy.
- On vaginal exam- spotty ecchymotic rash and focal erythema.
- Vaginal PH = >4.5
- Wet prep = Increased numbers of parabasal and inflammatory cells, no clue cells, and no Trichomonads seen



12:20 Continued

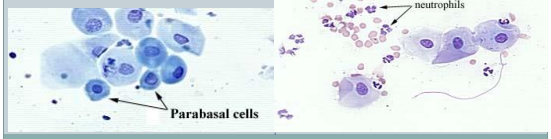
- You recommend:
  - A) Clindamycin cream 2% 5gm intravaginal qday x 6 weeks
  - B) Hydrocortisone cream 10% 5gm intravaginal qday x 6 weeks
  - C) Flagyl 500 mg po BID x 7 days
  - D) Doxycyline 100 mg po BID x 7d



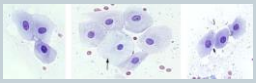
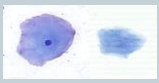
Diagnosis of Desquamated Inflammatory Vaginitis

- Requires all the following
  - Vaginal inflammation
  - Vaginal Ph >4.5
  - Wet prep showing increased numbers of parabasal and inflammatory cells (leukocyte to epithelial cells ratio greater then 1:1)
  - At least one of the following symptoms
    - Vaginal discharge
    - Dyspareunia
    - Pruritus
    - Burning
    - Irritation

Smallest epithelial cells, nearly round with high nuclear to cytoplasmic ratio



Other Vaginal Epithelial Cells

Intermediate cells	Superficial Cells
	

Treatment of Desquamated Inflammatory Vaginitis

- 2% clindamycin cream 4 to 5 grams intravaginal once daily for 4-6 weeks
- 10% hydrocortisone cream 3 to 5 grams intravaginal once daily for 4-6 weeks

Vaginitis Differentiation

	Normal	Trichomoniasis	Candidiasis	Bacterial Vaginosis
Symptom presentation		**Itch, discharge, 50% asymptomatic**	Itch, discomfort, dysuria, thick discharge	Odor, discharge, itch
Vaginal discharge	Clear to white	**Frothy, gray or yellow-green; malodorous**	Thick, clumpy, white "cottage cheese"	Homogenous, adherent, thin, milky white; malodorous "foul fishy"
Clinical findings		**Cervical petechiae "strawberry cervix"**	Inflammation and erythema	
Vaginal pH	3.8 - 4.2	**> 4.5**	Usually ≤ 4.5	> 4.5
KOH "whiff" test	Negative	**Often positive**	Negative	Positive
NaCl wet mount	Lacto-bacilli	**Motile flagellated protozoa, many WBCs**	Few WBCs	Clue cells (≥ 20%), no/ few WBCs
KOH wet mount			Pseudohyphae or spores if non-*albicans* species	

12:30

- 21 yo Go presents for a problem focused visit. She has dysuria, so your nursing staff has instructed your patient on importance of cleaning prior to collection of midstream urine. Her UA is unremarkable. During work up she asks about screening for STI as she hasn't been screened in past 2 years. She is also interested in starting combined oral contraception pills. She declines having pelvic exam since she had one a month ago at annual exam. You should
  - A) send urine for NAAT testing
  - B) explain need for speculum exam for testing
  - C) perform testing on vaginal secretions without speculum
  - D) wait 30 minutes from original UA and collect a first catch

Diagnosis of Chlamydial Infections

- With NAAT testing (Nucleic Acid Amplification Testing)
  - Can be collected without performing a pelvic exam
  - Urine
    - Should be first-catch urine
    - Should not have voided in past 2 hours
- 14 studies pooled data shows
  - Urine: sensitivity = 83 specificity = 99.5%
  - Cervical samples: sensitivity = 93 specificity = 99.6%
- Vaginal Swab
  - Higher sensitivity then urine
  - Some studies show higher then cervical

Marrazo, J, Clinical Manifesations and diagnosis of Chlaymida Infections, UptoDate, 10/12/17

12:30 (continued)

- Patient wants the testing, but wants to do it herself. You should:
  - A) allow her to perform self-collected after she is taught the correct method
  - B) allow her to perform self-collected after she is taught the correct method, and make her aware of decreased sensitivity as compared to provider collected
  - C) Prohibit self-collected testing

Chlamydia Testing

- NAAT (that are FDA approved for use with vaginal swab specimens)
  - Can be collected by provider or self-collected in clinical setting
    - Self collected swabs are equivalent in sensitivity and specificity to those collected by a clinician
    - Women find self collection highly acceptable

CDC, Sexually Transmitted Diseases Treatment Guidelines, 2015.

