Obesity, associated illness and managing contraception

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Disclosures

• None
Objectives

• **Inspire** you to think about the unique contraceptive care for obese women in your practice

• Review the risks of **pregnancy** in obese women

• Review the CDC’s **medical eligibility criteria** for management of contraceptive issues in women with bariatric surgery

• Describe techniques for counseling patients about **weight gain and contraception**
Case: Jane

Jane is a healthy 26yo who presents to your office to discuss contraception. Her BMI is 44.

What implications does her obesity have on her contraceptive options?
Obese women face contraceptive challenges

• Studies generally excludes women > 130% ideal body weight

• Usually approached as “one-size-fits all”

• Obese women access health care less

Bajos, *BMJ*; 2010
Shaw, *Best Pract Res Clin Endocrinol Metab*; 2013
Obese women have sex

While obese women are more likely to have slightly lower baseline fecundity...

...sexual behavior does not vary by BMI (intercourse frequency, number of lifetime partners, age at coitarche, sexual orientation)

- More likely to rely on less effective methods
- Not use contraception

Kaneshiro, *Obstet Gynecol*; 2008
Case: Jane

In evaluating Jane for contraception, you find that her pregnancy test is positive.

If Jane desires to continue the pregnancy, how does her BMI affect her pregnancy risks?
Obese women have a higher risk of congenital anomalies in pregnancy

<table>
<thead>
<tr>
<th>Congenital Anomaly</th>
<th>Increased Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neural tube defects</td>
<td>OR, 1.87; 95% CI, 1.62–2.15</td>
</tr>
<tr>
<td>Spina bifida</td>
<td>OR, 2.24; 95% CI, 1.86–2.69</td>
</tr>
<tr>
<td>Cardiovascular anomalies</td>
<td>OR, 1.30; 95% CI, 1.12–1.51</td>
</tr>
<tr>
<td>Septal anomalies</td>
<td>OR, 1.20; 95% CI, 1.09–1.31</td>
</tr>
<tr>
<td>Cleft palate</td>
<td>OR, 1.23; 95% CI, 1.03–1.47</td>
</tr>
<tr>
<td>Cleft lip and palate</td>
<td>OR, 1.20; 95% CI, 1.03–1.40</td>
</tr>
<tr>
<td>Anorectal atresia</td>
<td>OR, 1.48; 95% CI, 1.12–1.97</td>
</tr>
<tr>
<td>Hydrocephaly</td>
<td>OR, 1.68; 95% CI, 1.19–2.36</td>
</tr>
<tr>
<td>Limb reduction anomalies</td>
<td>OR, 1.34; 95% CI, 1.03–1.73</td>
</tr>
</tbody>
</table>
Obese women have a higher risk of pregnancy loss

<table>
<thead>
<tr>
<th></th>
<th>Maternal BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Fetal death</td>
<td>76</td>
</tr>
<tr>
<td>Stillbirth</td>
<td>40</td>
</tr>
<tr>
<td>Perinatal death</td>
<td>66</td>
</tr>
<tr>
<td>Neonatal death</td>
<td>20</td>
</tr>
<tr>
<td>Infant death</td>
<td>33</td>
</tr>
</tbody>
</table>
Obese women have more pregnancy-related complications

- Gestational diabetes
- Cardiac dysfunction
- Deep Venous Thrombosis
- Cesarean delivery
- Sleep apnea
- Preeclampsia

ACOG PB 156; 2015
Case: Jasmine

A 22 year old presents to discuss contraception. Her BMI is 32. She has lost 60 pounds since her roux-en-y gastric bypass surgery 2 years ago.

