Contraceptive challenges- Case Based Learning

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Disclosure slide

- Dr Quint or her spouse have no significant financial interests or other relationships with industry relative to topics that will be discussed.

Objectives

- At the end of this presentation the participant will be able to:
  - Use and interpret the new CDC 2016 criteria
  - Assess the risks and benefits of contraceptive prescribing for women with some chronic medical conditions
  - Discuss some of the changed contraceptive recommendations in the CDC 2016 guidelines

US Medical Eligibility Criteria for Contraceptive Use, 2016

- US Selected Practice Recommendations for Contraceptive Use, 2016 (US SPR)
- Adapted from World Health Organization (WHO) MEC
- Target audience: health-care providers
- Purpose:
  - to assist health care providers when they counsel patients about contraceptive use and to serve as a source of clinical guidance

http://www.cdc.gov/mmwr/volumes/65/rr/rr6503a1_appendix.htm

US Medical Eligibility Criteria: Categories

1	No restriction for the use of the contraceptive method for a woman with that condition
2	Advantages of using the method generally outweigh the theoretical or proven risks
3	Theoretical or proven risks of the method usually outweigh the advantages – not usually recommended unless more appropriate methods are not available or acceptable
4	Unacceptable health risk if the contraceptive method is used by a woman with that condition

http://www.cdc.gov/mmwr/pdf/rr/rr5904.pdf

Teens with medical issues and contraception

Age

Case presentation

- 14 year old comes with a request for an IUD for birth control
- Regular cycles
- Healthy
- 5’3 and 125 lbs

  - Assess her sexual relationship
  - Age of partner
  - Coercion/ voluntary
  - Assess her contraceptive knowledge

Would you give her a LNG-IUD?

Age

	IUDs	Implant	DMPA	POP	COC
Menarch-20	2	1	2	1	1
Over 20	1	1	1	1	1
Over 40-45	1	1	2	1	1

Case presentation

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Would you give her a LNG-IUD?

YES

Headaches

Headaches and birthcontrol

- 16 y/o G0P0 with frequent headaches presents for birth control, stating that she has been told she cannot have the pill due to her headaches
- History:
  - Headaches mostly in the week of her period, associated with N
  - She has photophobia with the headaches
- No medical problems, normal weight
- What are her contraceptive options?

Headache Types

Symptom	Migraine	Tension	Cluster
Location	Unilateral in 60 to 70 percent	Bilateral	Unilateral
Characteristics	Gradual in onset, crescendo pattern	Pressure or tightness which waxes and wanes	Rapid onset, deep, excruciating
Duration	4 to 72 hours	variable	30 min-3 hours
Assoc symptoms	N,V, photophobia, aura	none	Redness eye, stuffy nose

Migraines and Contraception

- Aura is a specific focal neurologic symptom defined as:
  - Usually visual (neurological)
  - Lasts 5-60 minutes
  - Flickering uncolored zig zag line progressing laterally, a lateral spreading scintillated scotoma with lost visual field.

Headaches

	IUDs	Implant	DMPA	POP	COC
Non-migraine	1	1	1	1	1
Migraine without aura	1	1	1	1	2
Migraine with aura	1	1	2	1	4

CHANGES for COC:

without aura <35: 3

without aura >35: 4

Migraines and Contraception

- Two-4 fold increased risk of ischemic strokes in women with migraines
- Smoking and HTN are also associated with strokes in women with migraines
- Additional stroke risk for women with migraines and COCP: 8/100,000 (age 20)-80/100,000 (age 40)

Our patient

- 16 y/o, cyclical migraines, no aura
- Options:
  - IUD/ Implant
  - Depo Provera
  - Continuous CHC
  - POP

Case

- 16 yo healthy girl to discuss contraception

- Relevant Family History:
  - Mom – breast cancer – age 46
  - MGM: cancer of ovary – age 65(deceased)

Case

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- Relevant Family History:
  - Mom – breast cancer – age 46
  - MGM: cancer of ovary – age 65(deceased)
- Genetic testing: mom positive BRCA2
  MGM not tested

Cancer risk with BRCA

Type of cancer	General population	BRCA1	BRCA2
Breast	12%	55-65%	45%
Ovary	1.4%	39%	11-14%

- BRCA1 (1:300)
- BRCA2 (1:800)

- 10% ovarian cancer, 3-5% of breast cancer linked to BRCA

Question

You recommend the following options:

A. Non-hormonal contraception Cu-IUD
B. Levonorgestrel containing IUD
C. Combined hormonal contraception (E+P)
D. A or B only
E. A, B or C

BRCA

	IUDs	Implant	DMPA	POP	COC
Fam h/o	1	1	1	1	1

Testing of Adolescent Women for Cancer Risk

- Testing not recommended for women ≤ age 18
- Genetic counseling highly recommended, after age 18!
- Current contraceptive needs are individualized
- Medical benefits of detecting BRCA 1 or 2 mutations in adolescent women not established

J Ped Adol Gyn 2004 J Genet Counsel 2007

Prescribing Contraception for Women with a Familial Cancer Risk

- Hormonal contraception
  - ↓ risk of ovarian cancer in general population using COC
  - patch and ring effects on ovarian cancer risk not known
  - do not change breast cancer risk

Girl with breast cancer family history

You recommend the following options:

A. Non-hormonal contraception
B. Levonorgestrel containing IUS
C. Combined hormonal contraception (E+P)
D. A or B only
E. A, B or C

Venous thrombo-embolism

Case

- 18 year old with a known paternal factor V Leiden mutation presents for contraceptive counseling
- Father had a pulmonary embolism at 42 years
  - diagnosed homozygous Factor V Leiden mutation
  - PGM had multiple DVTs and died of a stroke
- Patient been sexually active, using condoms and wants to know “contraceptive options”

Most common inherited thrombophilias

- Factor V Leiden Mutation
  - The most common inherited thrombophilia among Caucasians
  - Multifactorial inheritance, usually heterozygous
  - Caucasians 5%, Hispanic Americans 2%, African and Native Americans 1%, Asian Americans 0.5%
  - RR of DVT: 4-7 (heterozygous) ; 24-80 (homozygous)

    NEJM 1995;332:912; JAMA 1997;227:1305

- Prothrombin G2010 A mutation
  - Frequency of 0.7-6% in Caucasian population
  - Multifactorial inheritance
  - RR of DVT : 2(heterozygous) 4.8 (homozygous)
  - Rare in Asians/ African descent

Semin Hematol. 2007 April; 44(2): 62–69

Evidence

- VTE in teens is rare
  - 4/10,000 in COC users- 2.1/non users
  - Maybe slightly higher in ring/or patch (5-7)
- Teens with VTE on COC (n=38)
  - 97% had other risk factors: obesity, pers or fam h/o of thrombophilia
- Different progestins?
  - First and second generation may have sl lower RR of VTE

Lidegaard O, et al . BMJ 2011; 343: d6423
Lidegaard O, Nielsen LH, Skovlund CW, Løkkegaard E..
BMJ 2012; 344: e2990
Pillai P, Bonny AE, O'Brien SH.. J Pediatr Adolesc Gynecol 2013; 26 (3) 186-188
Samková A, Lejhancová K, Hak J, Lukes A.. Acta Med (Hradec Kralove) 2012; 55 (2) 78-82

Evidence

Thrombophilia testing?

- 400 women on COC with VTE (all ages)

heterozygous factor V Leiden (FVL)	**35%**
heterozygous prothrombin-20210A	5%
antithrombin deficiency	1.8%
protein S deficiency	1%
Protein C deficiency	0.8%

- If screen: over 92,000 FVL carriers (5%) would need to be identified and stopped from using COCs to prevent one VTE-related death ($300 million)

Middeldorp S, Meinardi JR, Koopman MM , et al.. Ann Intern Med 2001; 135 (5) 322-327

OCP and DVT

- Higher risk: age, smokers, obesity
- Obesity and DVT risk: RR 2-3
  - BMI 30-34: 6.1/10,000
  - BMI> 35: 10.5/10,000
  - As BMI increases less studies available

Trussell J. Et al .Contraception. 77(3):143-6, 2008
Pomp ER et al. BrJ Haematol. 139(2):289-96, 2007

DVT

	IUD-CU	IUD-LNG	Implant	DMPA	POP	COC
Personal H/O DVT	1	2	2	2	2	4/3
Known thrombogenic mutation	1	2	2	2	2	4

Do we test our 18 year old for factor V Leiden?