12:45

- 31 yo G3P2012 bodybuilder presents for "pregnancy". Pt reports she has had a BTL and was surprised when her elective surgery was cancelled due to her quantitative HCG of 40,000. You perform an Ultrasound with is completely normal with no evidence of IUP, or endometrial mass/blood/tissue or ectopic pregnancy. Therefore a quantitative HCG is repeated and again its 40,000. Your next step is:
  - A) D and C in the OR
  - B) Endometrial Biopsy
  - C) Urine pregnancy test

False Positive or "Phantom HCG"

- Anti-animal immunoglobulin antibodies
- E.Coli septicemia
- Glycoprotein hormone human Luteinizing hormone
- Serine proteases of human or bacterial origin
- Injections or ingestion of HCG
  - Ovulation induction, treatment of cryptorchidism, and testing for testicular function
  - Proposed weight loss aid
  - Stimulation of endogenous androgen production in athletes

False Positive or "Phantom HCG"

- Urine test
  - False HCG are general large molecules that will not be picked up on urine
- Send serum to separate laboratory using different commercial assays
- Serial dilution of serum
  - If false positive is due to heterophilic antibodies, the results will not decrease as expected

13:00

- 27 yo G4P4 presents for amenorrhea and found to have a positive UPT. A bedside Ultrasound is performed showing vesicles in the uterus. As you are concerned for a possible abortion or Gestational Trophoblastic disease you order a beta-HCG, which results as < 3. The cause of these "non-consistent" pregnancy tests could be:
  - A) Lab error with labeling or report of data
  - B) Hook affect
  - C) Ladder affect

False Negative HCG (Hook Affect)

- Hook Affect
  - Can be seen when HCG is above 500,000
  - HCG tests are designed for 27,000-233,000
  - With extreme high HCG
    - Both tracer and capture antibodies are saturated, and non-saturated can be washed away- therefore giving negative result
  - Notify lab when a test is being done for suspected molar pregnancy-they can perform a 1:1000 dilution and stop the hook affect

13:10

- 27 yo G3P2012 present for annual exam. Her PMH is uncomplicated and her PSH is significant for CD and BTL. She states that she doesn't like the way she feels for part of the month and it's affecting her at work. She is fearful she could lose her job. She reports her menses is the first week of the month "like clockwork" and her "issues" are always the last week of the month. She states that her "issues" are: mood swings, anxiety, and sensitivity to rejection.

Your presumptive diagnosis is:

A) Premenstrual syndrome
B) Premenstrual dysphoric disorder
C) Generalized mood disorder
D) Hurried Woman Syndrome

Premenstrual Syndrome

- ACOG = Defines PMS as the presence of at least one symptom occurring in the luteal phase of the cycle, which leads to impairment in functioning
- ISPMD = The International Society for Premenstrual Disorders identified "core" criteria for clinically significant PMS to include at least one symptom that is either psychological or behavioral. The symptom(s) must impair functioning in some way and the symptom must remit at menses or shortly thereafter to **constitute a symptom-free interval**

Premenstrual Dysphoric Disorder

DSM V Criteria – One of these must be present:

- Mood swings, sudden sadness, increased sensitivity to rejection
- Anger, irritability
- Sense of hopelessness, depressed mood, self-critical thoughts
- Tension, anxiety, feeling on edge

DSM V Criteria (continued)

A total of 5 symptoms must be present.
Additional symptoms could be:

- Difficulty concentrating
- Change in appetite, food cravings, overeating
- Diminished interest in usual activities
- Easy fatigability, decreased energy
- Feeling overwhelmed or out of control
- Breast tenderness, bloating, weight gain, or joint/muscles aches
- Sleeping too much or not sleeping enough

PMDD Treatment Options

What are appropriate treatment options for this patient?

- A) Exercise and relaxation
- B) B-6 and calcium supplementation
- C) SSRI or SNRI
- D) Oral contraceptives or Gn-RH agonist

PMDD Treatment Options

Exercise and Relaxation

- Effective, but for mild symptoms
- Since she has socioeconomic dysfunction, this patient would be moderate/severe

B-6 and Calcium supplementation

- Not shown to be superior to placebo
- Placebo with 30% response rate
  - High dose B-6 can lead to peripheral neuropathy
  - Calcium supplementation can lead to increase risk of heart disease
- Vitamin E, vitex agnus castus, and magnesium, have also no proven benefit

PMDD SSRI Regimens

- Continuous or
- Luteal Phase (start on cycle day 14) or
- Symptom onset therapy
  - How to choose
    - Are cycles regular?
    - Does patient have low level symptoms outside of luteal phase?
    - Are symptoms predictable?
    - Is there a mild prodromal period?

PMDD Treatment Options (continued)

Increasing Central Serotonergic Transmission

- SSRI - fluoxetine 20 mg qday or sertraline 50 -150 mg day are the most extensively studied for PMDD and approved for use (1st line)
- SSNRI - Venlafaxine 75 to 150 mg

- if used for PMDD, then typically follow depression dosing, with increasing until affective

PMDD Treatment Options (continued)

- Suppressing the hypothalamic-pituitary-ovarian axis to abolish cyclic changes in gonadal steroids
  - Oral contraceptives - stop ovulation - 2nd line therapy
  - Best if have Dosperinone and 4 day pill free period
  - (Yaz is 4 days and Yazmin is 7 days)
    - Remember: risk of Dosperinone and VTE

4th generation Contraindications

- Possibly up to 3 x higher rate of VTE
- Overall risk is still low

Hurried Woman Syndrome

The three major symptoms of the Hurried Woman Syndrome are:

- Fatigue or a low mood
- Weight gain
- Low sex drive (libido)

13:15

As both a busy clinician, as well as all around swell person, you agree to serve as a preceptor for a student. Trying to follow modern teaching theory, you "frame" your patient prior to letting the learner go see them independently. After seeing an interesting pateint, you ask the student a question that you feel is "fair" for their level of knowledge.

