Dr John Short
Obstetrician and Gynaecologist
Christchurch Women’s Hospital
Christchurch

Sunday, June 12, 2016
(Room 12)

8:15 - 9:10  WS #195: Contraception and Infertility Update for GPs
9:20 - 10:15  WS #207: Contraception and Infertility Update for GPs (Repeated)
Contraception and Infertility Update

John Short
Obstetrician and Gynaecologist

Oxford Women’s Health

&

Canterbury District health board
Fertility
History

- Prev pregnancies
- Time trying to conceive
- Age
- Smoking and alcohol
woman

- Menstrual/gynae history
- Previous investigations/treatment
man

- Testicular issues
- Genetic/congenital issues
- Erectile dysfunction
examination

- BMI, pelvic exam, STI screen
- Male if any history
investigations

- Semen (rpt after 4-6/52 if abnormal)
- FSH, Oestrogen day 2-4
- D21 progesterone (NB irregular cycles)
- Ovulation disorder bloods
  - Prolactin, fsh, fai, testosterone, SHBG, TFTs
Tubal patency
- HSG or Ultrasound
- Investigate/refer early if issues known or age an issue
- Lifestyle advice (smoking, weight, boxer shorts)
- menevit
- Rubella
Funding criteria

- BMI 18-32
- Non/ex-smoker >3/12
- Age <40
- <2 children
PCOS

- Irregular/absent ovulation
- Clinical / biochemical androgen xs
- Polycystic ovaries on USS
management

- Weight loss
- According to symptoms
- Remember long term metabolic risks
Any questions?
Letrozole

- Aromatase inhibitor
- Ovulation induction
- Comparable to clomiphene
- Esp in PCOS
- Reduce multiple gestations
PCOS

- Weight loss improves fertility outcome
- Clomiphene and metformin
- Letrozole
fibroids

- Submucous fibroids
- Other fibroids
NSAIDs
BPA
phthalates

- Bodywash, shampoo, conditioner, deodorant, etcetera
Sperm quality

- No longer deteriorating
Recurrent miscarriage

- Progesterone unhelpful
Anti-mullerian hormone

- Marker for ovarian reserve
- Not ‘black and white’
- Can predict treatment response
ICSI

- Not better than IVF
Cryopreserved ovarian tissue
Contraception saves lives

- 50 million pregnancies terminated worldwide per year
- 50,000 women die as a result
- Up to 50,000 more deaths may be prevented
- Other health/societal benefits
- TOP rates have declined in developed countries – from 46 to 28 per 1,000 women

- TOP rates have remained virtually static in developing countries – with a change from 39 to 37 per 1,000 women

- Investments in family planning are reducing TOP rates

- Rates of TOP differ little in countries where it is not allowed under any circumstances other than a threat to the pregnant woman’s life (37 per 1,000 women) compared with countries where it is legally available on request (34 per 1,000 women)

- Denying women access to TOP does not decrease rates and results in unsafe TOPs and in unwanted children being born

- 15 million unmarried women obtain a TOP per year

- In the UK last year nearly 40% of all women having a TOP had a previous TOP

- There are over 1 million TOPs performed in the United States each year
(Periodic abstinence)
(Mechanical barriers)

Short term contraceptive methods
LARCs (hormonal and non hormonal)
Surgical sterilization
Emergency contraception
1. use in any circumstances

2. generally use the method. Benefits outweigh risks (actual or theoretical)

3. use not usually recommended unless other methods not acceptable. Proven risks outweigh benefits

4. Do not use. Risk is unacceptable
<table>
<thead>
<tr>
<th>Contraception Method</th>
<th>Pregnancy Rate - Typical Use, %</th>
<th>Pregnancy Rate - Perfect Use, %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short-term contraception methods</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponge</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td>- in parous women</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>- in nulliparous women</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>Female</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>Diaphragm</td>
<td>12</td>
<td>6</td>
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<tr>
<td>Combined pill and progestin-only pill</td>
<td>9</td>
<td>0.3</td>
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<tr>
<td>Ring</td>
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<tr>
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<tr>
<td><strong>LARC</strong></td>
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<tr>
<td>Copper IUD</td>
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<td>0.6</td>
</tr>
<tr>
<td>Levonorgestrel IUS</td>
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<td>0.2</td>
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<tr>
<td>Hormone implants</td>
<td>0.05</td>
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<tr>
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<td></td>
</tr>
<tr>
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<td>0.5</td>
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<tr>
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Contraception: Short-term contraception, LARC (Long-Acting Reversible Contraception), Sterilization.
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Short term contraception