How does her history of bariatric surgery impact her contraceptive care?
Types of bariatric surgery

- Roux-en-y gastric bypass
- Gastric sleeve
- Gastric band
Pregnancy after bariatric surgery

• Recommended to wait 12-18 months
  – American Association of Clinical Endocrinologists, the Obesity Society, and the American Society for Metabolic & Bariatric Surgery

• Weight loss enhances fertility

• Contraception strongly encouraged
  – Pregnancy rates in post op adolescents 2x higher than general adolescent population

• 41% of postop women have unprotected intercourse in first year

Menke, Obstet Gynecol; 2017
Contraception

• Ideally a component of preoperative evaluation

• Evidence around OCP efficacy limited

  • Observational study of 9 women on OCPs
  • 2 of the 9 women who continued OCPs became pregnant
  • Both had chronic diarrhea

  • Serum levels of 7 women after jejunoileal bypass showed lower plasma progestin levels
  • Levels did not correlate to ovulatory markers
  • Clinical significance unknown

Gerrits, *Obes Surg*; 2003
• Theoretical risk that oral absorption of pills is altered after malabsorptive procedures
• Other methods acceptable
Other contraceptive considerations

• No physiologic reason that condoms, withdrawal, NFP would have less efficacy in obese women

• Fitting a diaphragm can be more challenging

• NFP/fertility awareness will likely be less successful in women with irregular cycles/oligomenorrhea
Case: Kathy

Kathy is a 31 yo presenting with irregular cycles. She heard that birth control can help with her periods. Her BMI is 36.

What contraceptive methods would Kathy gain non-contraceptive benefit from?
Obese women are at higher risk of endometrial hyperplasia/cancer

• Hyperestrogenic state
  – Peripheral conversion of androstenedione to estrone and estradiol in adipose tissue

• Increased rates of anovulation
  – Higher rates of AUB, endometrial hyperplasia, endometrial cancer

• Contraceptive methods can be used to offset the risks of prolonged anovulation

Renehan, Lancet; 2008
IUDs decrease the risk of endometrial cancer

• Causality of copper IUD relationship unclear
  – Sterile inflammatory environment?

• LNG-IUD
  – Reverse 90% of simple endometrial hyperplasia
  – Endometrial protection

• Non-contraceptive benefits in obese women

ACOG PB 73; 2006
Curtis, Contraception; 2007
Gallos, Am J Obstet Gynecol; 2008
Case: Samantha

Samantha is a 28 year old interested in starting contraception, but is concerned about weight gain.

How do you counsel her about weight gain and contraception?
Age-related weight gain

• Young American adults gain 0.9 kg per year
• Maximum rate of increase age 18-25 years

• Normal aging → some gain
• Large part due to imbalance in energy intake to energy expenditure

• First year of college is a time of rapid weight gain
• Freshman weight gain 5.5 times higher than general population weight gain

Hill, *Science*; 2003
Anderson, *Eating Behav*; 2003
Mihalopoulous, *J Am Coll Health*; 2008
IUDs, CHCs, POPs = no weight gain

- Cochrane review
- Good evidence that shows that there is no weight gain associated with these methods

Ronnerdag, Acta Obst Gynecol Scand; 1999
Gallo, Cochrane Database Syst Rev; 2012
Implant & weight gain

• Trial of normal weight women
  – 12% reported weight gain
  – 2% reported as a reason for discontinuation

• Actual weight gain 1.6 kg over 3 years

• CHOICE Project
  – Included overweight/obese women
  – 2.1 kg over 12 months
  – Not significantly higher than weight gain observed with copper IUD

Croxatto, *Human Reprod*; 1999
Vickery, *Contraception*; 2013
DMPA and weight gain

• RCTs do not show weight gain \(^1,^2\)

• Observational studies have reported overweight/obese adolescents gain more weight with DMPA than OCPs \(^3-^6\)

4. Clark, Int J Obes; 2005
5. Bonny, J Pediatr Adolesc Gynecol; 2004
6. Mangan, J Pediatric Adolesc Gynecol; 2002
Patients are worried

- 97 adolescents starting DMPA
- 1 in 5 had early weight gain (>5% in 6 months)
- Early weight gain associated with BMI increase at 12 and 18 months