How long should you allow the student to think prior to assuming they don't know the answer?

A) 4 sec
B) 5 sec
C) 6 sec
D) 7 seconds

- Leaners processing new information can take **6** seconds to respond
- What are techniques to improve learning outcomes in the ambulatory setting?

- Teaching a skill
  - 1. Watch Full Speed
  - 2. Watch slow speed with explanation
  - 3. Learner explains (using words) what the steps are
  - 4. Learner performs until competency

- Teaching a concept
  1. Why is it relevant?
  2. Great if you can connect it back to pre-clinical knowledge
  3. So much to learn, So much changes SO quickly
     1. How do you answer a clinical questions quickly during the day
     2. How do you stay up-to-date?

13:25

- 38 yo G1P1 presents for complaints of hot flashes and mood irritability. She has an uncomplicated PMH and PSH, and does not take any medications. She reports in the past year that her menses have changed as well. She explains that she keeps track on her cell phone and she has had 2 menses exactly since last year. [TSH = nml, Proacltin = nml, and FSH = 65] The most appropriate diagnosis is:

A) Premature Ovarian Insufficiency
B) Menometorrhagia
C) Atypical Hypothyroidism masked by Hypergonadotrophin release
D) Atypical Hyperthyroidism masked by Hypergonadotrophin release

Answer

- Amenorrhea is not required for the diagnosis of POI

Table 3. Clinical States Included in the Spectrum of Primary Ovarian Insufficiency.*

Clinical State	Serum FSH Level	Fertility	Menses
Normal	Normal	Normal	Regular
Occult	Normal	Reduced	Regular
Biochemical	Elevated	Reduced	Regular
Overt	Elevated	Reduced	Irregular or absent

Nelson LM. Clinical practice. Primary ovarian insufficiency. N Engl J Med 2009; 360:606.

13:40

- A new, yet remarkably very similar to your last patient presents. She is a 38 yo G1P1 presents for complaints of hot flashes and mood irritability. She has an uncomplicated PMH and PSH, and does not take any medications. She reports in the past year that her menses have changed as well, and can best be described as prolonged oliogmenorrhea.
- What labs should you order?(listed on next slide)

- You should order the following labs
- A) Random TSH, random FSH
- B) Random TSH, random FSH, random Prolactin(PRL)
- C) Random TSH, random PRL, day 3 FSH
- D) Random TSH, random PRL, day 3 FSH and Day 3 serum estradiol
- E) Random TSH, random PRL, day 21 FSH and Day 21 serum estradiol

Occult Primary Ovarian Insufficiency

- Possibility of intermittent ovarian function, therefore can't do random FSH
- If amenorrhea, can do random

Why Check Estradiol

- Advanced premature follicle recruitment occurs in woman with poor ovarian reserves
  - → leads to elevated Estradiol
- High Estradiol levels can inhibit pituitary FSH production
  - Thus measurement of both can avoid False-negative FSH testing

- Estradiol <80 = adequate ovarian reserve
- Estradiol 80-100 = lower pregnancy rates
- Estradiol >100 = 0% pregnancy rate

- She knows she is supposed to collect her labs on Day 3. She calls in with this calendar
  - Tuesday 2/13 spotting
  - Wednesday 2/14 spotting
  - Thursday 2/15 – 2/22 regular menses
- She should report to the lab on

A) Thursday 2/15
B) Friday 2/16
C) Saturday 2/17
D) Monday 2/19

14:00

- Another new patient, yet again, very similar to your last patient presents. She is a 38 yo G1P1 presents for complaints of hot flashes and mood irritability. PMH = Asthma, PSH = none, Meds =Albuterol. She reports in the past year that her menses have changed as well. She explains that she keeps track on her cell phone and she has had 2 menses exactly since last year.
- Which labs should be ordered?

- A) Random TSH, random FSH
- B) Random TSH, random FSH, random Prolactin(PRL)
- C) Random TSH, random PRL, day 3 FSH
- D) Random TSH, random PRL, day 3 FSH and Day 3 serum estradiol
- E) Random TSH, random PRL, day 21 FSH and Day 21 serum estradiol
- F) Progestin Withdrawal test (10 mg Provera for 10 days)

Answer

Progestin Withdrawal Test

- Indirect measure of estrogen - if endometrium is exposed to estrogen, will have withdrawal bleed
- However intermittent, small amounts of estrogen maybe enough to "prime the pump"
- Plus the lack of bleeding maybe due to structural issue and not hormonal

