# CONTRACEPTION CONUNDRUMS

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PCRM SYMPOSIUM

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## DISCLOSURE

- Faculty: Nicole Todd
- Relationships with commercial interests:
  - Bayer – Received honoraria
- Employee of PHSA, VCH
  - Cross appointment within Department of Family Practice
- Off label medication list will be clearly marked with Asterix

DISCLOSURE – MITIGATING BIAS

- I will not be speaking on specific formulations of combined hormonal contraceptives, unless directly supported by research literature

## OBJECTIVES

- Recommend safe contraceptive options based on SOGC, WHO and CDC MEC
- Review **UPDATES** in use of combined hormonal contraceptives (pill, patch, ring)
  - Post-partum, Headaches, Obesity, VTE Risk, Mood
- Dispel myths for contraception in **peri-menopause**
  - Recommend safe contraceptive options based on CDC (2016) and FSRH (2017) guidelines

## CDC MEDICAL ELIGIBILITY FOR CONTRACEPTIVE USE (2016)

## CDC MEDICAL ELIGIBILITY CRITERIA FOR CONTRACEPTIVE USE

| Category | Recommendation |
|---|---|
| 1 | A condition for which there is no restriction for the use of the contraceptive method |
| 2 | A condition for which the advantages of using the method generally outweigh the theoretical or proven risks |
| 3 | A condition for which the theoretical or proven risks usually outweigh the advantages of using the method |
| 4 | A condition that represents an unacceptable health risk if the contraceptive method is used. This method should not be used |

## CHC AND POSTPARTUM

- **Breastfeeding**
  - Recommend exclusive breastfeeding until 6 months, continuing to 1 year
  - <21 days PP = Category 4
  - 21-30 days PP = Category 3
    - Consider Category 4 if: age>35 yr, previous VTE, thrombophilia, transfusion at delivery, PPH, peripartum cardiomyopathy, BMI >30, post C/S, pre-eclampsia, smoking
  - 30-42 days PP = Category 2
    - Category 3 if risk factors: age>35 yr, previous VTE, thrombophilia, transfusion at delivery, PPH, peripartum cardiomyopathy, BMI >30, post C/S, pre-eclampsia, smoking
  - >42 days PP = Category 2

CDC, 2016, Appendix A

## CHC, POSTPARTUM AND BREASTFEEDING

- Current evidence is conflicting regarding effects of COC on breastfeeding
  - Some low to fair quality studies demonstrated greater supplementation and decreased breastfeeding continuation in COC users
- No consistent effect on infant growth, illness, health outcomes
  - Some low to fair quality studies demonstrated decreased infant weight gain if COC initiated in the first 6 weeks postpartum
- **CDC 2016: discuss information regarding risks, benefits and alternatives in women who may be at risk for breastfeeding difficulties (previous history, medical conditions, perinatal complications, preterm delivery)**

CDC MEC, 2016
Tepper et al, 2015

## CHC AND POST-PARTUM

- **Not Breastfeeding**
  - <21 days PP = Category 4
  - 21-42 days PP = Category 2
    - Consider Category 3 if: age>35 yr, previous VTE, thrombophilia, transfusion at delivery, PPH, peripartum cardiomyopathy, BMI >30, post C/S, pre-eclampsia, smoking
  - >42 days PP = Category 1

CDC, 2016, Appendix A

## CONTRACEPTION POST-ABORTION

- CHC can be initiated within 7 days of first, and second trimester abortion, including immediately postabortion
- POPs can be started within 7 days, including immediately postabortion
- DMPA can be initiated within 7 days of abortion, including immediately postabortion
- IUD can be inserted immediately post-procedure for first and second trimester surgical abortion

NAF Guidelines 2018
CDC MEC 2016

## CHC AND MIGRAINES

- CDC:
  - **Migraines without aura = Category 2**
  - **Migraine with aura = Category 3**
  - In presence of **additional risk factors** (cigarette smoking, HTN, obesity, history of cardiovascular disease, DVT, PE), **CHC should be avoided**
  - Preference to CHC <35 mcg EE
- Additional thrombophilia screening, echo (patent foramen ovale), neuroimaging is not necessary
- If migraine w/w/o aura develops during CHC initiation, suggest switch to progestin only option (pill, DMPA, LNG IUD), or non-hormonal option
- Women with migraine w/w/o aura can safely use emergency contraception (LNG, ulipristal acetate, copper IUD)

CDC MEC, 2016
Sacco et al, 2107

## CHC AND OBESITY

- One large cohort study demonstrated an increased pregnancy rate in obese COC users compared to non-obese users
  - **However, larger cohort studies have not demonstrated an effect of BMI on COC efficacy**
- Obese women have lower peak hormone levels
  - The hormone trough levels are similar between obese and non-obese users
  - Similar ovarian suppression
- **SOGC: A small increase in contraceptive failure in women with BMI >30 cannot be excluded**
  - However, blood pressure is the ONLY examination and/or investigation that is required prior to initiation
  - Consider Extended Cycle (84/7), or cyclic 24/4 regimens as they may have lower failure rates.