Weight gain at 6 months on DMPA predicts who will gain excessive weight

Bonny, Obstet Gynecol; 2011
## US SPR: Exams and tests before initiation

<table>
<thead>
<tr>
<th>Examination or test</th>
<th>Contraceptive method and class</th>
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<tbody>
<tr>
<td></td>
<td>LNG and Cu-IUD</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>C</td>
</tr>
<tr>
<td>Weight (BMI)</td>
<td>__†</td>
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<tr>
<td>Clinical breast examination</td>
<td>C</td>
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<tr>
<td>Bimanual examination and cervical inspection</td>
<td>A</td>
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<tr>
<td>Laboratory test</td>
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<tr>
<td>Glucose</td>
<td>C</td>
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<tr>
<td>Lipids</td>
<td>C</td>
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<tr>
<td>Liver enzymes</td>
<td>C</td>
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<tr>
<td>Hemoglobin</td>
<td>C</td>
</tr>
<tr>
<td>Thrombogenic mutations</td>
<td>C</td>
</tr>
<tr>
<td>Cervical cytology (Papanicolaou smear)</td>
<td>C</td>
</tr>
<tr>
<td>STD screening with laboratory tests</td>
<td>__§</td>
</tr>
<tr>
<td>HIV screening with laboratory tests</td>
<td>C</td>
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</tbody>
</table>
Counseling

• “I’m sorry your friend had that experience. Based on what I know about birth control pills, I don’t anticipate that you would gain weight”

• “For many women, the potential of gaining weight is a deal-breaker for some types of birth control. Let’s keep that in mind as we talk about what methods might work for you”

• “The honest truth is that we all tend to gain weight as we get older. I don’t expect that your weight would be any different in 2 years with or without the IUD”
Contraception & weight gain

- **Pill/patch/ring**: none or age-expected change\(^1,2,3,6\)
- **LNG-IUD**: age-expected wt gain\(^4\)
- **Implant**: minimal if any effect\(^5\)

### DMPA

<table>
<thead>
<tr>
<th>Description</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average 5-6 kg over 3-5yrs(^3,6)</td>
<td>Adolescents: more pronounced weight gain(^5)</td>
</tr>
<tr>
<td>Baseline BMI: No assoc for adolescents(^8)</td>
<td>Weight gain at 6mo (&gt;5%) predicts future weight gain(^8)</td>
</tr>
</tbody>
</table>

References:
1. O’Connell 2001 *Contraception*
2. Gallo 2004 *Obstet Gynecol*
3. Berenson 2009 *AJOG*
5. Darney 2009 *Fertil Steril*
6. Beksinka 2010 *Contraception*
7. Pantoja 2010 *Contraception*
8. Bonny 2010 *Contraception*
A 37 year old presents to discuss sterilization. Her BMI is 44. How does her BMI impact your contraceptive counseling?
Sterilization

• Efficacy unchanged by BMI
• Performing procedure may be more challenging in obese women
  – LARC equivalent or superior efficacy
  – Vasectomy superior efficacy

Laparoscopic tubal ligation  Postpartum tubal ligation  Hysteroscopic tubal ligation
Considerations

• CREST study
  – Obese women more likely to have surgical complications (OR 1.7, 95%CI 1.2-2.6)
  – Many procedures done via mini-laparotomy

• Postpartum
  – At the time of c-section
  – Mini-laparotomy within 3 days of delivery
  – May be more technically challenging

Peterson, Am J Obstet Gynecol; 1996
Medicaid sterilization policy

• Term deliveries
  – At least 30 days between signature date and sterilization date

• If preterm delivery or emergency operation
  – Sterilization was performed less than 30 days but more than 72 hours after the date of signature

• Form expires after 180 days!

• Pregnancy ~ 280 days
Conclusion

• Provide patient-centered contraceptive counseling
• Use the many available references
• Remember that contraception is safer than pregnancy

Thanks to Jen Kerns, Phil Darney, Mike Policar, Carolyn Sufrin, Nika Seidman, Jody Steinauer, Merrie Warden, Alissa Perrucci and Sara Whetstone for sharing slides!
Resources

Many easily accessible resources exist to help solve contraception quandaries.

KU Family Planning Consult Service
(vfrench@kumc.edu, me 😊)