14:15

- 48 yo G4P4005 presents with 2 year hx. of gradually worsening urinary leakage. She reports it occurs when she laughs and coughs, and it's getting so she has to wear a pad. Her PMH is significant for HTN, seasonal allergies, and depression. A Urinalysis is collected. Which of the following tests would be highest yield?
- A) Bladder Stress Test (Aka Cough test)
- B) Postvoid residual (either by bladder scanner or catherization)
- C) Urodynamic Testing
- D) Urethral Mobility testing

Bladder Stress Test

- **Gold Standard**....if you see urine from the urethra when they cough...then genuine stress urinary incontinence
- Could still be mixed, but for sure component of stress
- False negative may result from a small urine volume in the bladder or from patient inhibition

Post Void Residual
Not Necessary as a Part of Routine Evaluation

Consider with:

- Neurologic disease
- recurrent urinary tract infections
- History concerning for detrusor under activity or bladder outlet obstruction
- History of urinary retention
- Severe constipation
- Pelvic organ prolapse beyond the hymen
- New-onset or recurrent incontinence after surgery for incontinence
- Diabetes mellitus with peripheral neuropathy
- Concomitant use of medications that suppress detrusor contractility or increase sphincter tone

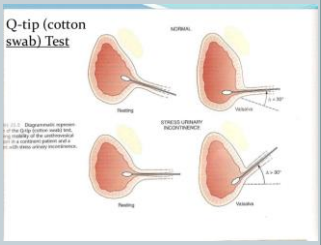
Urodynamic Testing

- Urodynamic testing has **not** been shown to **predict outcomes** of nonsurgical or surgical treatment of urinary incontinence

Huang AJ. Nonsurgical Treatments for Urinary Incontinence in Women: Summary of Primary Findings and Conclusions. JAMA Intern Med. 2013;173(15):1463–1464.

Urethral Mobility Testing

- Helps with Intrinsic sphincter deficiency vs hypermobile urethra
- Useful for surgical planning



14:19 (walk-in)

- 23 yo G2P2 presents for unscheduled visit secondary to condom breaking 4 days ago. She has PMH of HTN and Migraines with aura and would like emergency contraception. Her LMP was 16 days ago and your UPT is negative. You could:
  - A) Ulipristal 30 mg
  - B) Levonorgesterol 1.5 mg
  - C) Ethinyl Estradiol 0.1 mg and DL-Norgestrel 1.0 mg; two doses 12 hours apart
  - D) Copper IUD

ACOG Practice Bulletin 152

- Summary of Recommendations and Conclusions
- The following conclusions are based on good and consistent scientific evidence (Level A):
  - Ulipristal acetate is more effective than the levonorgestrel-only regimen and maintains its efficacy for up to 5 days.
  - The levonorgestrel-only regimen for emergency contraception is more effective than the combined hormonal regimen and is associated with less nausea and vomiting.
  - Insertion of a copper IUD is the most effective method of emergency contraception

ACOG Practice Bulletin 152

- Selective Progesterone Receptor modulator (Ulipristal)
  - Up to 5 days
- Progestin only (levonorgesterel)
  - Up to 3 days(Per package insert)****
  - Available over the counter
- Combined progestin-estrogen pill
  - Up to 5 days
- Copper IUD
  - Up to 5 days

- Best to worst
  - Copper IUD
  - Ulipristal acetate
  - Levonorgesterel-only
  - Combined Hormone regimine

EC availability in South Carolina

- S.C. Code Ann. § 16-3-1350 (1997) requires the South Carolina Crime Victims Compensation Fund to pay for medical treatment for sexual assault victims, including "medication for pregnancy prevention, if indicated and if desired."
- Per DHEC
  - "You can get EC from Drugstore without a prescription if you are 17 or older (with a prescription if you under 17) or for low or no-cost at a family planning clinic"

14:25

- 31 yo G1P1 with 4th documented episode of Bacterial Vaginosis this year with negative STI screening, low risk sexual behavior and no PMH or PSH. You could use:
  - A) Vaginal Acidifying agents
  - B) Probiotics
  - C) Metronidazole 500 mg po x 7 days with Boric Acid 600 Mg po q day x 21 days followed by Metronidazole 0.75% gel twice weekly for 6 months
  - D) Metronidazole gel 0.75% for 10 days followed by twice weekly dosing for 6 months
  - E) Clindamycin 2% vaginal cream qhs x 28 days, followed by twice weekly for 6 months

Management of Recurrent BV

- BORIC acid taken Orally can be lethal
  - Keep away from small kids
- Clindamycin (long term)
  - Proven to be effective in 7 day course(short term therapy)
  - Cream should not be used concurrently with latex condoms with may be weakened
  - **Not effective** for long term use
  - Concern for pseudomembranous colitis

Management of Recurrent BV

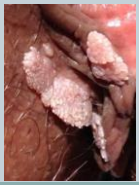
- The only interventions proven to reduce development or recurrence of BV are chronic suppressive therapy and circumcision of male partners
- If 3 or more documented episodes of BV in prior 12 months should offered long term maintenance therapy

Sobel, JD, Bacterial Vaginosis: Treatment, Up-To-Date 10/21/2017.