- Controversial:
  - If a first degree relative is tested and the test is positive, consider a non-estrogen containing options, before offering her testing.
  - Even if her testing is negative, that does not exclude an increased risk for DVT
  - Testing may be helpful for pregnancies

Baglin T et al. British Journal of Haematology. 149(2):209-20, 2010

Case

- 18 year old with a known paternal factor V Leiden mutation presents for contraceptive counseling
- Father had a pulmonary embolism at 42 years
  - diagnosed homozygous Factor V Leiden mutation
  - PGM had multiple DVTs and died of a stroke
- Options: no estrogen containing contraception

Case presentation

- 16 year old comes to your office with a request for birth control
- Healthy, no meds
- Fam Hx:
  - my mother had a blood clot clot in her leg
- Now what?

Case presentation

- Circumstances of her mothers DVT
  - When did it happen?
  - Was she admitted, treated etc.
- Any other family members with DVT or PE

- Familial risk of a clotting disorder?
  - Factor V Leiden

DVT

	IUD-CU	IUD-LNG	Implant	DMPA	POP	COC
Fam h/o (first degree)	1	1	1	1	1	2

Estrogen containing methods is ok

Ortho-Evra Patch

- 17 deaths reported by media
  - only 6 substantiated
- 4 million US users (2.2 million woman-yrs use)
- FDA Warning

  "Women who use Ortho Evra are exposed to about 60 percent more total estrogen in their blood than if they were taking a typical birth control pill"

- What is the risk of venous thromboembolism (VTE) in contraceptive patch users?
  - DVT:
    - One study found an increase compared to norgestimate (40.8 versus 18.3/100.000 women years)
    - 2 other studies found no increase
    - Latest study in 2010 found no cumulative increase

Grimes 2004, Jick SS, Hagberg KW, Kaye JA.Contraception. 2010 May;81(5):452-3

Drosperinone

- Initially 40 DVT in Europe in 2002
- Reevaluation of data showed issues with prescribing
- BMJ 2011 2 articles with comments

- In post marketing studies and newer cohort studies, comparable risk of DVT between different formulations

Sehovic N. Smith KP. Annals of Pharmacotherapy. 44(5):898-903, 2010

Case presentation

- 16 year old comes to your office with a request for birth control
- Healthy, no meds
- Fam Hx: “my mother had a clot in her leg”

- Mother had a DVT, while she had a fracture, rest of family history is negative

- Options: IUD, Nexplanon, COCP (first/ second generation , (POP)

Seizure Disorder

Case

- 16 year old with a seizure disorder comes in for contraception
- Seizures diagnosed at age 5
- Seizure frequency worsened with menses up to 20 seizures per day
- meds: Keppra, Acetazolamide, Ativan, Phenobarb

Her contraception options do NOT include

A. Norethindrone containing Prog only OCPs
B. DMPA 150 mg IM
C. Etonogestrel implant
D. Levonorgestrel containing IUS

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Seizures

	IUD-CU	IUD-LNG	Implant	DMPA	POP	COC
Phenytoin Carbamaze-pine Barbitu-rates Primidone Topiramate Oxycar-bazepine	1	1	2	1	3	3
lamotrigene	1	1	1	1	1	3

Options available for women taking anticonvulsants

- No evidence that CHC adversely affects seizure control
- CHC may decrease lamotrigine levels

- If non-enzyme inducing AED
  - Can use COCP

- With enzyme –inducing AED
  - Decrease effectivity of CHC

  - No data to support use of 50 mcg EE OCP
  - If CHC is desired, (but is Cat-3) prudent to use 30-35, not 20 mcg EE

  - Prog only pills not recommended
  - DMPA may assist seizure control

SYSTEMIC LUPUS ERYTHEMATOsUS

18 yo with SLE requesting birth control

- SLE dx 7 years ago, no kidney involvement, neg antiphospholipid antibodies
- No other chronic medical conditions
- Regular menses, 27-32 d intervals, 4-6 days flow
- Family History:
  - Negative for DVT and cardiovascular disease
- Physical Exam:
  - BP 135/78 P 75 Wt. 157 Ht. 64 in.
  - No exam abnormalities

Contraception Question

- Options
  - A. Combined Hormonal Contraceptives
  - B. Progesterone only pill/ LNG IUS
  - C. Neither A or B
  - D. Both A and B

SLE

	IUD-CU	IUD-LNG	Implant	DMPA	POP	COC
Pos or unknown antiphospholipid antibodies	1	3	3	3	3	4
Low platelets	3	2	2	2	2	2
immunosuppression	2	2	2	2	2	2
None of the above	1	2	2	2	2	2