Black et al, 2017

## CHC AND VTE

- Combined oral contraceptive users have 2-3X increase in VTE Risk
- The risk of VTE in the first year of COC use is higher than subsequent years
- Some retrospective and cohort studies have demonstrated increased risk of VTE in formulations with 3rd and 4th generation progestins
  - Prospective studies have NOT demonstrated increased risk of VTE associated with specific progestins
- **SOGC (2017): We should not alter prescribing practice based on progestin type**

Dinger J et al, 2014
Black et al, 2017

## HISTORY OF VTE, NOT ON ANTICOAGULATION

- High Risk for Recurrence (>1 risk factors)
  - Estrogen-associated VTE, Pregnancy associated VTE, idiopathic, known thrombophilia (including APAS), active cancer, recurrent VTE
  - Category 1 – Copper IUD
  - Category 2 – LNG IUD, DMPA, POP
  - Category 4 - CHC
- Lower Risk for Recurrence
  - No risk factors
  - Category 1 – Copper IUD
  - Category 2 – LNG IUD, DMPA, POP
  - Category 3 - CHC

## VTE ON ANTICOAGULATION FOR > 3 MONTHS

- Menstrual suppression
  - Risk/benefit discussion with patient regarding use of CHC, if low risk of recurrence
    - Hemorrhagic cysts
    - Heavy menstrual bleeding
- IUD
  - Insertion of IUD does not pose significant bleeding risk
  - LNG IUD may be used for treatment of heavy menstrual bleeding for women on anticoagulation

## PROGESTIN ONLY METHODS AND VTE

- POP does not increase VTE risk
- DMPA and VTE
  - Case control study (N=11 VTE) demonstrated VTE OR 2.19 (95% CI 0.66 to 7.26)[1]
  - Case-control DMPA (N=47) demonstrated VTE OR 2.2 (95% CI 1.3 to 4)[2]
  - Case-control DMPA (N=20) demonstrated VTE 3.6 (95% CI 1.8 to 7.1)[3]
  - Meta-analysis for VTE in DMPA users demonstrated OR 2.67 (95% CI 1.29-5.53)[4]
- **Further high quality research is needed**
  - **CDC (2016), WHO (2015) and SOGC (2016) do not consider VTE as a contraindication to DMPA use**

[1]WHO, 1998
[2]Bergendal et al, 2014
[3]van Hylckama et al, 2010
[4]Mantha et al, 2012

## CHC, DEPRESSION AND SUICIDE

- Large Danish cohort (1,061,997 women) demonstrated higher rate of first anti-depressant among COC users (RR 1.23, 95% CI 1.22-1.25)
  - This effect was higher amongst adolescents, and when compared to never users
  - Database study, whereby causation link cannot be attributed
- Large Danish cohort (475,802) demonstrated users of hormonal contraception had higher rate of suicide attempts and suicides (1.97, 95% CI 1.85-2.10, and 3.08, 95% CI 1.34-7.08 respectively)
  - This effect was higher amongst adolescents
  - Database study, whereby causation link cannot be attributed

Skovlund et al, 2017
Skovlund et al, 2018
Black et al, 2017

## CHC, DEPRESSION, AND SUICIDE

- **SOGC 2017: there are no high quality placebo controlled studies that demonstrated increased risk of mood changes**
  - Discuss mood symptoms at initial and follow up visits, consider switching to another formulation if symptoms.
- SOGC 2017: Women with PMDD: may benefit from CHC containing drospirenone (Yaz, Yasmin)

Skovlund et al, 2017
Skovlund et al, 2018
Black et al, 2017

## CONTRACEPTION BY AGE

NATIONAL SURVEY OF FAMILY GROWTH

- AGE IS A SIGNIFICANT PREDICTOR OF **NONUSE** OF CONTRACEPTION
- 24% OF 40-44 YEAR OLDS WERE **NOT USING** CONTRACEPTION
  - LOWER PERCEIVED RISK OF PREGNANCY

| | $OR_{adj}$ (95% CI) |
|---|---|
| 15-19 years | 1.3 (1.01-1.71) |
| 35-39 years | **2.0 (1.48-2.82)** |
| 40-44 years | **2.7 (1.90-3.74)** |

Mosher W. Contraception 2015; 92: 170-176

## PERI-MENOPAUSE: SPECIAL CONSIDERATIONS FOR CONTRACEPTION

- Contraception should be continued in sexually active women until:
  - Menopause – 1 year of amenorrhea, and/or FSH >40 (if using progestin-only methods)
  - In general, contraception can be discontinued by all women at the **age of 55**
- Many women experience perimenopausal menstrual dysfunction or vasomotor symptoms and hormonal contraceptive regimens can improve QOL in women with menstrual problems
- **Usually advised that the lowest dose of estrogen that gives adequate cycle control for each individual woman should be used**