14:30

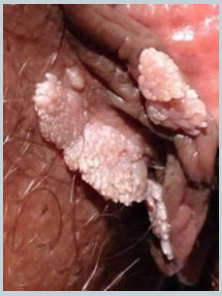
- 26 year old woman presents for vulvar lesion. She reports that she is sexually active with 2 partners in past 12 months, and 18 lifetime. The lesion itself is non-painful and non-pyritic. Her PMH is significant for SLE and Type 2 DM. The best option for this lesion is:

A) Biopsy
B) TCA
C) Imiquimod
D) Depo-Provera



- Be careful of look-alikes

This was actually VIN2



Cook, J, Ferguson, J, & Mayeaux, EJ. The Vulva: Anatomy, Physiology, and Pathology, Second Edition. 2016. CRC Press.

Clearance Rate and Recurrence by Treatment Method

Treatment	Clearance rate	Recurrence rate	Cost (2013 £)
Cryotherapy	79-88%	21-39%	266.86
Laser ablation	23-52%	≤ 77%	341.75
Excisional Proedures	35-72%	25-40%	162.71
Podophyllotoxin 0.5%	45-77%	≤ 38%	14.68
Imiquinod 5%	40-70%	9-19%	194.40
Imiquinod 3.5%	28 %	15%	
Sinecatechins	54-65%	6-9%	
Tricholric acid	56-81%	36%	249.86

*Clearance and recurrence rates from individual trials–there is not a comprehensive head-to-head study. The cost is reported in2013£ and represents the average total cost per course of treatment .

Cook, J, Ferguson, J, & Mayeaux, EJ. The Vulva: Anatomy, Physiology, and Pathology, Second Edition. 2016. CRC Press.

14:45

- 23 yo patient presents to your office for new OB care. She had a positive urine pregnancy test at home, but at 8 weeks along, nothing is seen within the uterus on ultrasound, and a quantitative HCG is <5. Which are possible causes for this?

A) Patient let pregnancy test stand too long prior to reading it
B) The pregnancy test has expired
C) Patient is on Medications that raise HCG levels
D) Patient had an early miscarriage
E) Residual HCG left after delivery or miscarriage
F) Germ Cell tumor
G) Septic shock

False Positive Pregnancy Test

- Effect of time on Pregnancy tests
  - Standard pregnancy test is positive with two lines
    - If wait too long, urine can evaporate and make it appear as if there are two lines.
    - Most commercial pregnancy tests tell patients to "read as soon as possible" after their 2-3 minute wait period

False Positive Pregnancy Test

B) Expired and "Dollar store" tests

- Increase changes of both false positive and false negatives

C) Meds that can cause false positive HCG

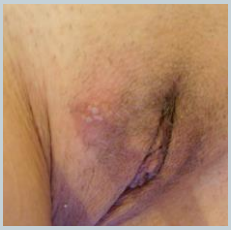
- HCG given as part of IVF
- Corifollitropin alfa (Elnova) FSH agonist
- HCG as “diet”

False Positive Pregnancy Test

- Septic Shock
  Case Reports of this in ED Literature
- Hypothesized…
  - “this may have been a molecule produced as part of the host inflammatory response or from bacterial synthesis of an interference with HCG-like antigenic structure”
- Transient as test was negative 48 hours later

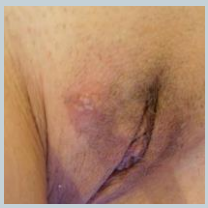
15:00

- 19 yo G0 presents with complaint of painful ulcer on her vulva. She reports being sexually active, with 2 current partners and 5 lifetime partners. She states she uses condoms for contraception "most times". You make your diagnosis with:



- You make your diagnosis with

A) Viral Culture
B) Polymerase Chain Reaction
C) Direct Fluorscence antibody
D) Type specific serologic tests



Diagnostic Testing for HSV

- HSV Viral Culture
  - Low sensitivity (50%)
  - Test is best when used early in course, when lesions are vesicular
  - Vesicle should be unroofed for sampling
  - Typically takes 5 days for culture to grow

Diagnostic Testing for HSV

- Polymerase Chain Reaction
  - More sensitive then culture for specimens from genital ulcers
    - Low rate of false negatives
  - Much better at picking up virus in non vesicular state
  - Study compared woman with greater than 4 epsiodes of HSV
    - Subjects were tested with PCR and culture daily
      - Vulture detected lesions on average 3 of 17 days
      - PCR detected lesions on average 15 of 17 days

Cone RW et al. Extended duration of herpes simplex virus DNA in genital lesions detected by polymerase chain reaction J infect dis. 1991; 164(4):757.