- COC
- Depo
- POP
Risks lowest with Low dose ethinylestradiol (20) +LNG

Reduced menstruation means increased continuation. Continuous use recommended. No risk of harm.
Medication considerations

- Proton pump inhibitors
- Enzyme inducing drugs
- Teratogenic medication
- Bone mineral density concerns
- Concerns re lipids (not POP or implant)
- Cervical cancer prognosis (POP/implant also)
LARCs

- Long acting reversible contraception
  - Hormonal
    - Implant
    - Mirena IUS
    - Jaydess IUS
  - Non-hormonal
    - ‘Copper’ IUD
LARC Has Higher Efficacy Than Other Forms of Contraception

Unintended pregnancy rate within 1 year of typical use[^a]

<table>
<thead>
<tr>
<th>Method</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral contraception</td>
<td>9%</td>
</tr>
<tr>
<td>Hormonal patch</td>
<td>9%</td>
</tr>
<tr>
<td>Ring</td>
<td>9%</td>
</tr>
<tr>
<td>Injectable contraception</td>
<td>6%</td>
</tr>
<tr>
<td>Sterilization</td>
<td>&lt;0.5%</td>
</tr>
<tr>
<td>Subdermal implant</td>
<td>&lt;0.1%</td>
</tr>
<tr>
<td>LNG-IUS</td>
<td>0.2%</td>
</tr>
<tr>
<td>IUC</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

[^a]: Increasing effectiveness

- Effectiveness of LARC is independent of user age or compliance[^a-b]

[^a]: Trussell J. *Contraception*. 2011;83:397–404.
- 1st line option for most women
- BMI, age, Parity, diabetes, smoking, HIV, TOP
- More effective
  - reduced user error
  - reduced discontinuation
- 75% women desire oestrogen free contraception
- Non contraceptive benefits
## LARC-s

<table>
<thead>
<tr>
<th>Copper IUD</th>
<th>LNG-IUS</th>
<th>Implant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevents fertilization</td>
<td>Prevents fertilization</td>
<td>Prevents fertilization</td>
</tr>
<tr>
<td>May prevent implantation</td>
<td>May inhibit ovulation</td>
<td>Inhibits ovulation</td>
</tr>
</tbody>
</table>
Intrauterine contraception

- Expulsion
  - copper IUD 3-5%
  - LNG-8 0.4%
  - LNG-20 1.6%

- Increased following birth/TOP
Perforation

-0.4/1000 – 1.4/1000

Increased risk with low parity, breast feeding, proximity to birth/TOP

Relatively benign problem
# Bleeding patterns

<table>
<thead>
<tr>
<th>Copper IUD</th>
<th>Levonorgestrel-IUS</th>
<th>Implant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavier bleeding and/or dysmenorrhea likely</td>
<td>Irregular bleeding and spotting common in first 6 months</td>
<td>Irregular bleeding common in first 6 months</td>
</tr>
<tr>
<td></td>
<td>Oligomenorrhea or amenorrhea likely by the end of first year</td>
<td>Bleeding patterns likely to change during implant use</td>
</tr>
<tr>
<td></td>
<td>Dysmenorrhea may be reduced</td>
<td>Bleeding may stop, become more or less frequent, or be prolonged</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dysmenorrhea may be reduced</td>
</tr>
</tbody>
</table>
Myths

- Infection risk
  - IUD removal not necessary in PID

- Ectopic risk

- Nulliparity
  - (NB Mirena vs Jaydess)
Adolescents

- ‘Fit and Forget’
- No specific restrictions
LARC for Women > 40 Years of Age

UKMEC Age-Based Criteria for Contraceptive Use

<table>
<thead>
<tr>
<th>Contraceptive method</th>
<th>CHC*</th>
<th>POP</th>
<th>Progestogen-only implant</th>
<th>Injectable 18-45</th>
<th>Injectable &gt;45</th>
<th>Copper IUD</th>
<th>LNG-IUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age range (years)</td>
<td>≥40</td>
<td>≥40</td>
<td>≥40</td>
<td>18-45</td>
<td>&gt;45</td>
<td>≥40</td>
<td>≥40</td>
</tr>
<tr>
<td>UKMEC category†</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1/2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

*Combined oral contraception, transdermal patch, combined vaginal ring
†Categories: 1 – no restriction; 2 – advantages outweigh the risks; 3 – risks outweigh advantages (clinical judgement needed); 4 – unacceptable health risk

Adapted from UK Medical Eligibility Criteria for Contraceptive Use, April 2016.
Offering LARC after 1st trimester abortion leads to a greater reduction repeat abortions than with other forms of contraception\textsuperscript{[a]}

There is no increased risk for expulsion or adverse events with immediate compared to delayed LARC insertion\textsuperscript{[b]}