Gebbie A. Menopause international 2010; 16(1): 33-37
Allen R. CMAJ 2013. 185(&): 565-573
RCOG: FSRH Clinical Guidance August 2017

## CONTRACEPTIVE CHOICE OVER 40

- Choice Influenced by:
  - Frequency of intercourse, natural decline in fertility, sexual dysfunction, menstrual dysfunction, desire for non-contraceptive benefits, completion of childbearing
  - Concurrent Medical Conditions:
    - Cardiovascular disease, diabetes, hypertension, hyperlipidemia, obesity, breast cancer, gynaecological cancer
    - Smoking >35 yrs

FSRH 2017

## CHC USE IN PERIMENOPAUSE

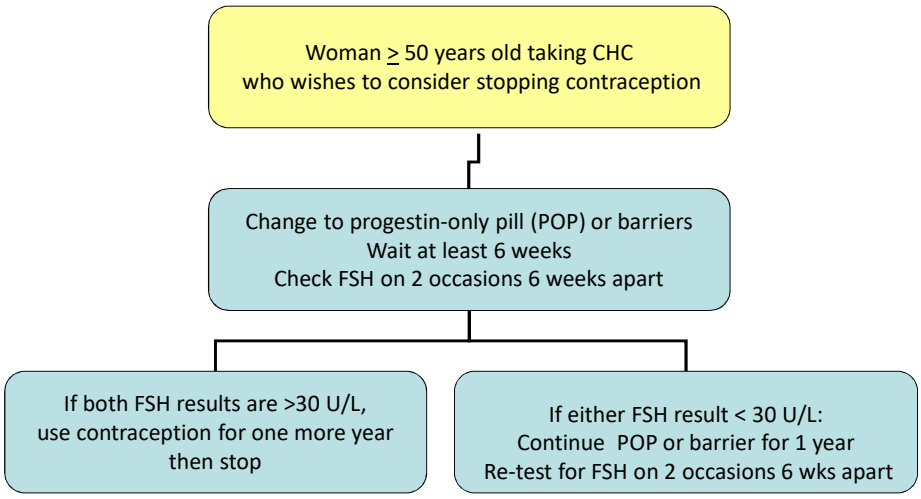
- **Advantages:**
  - May help to maintain BMD
  - Improved cycle regularity, decreased menstrual flow & pain
  - May reduce vasomotor symptoms
  - Protective effect against ovarian and endometrial cancer
- **Disadvantages**
  - May be a small additional risk of breast cancer
  - Increased risk of VTE
  - May be small increased risk of ischaemic stroke (look for other risk factors)

Lopez LM Cochrane Database Syst Rev 2009;2:CD006033;
Collaborative group on epidemiological studies on endometrial cancer. Lancet Oncol 2015; 16: 1061-70
Casper RF, Menopause 4:139 1997

## COMBINED HORMONAL CONTRACEPTIVES

Faculty of Sexual and Reproductive Healthcare
Clinical Guidance August 2017

## CONTRACEPTION IN PERI-MENOPAUSE – WHEN TO STOP CHC?




FSRH, 2017

## DMPA AND PERIMENOPAUSE

- No increased risk of VTE or MI
- No increased risk of breast cancer
- May improve vasomotor symptoms

- Decreased BMD during use due to relative hypoestrogenemia
  - Rapid decline in first year, then plateaus, then recovers after stopping
  - Postmenopausal women who have used DMPA , even up until menopause, **do not** have lower BMD compared to never users
- Annual review in women > 40 yrs, women >50 yrs should be counselled on alternate methods

Allen et al. CMAJ 2013. 185(7): 565-573
WHO Contraception. 1998;57(5):315-24
Mantha S. BMJ. 2012;345:e4944.
van Hylckama. Arterioscler Thromb Vasc Biol. 2010;30(11):2297-30
Strom BL, Contraception. 2004;69(5):353-60.