Diagnostic Testing for HSV

- Direct Fluorescent antibody
  - Rapid
  - Type-specific
  - Sensitive
  - Specific
  - Reproducible

Diagnostic Testing for HSV

- Rapid Serologic Testing
  - Can be completed in 15 minutes at the point of care
- Serologic Testing
  - Sensitivity 97%
  - Specificity 98%
  - Positive Predictive Value 92%
  - Negative Predictive Value 99%

Rapid Testing

Diagnostic Testing for HSV

- Positive serology = indicated present or past infection
- IgM = Can **NOT** be used to discriminate between primary and recurrent
- IgG = Can **NOT** be used for diagnosis of active ulcer
- Positive HSV culture, in a HSV seronegative patient, does suggest primary infection

Diagnostic Testing for HSV

- Tzanck Smear
  - Low senitivity
  - Low specificity
  - Only helpful if positive

- Increasing order of Sensitivity
  - Type specific
  - Viral Culture (Dependent on sample quality and state of lesion)
  - DFA (Dependent on sample quality and state of lesion)
  - PCR
- Increasing order of cost (Research Rate)
  - DFA (Direct Fluorescence Antibody) ($37)
  - Type Specific serology ($40)
  - Viral Culture ($81)
  - PCR (Polymerase chain reaction) ($108)

15:00 Part 2

- She would best be treated with for initial outbreak with:
- A) Acyclovir 400 mg TID for 7-10 days
- B) Acyclovir 200 mg five times daily for 7-10 days
- C) Famciclovir 250 mg TID for 7-10 days
- D) Valcyclovir 1000 mg BID for 7-10 days

Primary HSV Outbreak RX

- **Similar** efficacy between the different *Medications*
- **Similar** efficacy between the different *Doses*
  - Most important is to start early in symptoms, most useful within 72 hours of symptoms
  - Still give to those past 72 hours
- Topical antivirals are of limited benefit and should be avoided

Primary HSV Outbreak RX

- Complains of difficulty urinating
  - Urinary retention secondary to sacral nerve root involvement
  - Pain with spreading labia
- In this clinical situation, either intermittent or indwelling bladder catheterization may also be required

15:50 (Part 3)

- She follows up for recurrence, you engage in continued education, but for the current symptoms you prescribe

A) Famciclovir 1000 mg q 12 hours for 2 doses (1day)
B) Acyclovir 800 mg three times daily for two days
C) Acyclovir 200 mg five times daily for five days
D) Acyclovir 800 mg twice daily for five days
E) Valacyclovir 500 mg twice daily for 3 days
F) Valacyclovir 1,000 mg once daily for 5 days (Off label)

HSV Recurrence RX

- **Similar efficacy** between the different Medications
- **Similar efficacy** between the different Doses

- Therefore decision is based on patient preferences

15:50 (Part 4)

- She returns for follow up, and is still devastated about have HSV-1. She is concerned about having to tell future sexual partners for the rest of her life. She states she has moved on to a new partner. She wants to know what can be done to prevent her from transmitting to her partner.

15:50 (Part 4)

- Which of the following strategies has **NOT** been shown to decrease HSV-1 transmission to non-seropositive partners?

- A) Valacylovir 500mg per day
- B) Consistent condom use
- C) Prevention of sun exposure
- D) avoidance of sexual activity during outbreak or prodromal periods

Valtrex

- Randomized placebo-controlled trial of 1484 immunocompetent, heterosexual, discordant couples
- Suppressive therapy led to a significant reduction in overall acquisition of genital HSV-2 infection in the uninfected partner (1.9 versus 3.6 percent, hazard ratio 0.52, 95% CI 0.27-0.99)
- Experimental subjects also were associated with fewer days of viral shedding (2.9 versus 10.8 percent of days) and fewer recurrences of genital herpes (0.11 versus 0.40 per month) in the infected source partner.

Corey L, Wald A, Patel R, Sacks SL, Tyring SK, Warren T, et al. Once-daily valacyclovir to reduce the risk of transmission of genital herpes. N Engl J Med. 2004;350(1):11.

Valtrex vs Acyclovir

- Similar ability to decrease viral shredding, therefore most use acyclovir since it's cheaper

Gupta R, Wald A, Krantz E, Selke S, Warren T, Vargas-Cortes M, et al. Valacyclovir and acyclovir for suppression of shedding of herpes simplex virus in the genital tract. J Infect Dis. 2004;190(8):1374. Epub 2004 Sep 20.

Valtrex Prophylaxis Continued

- Immunocompromised patients
  - - may not offer protection to partner
- HSV-1
  - Not well studied

Condoms

"Consistent condom use can decrease the risk of HSV-2 transmission to an uninfected partner by up to 96 percent, and is most effective in preventing transmission from men to women"

- Other sources state 50% reduction
- Exact amount of reduction not known, but take home point, at least 50% reduction

Wald A, Langenberg AG, Link K, Izu AE, Ashley R, Warren T, et al. Effect of condoms on reducing the transmission of herpes simplex virus type 2 from men to women. JAMA. 2001;285(24):3100.

Sunlight Exposure

- Placebo-controlled crossover trial compared sunscreen vs direct UV light exposure
  - Significant difference in outbreaks and shedding
- For Oral transmission, not associated with genital

Avoidance using prodromal and symptomatic periods will help with decreasing change of transmission

However landmark 1985 study looking at risk factors for transmission found that:

- 44% had contact with a lession
- 56% were with completely asymptomatic partners
- Many studies have shown viral shedding occurs even with no symptoms

Gregory J. Mertz; Asymptomatic Shedding of Herpes Simplex Virus 1 and 2: Implications for Prevention of Transmission, The Journal of Infectious Diseases, Volume 198, Issue 8, 15 October 2008, Pages 1098–1100.