Pregnancy

Puerperal sepsis

Immediate use after septic abortion

Distorted uterine cavity

Unexplained vaginal bleeding

Cervical or endometrial cancer (awaiting treatment)

Breast cancer (LNG IUS only)

Trophoblastic disease

PID or STI (current or past 3 months)

AIDS, not on antiretroviral therapy

Pelvic tuberculosis
Reduced efficacy >60kg
Replace 4 yearly
Bleeding with hormonal contraception

- Warn patient
- Good history
- STI screen, cervical screen, pregnancy test
- <3 months – may settle

- ? Endometrial biopsy / pelvic ultrasound scan
- Take a break
- Increase oestrogen
- Mefenamic acid
- Add coCP if on depo / implant / mirena
- Ring better than pill
- Oestradiol better than ethinyloestradiol
- POP- 2 pills day? No evidence
Surgical family planning

- benefits of salpingectomy

- Essure hysteroscopic sterilization
  - HSG at 3 months
  - concerns re nickel allergy
A doctor uses a device called a hysteroscope to insert a coil into each fallopian tube via the vagina, cervix and uterus. No incisions are required.
Emergency contraception

- IUD better than hormonal

- Insert IUD within 5 days
  Offer STI screening

- LNG 1.5mg
  take within 72hrs
  Increased failure >70kg
  Double dose if taking enzyme-inducers
  Unaffected by other antibiotics
Patient Case 1

- Woman aged 22, no children
- BMI 35; sedentary lifestyle; poor diet
- No relevant family history
- Needs contraception and is interested in the combined pill

Do you prescribe the pill?
Do you refer her to a specialist?
# Contraception and Obesity

<table>
<thead>
<tr>
<th>BMI 30-34 kg/m²</th>
<th>Copper IUD</th>
<th>IUS</th>
<th>Implant</th>
<th>Injectable</th>
<th>CHC</th>
<th>POP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BMI ≥35 kg/m²</th>
<th>Copper IUD</th>
<th>IUS</th>
<th>Implant</th>
<th>Injectable</th>
<th>CHC</th>
<th>POP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

- CHC is category 3 for this patient[^a-b]
- Increased risk for VTE with CHC[^c]
- Injectables are associated with weight gain[^d]

[^a]: UKMEC, 2016.
Contraception and Obesity (cont)

- LARC offer benefits for obese women
- LNG-IUS protects endometrium and reduces menstrual blood loss
- No evidence of weight gain with LARC
- Important to discuss lifestyle changes with obese women using LARC, in particular reducing alcohol intake

NICE website.
Patient Case 2

- Woman aged 42, 3 children
- Needs contraception, as family complete
- T2DM for 5 years; mild nephropathy

Which contraceptive methods are most suitable?
Contraception and T2DM

- **CHC**
  - Minimal effect on insulin resistance
  - Dose dependent
  - LNG may have more of an adverse effect
  - Insulin sensitivity not affected by vaginal rings
  - Estradiol pills may have minimal metabolic effects

- **Progestogen contraceptives**
  - Minimal effects on insulin resistance
  - No effect on glucose intolerance
  - More insulin resistance with injectables?

UK MEC, 2016.
Contraception and T2DM (cont)

<table>
<thead>
<tr>
<th></th>
<th>Copper IUD</th>
<th>IUS</th>
<th>Implant</th>
<th>Injectable</th>
<th>CHC</th>
<th>POP</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of gestational diabetes</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Nonvascular disease</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Nephropathy, retinopathy, neuropathy</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Other vascular disease</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

- CHC is category 3 for this patient
- POP, implant, copper IUD, and IUS are suitable
- Injectable not ideal due to possible increase in insulin resistance

UK MEC, 2016.
Patient Case 3

- Woman aged 38, recently had her 2nd child
- Controlled hypertension on medication
- Smoker - 20 cigarettes per day
- Family history of CVD
- Wants to start taking COC again

Should you prescribe COC?
Contraception and CV Risk Factors

- Use clinical judgement to determine the suitability of contraceptive methods, especially CHC
  - This woman has multiple CV risk factors

- Blood pressure

  CHC
  - Negligible effect on BP
  - COC users have higher BP than non-users
  - ↑BP increases risk of stroke and MI

  Progestogen methods have no effect on BP

UKMEC, 2016
WHO Medical eligibility for contraceptive use, 2015.
Conclusion

- Women with medical problems:
  - Are often denied contraceptive choice from ignorance
  - Rely on less effective methods
- Involvement of a "specialist" is key
- "Labelling" women with specific diseases is unhelpful
  - Individual women need individual attention and individual choices
resources

- www.fsrh.org