## INTRAUTERINE CONTRACEPTION

- Advantage
  - Effective long acting reversible contraception (LARC)
  - Decreased menstrual bleeding (LNG-IUS)
  - Decreased risk of endometrial cancer (LNG-IUS and Cu-IUD)

- Disadvantage
  - Increase dysmenorrhea or menstrual flow (Cu-IUD)
  - Risk of expulsion, infection, perforation
  - If failure occurs, risk of ectopic pregnancy

## LEVONORGESTREL RELEASING IUD

- If an LNG IUS (52mg, Mirena) is inserted after 45 years, it can be relied upon for contraception until the age of 55 years*
  - If amenorrheic, it should be removed after menopause
  - However, it cannot be relied upon for endometrial protection in the setting of HT

• LNG 52 mg is the only LNG IUD with indication for endometrial protection in the setting of Hormone Therapy

## COPPER IUD

- Copper IUD with >300 mm2 Copper that is inserted >40 yrs can remain until 1 year after LMP if a woman is >50 yrs
  - If a woman is under 50 yrs, the Copper IUD can remain until 2 years after LMP

- Women using IUD should have IUD removed once menopause is confirmed and/or contraception is no longer required
  - Case reports of actinomyocoses-like organisms, pyometria

**Annual review to discuss risks/benefits of method, changes to health**

FSRH 2017

**SUMMARY**

- CDC Medical Eligibility Criteria for Contraceptive Use App is **AMAZING**
- Women with migraines w/w/o aura should avoid CHC if additional risk factors present (cigarette smoking, HTN, obesity, history of cardiovascular disease, DVT, PE)
- Obese (BMI >30) who choose CHC should be counselled in extended cycle, and/or 4 day hormone free interval
- Risk of VTE in CHC users is overall low, but is highest in the first year
- CHC should not be avoided in women with mental health history, however healthcare providers should enquire about change in symptoms after CHC initiation
- Peri-menopausal women should be counselled on need for contraception, and should undergo yearly review due to health status changes

**THANK YOU!**

- ?Questions

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- Clinics:
  - Pediatric and Adolescent Gynaecology Clinic, Hematology Gynaecology (Pediatric and Adult), Complex Contraception Clinic, UBC IUD Clinic

| Name | Mechanism | Dose/SA | Dimensions | Duration | Cost (CAD $)** | Effectiveness % |
|---|---|---|---|---|---|---|
| Mirena (Bayer) | Levonorgesterol 52mg | 20 µg/day (but not measured at same time point or using the same calculation model as for Jaydess®) | Device: 32×32 mm Insertion Tube:4.75 mm | 5 years | 350-400 | >99. |
| Kylena (Bayer) | Levonorgesterol 19.5 mg | | Device: 28x30 Insertion Tube: 2.80 mm | 5 years | 325 | >99 |
| Jaydess (Bayer) | Levonorgesterol 13.5mg Silver ring for ID | 14 µg/day (24 days after placement) | Device: 28 × 30 Insertion Tube: 3.80 mm | 3years | 325 | >99. |
| Flexi T 300 (Trimedic) | Copper body | SA: 300 mm² | Device: 23mmx 28mm Insertion Tube: 3mm | 5 years | 90 | >99. |
| Flexi T +300 (Trimedic) | Copper body | SA: 300 mm² | Device: 28mmx 32mm Insertion Tube: 3mm | 5 years | 90 | >99. |

| Name | Mechanism | Dose/SA | Dimensions | Duration | Cost (CAD $)** | Effectiveness % |
|---|---|---|---|---|---|---|
| Flexi T +380 (Trimedic) | Copper body and arms | SA: 380 mm² | Device: 28mmx 32mm Insertion Tube: 3mm | 5 years | 90 | >99. |
| Nova T (Bayer) | Copper body | SA: 200 mm² | Device:32mmx 32mm Insertion Tube: | 2.5 years | 180 | >99. |
| Mona Lisa N (PACE) | Copper body | SA: 300 mm² | Device:23x 29.1mm Insertion Tube: | 3 years | 50-75 | >99. |
| Mona Lisa 5 (PACE) | Copper body | SA: 380 mm² | Device:31.8x 31.9mm Insertion Tube: | 5 years | 50-75 | >99. |
| Mona Lisa 10 (PACE) | Copper body and arms | SA: 380 mm² | Device: 31.85x 35.85mm Insertion Tube: | 10 years | 75 | >99. |

| Name | Mechanism | Dose/SA | Dimensions | Duration | Cost (CAD $)** | Effectiveness % |
|---|---|---|---|---|---|---|
| Liberte UT380 standard (Medisafe) | Copper | SA: 380 mm² | Device: 35.4 mm x 32mm Insertion Tube: | 5 years | 80 | >99. |
| Liberte UT380 short (Medisafe) | Copper body | SA: 380 mm² | Device:28.4mmx 32mm Insertion Tube: | 5 years | 80 | >99. |
| Liberte TT380 standard (Medisafe) | Copper body and arms | SA: 380 mm² | Device: 34mmx 29.9mm Insertion Tube: | 10years | 80 | >99. |
| Liberte TT380 short (Medisafe) | Copper body and arms | SA: 380 mm² | Device: 29.5x23.2mm Insertion Tube: | 5 years | 80 | >99. |
| SMB TCu 380A | Copper body and arms | SA: 380 mm² | Device :32 x 36mm | 10 years | ? | >99. |

**THANK YOU!**