After Hours

- You are traveling within the United States on a plane and have enjoyed 2 alcoholic drinks. Suddenly the Cabin crew reaches out for volunteers do to a medical Emergency.
- Would the "Good Samaritan Laws" cover you?
  A) Yes
  B) No

The Aviation Medical Assistance Act of 1998

- The Samaritan is medically qualified to perform the service
- The Samaritan acts voluntarily
- The Samaritan acts in good faith
- The Samaritan does not engage in gross negligence or willful misconduct
- The Samaritan does not receive monetary compensation
  - Seat upgrades and travel vouchers do not count as compensation

- An intoxicated provider is at risk of being categorized as engaging in "gross negligence and willful misconduct"
  - Therefore not covered

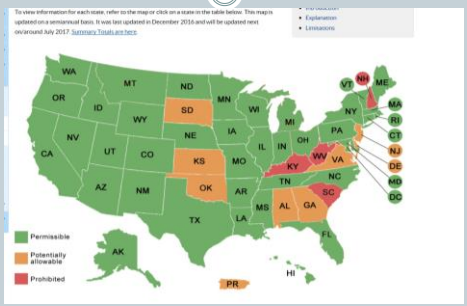
Inflight Medical Emergency

- Cabin Pressure is at 4000-8000 feet
  - Travelers with cardiopulmonary disease may experience a small drop of oxygen saturation on the steep part of the oxyhemoglobin dissociation curve
- Gas expansion by 30%
  - Inflatable medical devices
  - Middle ear (tympanic membrane rupture)
  - Pleural cavity (pneumothoarax)
- Low Humidity
  - Exacerbate pulmonary problems (Asthma)

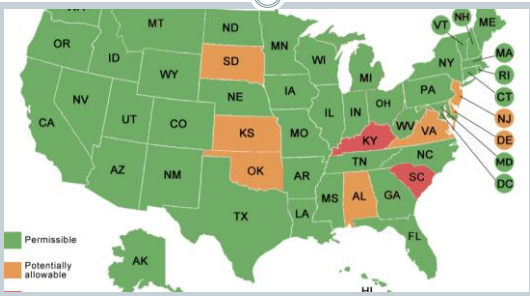
Emergency medical kit for commercial airlines

Medications	Equipment
Epinephrine 1:1000	Stethoscope
Epinephrine 1:10000 (can be dilution of epinephrine 1:1000)	Sphygmomanometer (electronic preferred)
Antihistamine*	Airways, oropharyngeal (appropriate range of sizes)
Dextrose 50% 50 mL (or equivalent)	Syringes (appropriate range of sizes)
Nitroglycerin tablets or spray	Needles (appropriate range of sizes)
Major analgesic, injectable or oral	IV catheters (appropriate range of sizes)
Sedative anticonvulsant*	Antiseptic wipes
Antipsychotic (eg, haloperidol)	Gloves (disposable)
Antiemetic, injectable or oral dissolvable (eg, ondansetron)	Sharps disposal box
Bronchial dilator inhaler with spacer	Urinary catheter with sterile lubricating gel
Atropine*	System for delivering intravenous fluid
Adrenocortical steroid, injectable or oral absorption equivalent*	Venous tourniquet
Diuretic*	Sponge gauze
Sodium chloride 0.9% (1000 mL recommended)	Tape adhesive
Acetylsalicylic acid for oral use	Surgical mask
Oral beta blocker	Flashlight and batteries (operator may decide to have one per aircraft in an easily accessible location)
List of medications - generic name, plus trade name if indicated on the item	Thermometer (non-mercury)
	Emergency tracheal catheter (or large gauge intravenous cannula)
	Umbilical cord clamp
	Bag-valve mask
	List of equipment
	Basic and Advanced Life Support cards

June 2016



July 2017



Thank You

Thank you (Before)

After

Box 4-3. Diagnostic Criteria for Premenstrual Dysphoric Disorder ^ **Box 2–1.** Diagnostic Criteria for Major Depressive Disorder

1. In the majority of menstrual cycles, at least five symptoms must be present in the final week before the onset of menses, start to improve within a few days after the onset of menses, and become minimal or absent in the week postmenses.
2. One(ormore)ofthefollowingsymptomsmustbepresent:
    1. Marked affective lability (eg, mood swings; feeling suddenly sad or tear- ful or increased sensitivity to rejection).
    2. Markedirritabilityorangerorincreasedinterpersonalconflicts.
    3. Marked depressed mood, feelings of hopelessness, orself-deprecating thoughts.
    4. Markedanxiety,tension,feelingsofbeingkeyedup,onedge,orboth.
3. One (or more) of the following symptoms must additionally be present, to reach a totally of five symptoms when combined with symptoms from Criterion B above.
    1. Decreased interest in usual activities (eg, work, school, friends, hobbies).
    2. Subjectivedifficultyinconcentration.
    3. Lethargy,easyfatigability,ormarkedlackofenergy.
    4. Markedchangeinappetite,overeating,orspecificfoodcravings.
    5. Hypersomniaorinsomnia.
    6. Asenseofbeingoverwhelmedoroutofcontrol.
    7. Physicalsymptomssuchasbreasttendernessorswelling,jointormuscle pain, a sensation of "bloating," or weight gain.