Contraception Question

- Options
  - A. Combined Hormonal Contraceptives
  - B. Progesterone only pill/ LNG IUS
  - C. Neither A or B
  - D. Both A and B

OBESITY

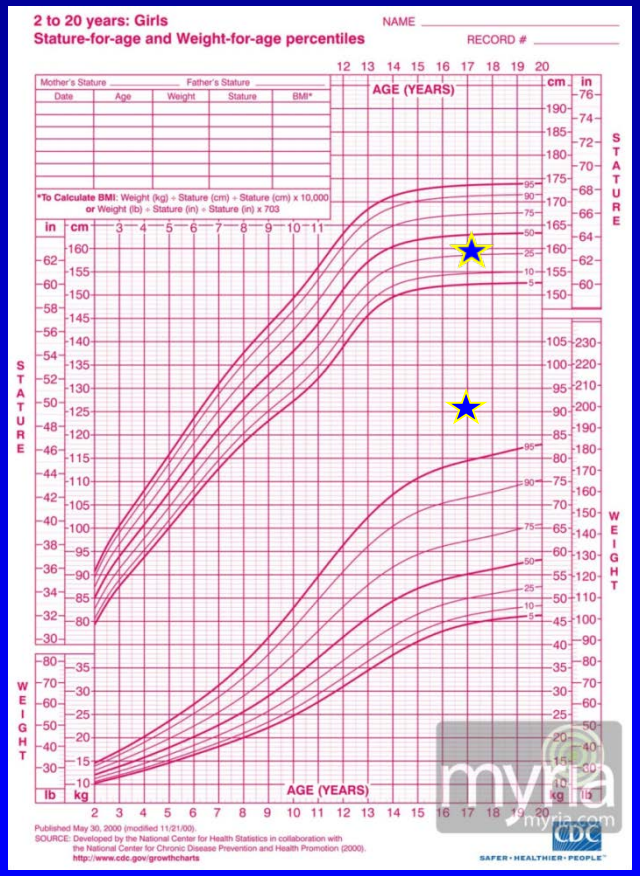
Obesity

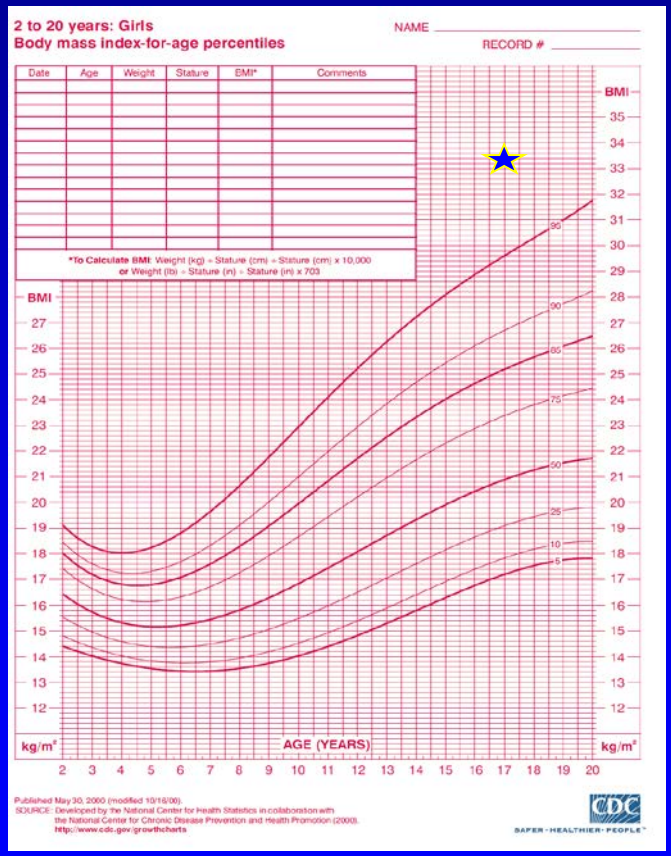
- 16 G 0 yo female requests contraception
- PMH: irregular menses (approx. 9/year)
- FH: mother with HTN, type II DM
  father's sister with PCOS

PE: BP 128/36,

Height 5'3, wt 200 lbs

Growth charts





BMI =33.7 (>95%)

OBESITY

	IUD-CU	IUD-LNG	Implant	DMPA	POP	COC
BMI >30	1	1	1	1	1	2
<18yrs and BMI > 30	1	1	1	2	1	2