Note:
cycles that occurred in the preceding year.
The symptoms in Criteria A–C must have been met for most menstrual

4. The symptoms are associated with clinically significant distress or interfer- ences with work, school, usual social activities, or relationships with others (eg, avoidance of social activities; decreased productivity and efficiency at work, school, or home).
5. Thedisturbanceis notmerelyanexacerbationofthesymptomsofanother disorder, such as major depressive disorder, panic disorder, persistent depressive disorder (dysthymia), or a personality disorder (although it may co-occur with any of these disorders).

(continued)

Box 4-3. Diagnostic Criteria for Premenstrual Dysphoric Disorder *(continued)*

6. Criteria A should be confirmed by prospective daily ratings during at least two symptomatic cycles. (Note: The diagnosis may be made provisionally prior to this confirmation.)
7. The symptoms are not attributable to the physiologic effects of a substance (eg, a drug of abuse, a medication, or other treatment) or another medical condition (eg, hyperthyroidism).

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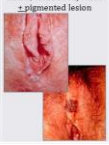
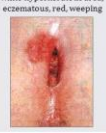
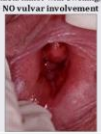
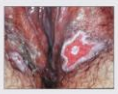
EXTENDED DIFFERENTIAL

	VIN (Differentiated Type)	Paget's Disease	Desquamative Inflammatory Vaginitis	Pemphigus Vulgaris
Age	Mainly older women	Usually 60 – 70 yo	Pre/post menopausal	50 – 60 yo seen most often
Symptoms	Itching >>> burning, pain, lump, edema, dyspareunia	Itching, >> burning/pain	Irritation, burning, dyspareunia + purulent vaginal discharge	Pain
Risk Factors	Smoking	Chronic scratching/rubbing	↓ Estrogen	Autoimmune
Key Features	Macroscopically visible lesion; Raised red/white ± pigmented lesion 	Well-demarcated **erythematous** patch with white hyperkeratotic area; eczematous, red, weeping 	Erythematous vaginal walls; introital redness ± extension to labia minor with swelling; **NO vulvar involvement** 	Blisters of keratinized skin; well-demarcated ulcers of mucosal skin 

11:00

- 27 yo G3P2012 presents for contraception counseling. She tells you she currently uses "Condoms sometimes", and had unprotected intercourse 9 days ago, and has "no idea" about her LMP as she doesn't keep track. Urine pregnancy test is negative…which of the following are appropriate
- A) Quick start of COC with follow up UPT in 2-4 wks
- B) Depo-provera with follow up UPT in 2-4 wks
- C) Levonoregesterol IUD
- D) Copper IUD

Per CDC

- "For contraceptive methods other than IUDs, the benefits of starting to use a contraceptive method likely exceed any risk, even in situations in which the health care provider is uncertain whether the woman is pregnant. Therefore, the health care provider can consider having patients start using contraceptive methods other than IUDs at any time, with a follow-up pregnancy test in 2–4 weeks. The risks of not starting to use contraception should be weighed against the risks of initiating contraception use in a woman who might be already pregnant."

- Most studies have shown **no** increased risk for adverse outcomes, including congenital anomalies or neonatal or infant death, among infants exposed in utero to COC or DMPA

Reasonably Certain Not Pregnant

- A health care provider can be reasonably certain that a woman is not pregnant if she has no symptoms or signs of pregnancy and meets any one of the following criteria:
  - is ≤7 days after the start of normal menses
  - has not had sexual intercourse since the start of last normal menses.
  - has been correctly and consistently using a **reliable method of contraception**
  - is ≤7 days after spontaneous or induced abortion
  - is within 4 weeks postpartum
  - is fully or nearly fully breastfeeding (exclusively breastfeeding or the vast majority [≥85%] of feeds are breastfeeds), amenorrheic, and <6 months postpartum
- +/- use of Upt if criteria is meet via clinical judgement

CDC Response to Condoms as Effective Method of Contraception

Dear Dr. Cook,

Thank you for contacting me and for your interest in our guidelines. The criteria to correctly and consistently use a reliable method of contraception is intentionally not further specified. It is meant to be left to the judgment of the provider. If you believe the patient has been using condoms every time reliably and correctly, then she satisfies that criteria and is unlikely to be pregnant. As you know, the effectiveness of condoms really depends on user adherence, but is high if couples use them reliably. The same is true for moderately effective methods like pills or patch, if a woman is using those reliably she also is unlikely to be pregnant and could initiate a new contraceptive method. I hope this makes sense, please let me know if you have further questions.

Best regards,
Naomi K. Tepper, MD, MPH
Medical Officer
Division of Reproductive Health
Centers for Disease Control and Prevention