The class 2 rating for COC is based on data that obesity is an independent risk factor for venous thrombosis (VTE) and case-control studies suggest that this risk is additive in users of estrogen-containing contraceptives

Contraception in obese women

- Most contraceptive research has excluded women >130% of ideal body weight

- Sexually active obese women of reproductive age were significantly less likely to use contraception than women of normal weight

Chuang CH, et al Womens Health Issues. 2005;15(4):167
Grimes Contraception 2005

Contraceptive Use in Obese Women

- Will always prevent more pregnancies than no contraception even if effectiveness is decreased
- Is less risky to obese women than pregnancy
- Serum drug levels in obese women may be insufficient to maintain contraceptive effects, but data are limited and inconsistent
- Body habitus may make procedure dependent methods more difficult
  - Use large or longer speculum
  - Place cut condom over the blades

Contraception 2009

Contraceptive Use in Obese Women

- DMPA in obese teens causes weight gain (as opposed to all other progestin only methods)
- Median medroxyprogesterone levels remained above the level needed to prevent ovulation, although estradiol levels fluctuated more in obese women than normal controls
- DMPA is effective regardless of obesity
- The persistence of ovulation suppression following discontinuation of DMPA is related to weight: women with lower body weights conceive sooner than women with higher body weights after discontinuing the drug.

Lopez LM et al. Progestin-only contraceptives: effects on weight. Cochrane Database Syst review 2013

Depression

Case

- 16 year old with heavy menses and need for birth control
- Menarche 15 months ago, irregular periods
- History of bipolar disorder
  - lithium, Abilify
- Started on 20 mcg COC with cycle control
- 2 months later very moody, stopped pills
- 6 months later periods irregular with heavy bleeding
- Options?

Depression

- 17% of women experience major depression during their lifetime
  - incidence highest during the reproductive years
- Data on OCP and depression are conflicting
- Study: COC, levonorgestrel-releasing IUD and DMPA use among women with depressive or bipolar disorders was not associated with worse clinical course of disease compared with no hormonal method use

Pagano HP et al. Contraception. 2016 Jun 27. pii: S0010-7824

Depression

	IUD-CU	IUD-LNG	Implant	DMPA	POP	COC
Depression	1	1	1	1	1	1

- Irritability and depression less common among ring users than COC users
- SSRI : MEC 1 for all contraceptives

Contraception 2007; 75 (1):27-31

Case

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- Menarche 15 months ago, irregular periods
- History of bipolar disorder
  - lithium, Abilify
- Started on 20 mcg COC with cycle control
- 2 months later very moody, stopped pills
- 6 months later periods irregular with heavy bleeding
- Options?
  - Any form of BC

CDC MEC what's new?

	IUD-CU	IUD-LNG	Implant	DMPA	POP	COC
St.John's Wart	1	1	2	1	2	2

- Limited evidence showing increased risk of ovulation and breakthrough bleeding raises concern for decreased contraceptive efficacy when COCs are co-administered with SJW.
- The pharmacokinetic evidence is mixed but suggests that SJW administration may be associated with weak to moderate induction of the metabolism of COCs.

Berry-Bibee EN, et al Contraception. 2016 Jul 18. pii: S0010-7824

CDC MEC what's new?

- MS: long term immobilization:
  - MEC 3 for CHC
- Superficial venous thrombosis:
  - MEC 3 for CHC
- Breastfeeding
  - <21 days PP: MEC 4 for CHC
  - 21-30 (42) days: MEC 3 CHC

New in EC

- Advise the woman to start or resume hormonal contraception no sooner than 5 days after use of UPA, and provide or prescribe the regular contraceptive method as needed.
- For methods requiring a visit to a health care provider, such as depo-medroxyprogesterone acetate (DMPA), implants, and IUDs, starting the method at the time of UPA use may be considered; the risk that the regular contraceptive method might decrease the effectiveness of UPA must be weighed against the risk of not starting a regular hormonal contraceptive method.
- The woman needs to abstain from sexual intercourse or use barrier contraception for the next 7 days after starting or resuming regular contraception or until her next menses, whichever comes first.
- Any nonhormonal contraceptive method can be started immediately after the use of UPA.
- Advise the woman to have a pregnancy test if she does not have a withdrawal bleed within 3 weeks.

QUESTIONS?