Fertility Control and Abortion

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9.28.15
Reasons for Fertility Control

• Ensure that every child born is “wanted”
• Control spacing of pregnancies
• Give married couples time to adjust
• Reduce fear of “unwanted” pregnancy
• Control inheritable diseases
• Reduce risk of sexually transmitted infections (STIs)
Global Population Growth

- In the 100 years between 1830 and 1930, the number of people on earth increased from 1 billion to 2 billion
- In the 30 years between 1930 and 1960, the number of people on earth increased from 2 billion to 3 billion
- In the 18 years between 1960 and 1978, the number of people on earth increased from 3 billion to 4 billion
- In the 12 years between 1978 and 1990, the number of people on earth increased from 4 billion to 5 billion
- In the 10 years between 1990 and 2000, the number of people on earth exceeded 6 billion
- On November 1, 2011, the global population reached 7 billion!
Fertility Control Effectiveness

- 85% chance of pregnancy in a healthy fertile couple (unprotected intercourse 2x week)
- Today in the U.S. ~ ½ of all pregnancies are unintended
- ½ of unintended pregnancies were due to failed or improper use of fertility control method
Fertility Control Effectiveness

• **Failure Rate**
  
  • **Lowest user failure rate (theoretical)** – how well a method performs which uses as it is intended and consistently
  
  • **Typical user failure rate** – how well a method performs when all of the errors and problems that typically encounter with a method are taken into account i.e. “human error”
Why People Do Not Use Fertility Control

• 5% of married couples, 15% of non-married individuals use no fertility control method
• 20% of non-married American women between 20 and 29
• 40% of American college students
Why People Do Not Use Fertility Control

- **Low Motivation**
  - Those who want children at some time
  - Willing to risk it
- **Lack of Knowledge**
  - Uninformed about conception
  - Incorrect use of a fertility control method
  - No backup method
  - Negative attitude about fertility control
Why People Do Not Use Fertility Control

• **Ambivalence about being sexual**
  - Don’t plan ahead because they think they don’t need it
  - Embarrassed to plan

• **Relationship Issues**
  - Uncommitted relationship
  - Irregular sexual contact
  - New or casual sexual relationship
  - First intercourse
Sharing the Responsibility for Contraception

- Components of responsibility for contraception
  - Choosing a method
  - Using that method consistently and correctly
- Sharing responsibility improves sexual interaction and relationship
- Intimate partners are more likely to use the chosen method properly
Sharing the Responsibility for Contraception

• Sharing Responsibility
  • Involves active communication
    • not as likely with first time or casually dating couple because it assumes that sex will take place beforehand
    • Must happen beforehand
    • Many don’t know how to bring it up or fear ruining the mood
Penile Withdrawal

• Man withdraws his penis from the vagina before ejaculation
• One of the least effective methods
• Requires lots of control and restraint
• Semen deposited elsewhere can enter by contact with the vulva
• Could diminish sexual pleasure
Douching

- Rinsing with vagina with fluid after sexual intercourse
- Not very effective, 1000’s of sperm enter through the cervix within seconds
- The douche may actually propel sperm into the uterus, aiding conception
Hormonal Contraceptives

• The Pill
  - FDA first approved in 1960
  - Convenient, low cost, reversible, tolerable side effects and effective
  - Combination Hormonal Contraceptives vs. Progestin-Only
Hormonal Contraceptives

- Combination Hormonal Contraceptives
  - Most popular reversible method
  - 25% of contraceptive use of all women
  - 40% of women under 30
  - Contain estrogen and progesterone
Hormonal Contraceptives

• Side Effects
  • Nausea, breast tenderness, increased breast size, fluid retention, headache, weight gain, depression, fatigue, decreased sex drive, acne, blood clots
  • Reduce menstrual cramps, shorter lighter period, regulation of menstrual cycle, lower risk for pelvic inflammatory disease, some cancers, cysts, ectopic pregnancy and iron deficiency anemia
Hormonal Contraceptives

• The Pill
  • 21, 28 or 91 day pills
  • May have a steady amount of hormone or they can vary to mimic the hormone levels in a woman’s cycle
  • Pills need to be taken at the same time each day
  • Long-term fertility is not lessened by using the pill but some have some irregularity after discontinued use
Hormonal Contraceptives

- Skin Patch
  - Applied to lower abdomen, buttocks, or upper body and slowly releases hormones
  - 1 patch every week for 3 weeks, none on the 4th week
  - Similar side effects as the pill
  - Possibly more effective because no pills to forget
  - Less effective in women weighing more than 200 lbs.
Hormonal Contraceptives

• Vaginal Ring
  • Flexible ring containing hormones similar to those in pills
  • Hormones are continuously released for three weeks and then it is removed
  • Highly effective, same side effects as contraceptive pills
  • Ring may become dislodged, have vaginal discharge, vaginitis or irritation as a result
Hormonal Contraceptives

• Injectable Contraceptives
  • Injections of the same hormones that are in contraceptive pills
  • Lasts up to 90 days
  • Effectiveness, side effects and risks are similar to other combination hormonal contraceptives.
Hormonal Contraceptives

- Progestin-only Contraceptives
  - Available as pills and injectables
  - Inhibit ovulation, thickens cervical mucus to make sperm passage into the uterus more difficult, changing the uterine environment to that pregnancy is less likely
  - Side effects – menstrual irregularities, weight gain, depression, fatigue, decreased sex drive, acne or headaches
  - Long term use increases the risk of irreversible bone loss
Fertility Awareness Methods

- Natural Family Planning or Rhythm Method
  - Attempts to determine the days a woman is ovulating
  - “Unsafe Days” vs. “Safe Days”
  - Safe, inexpensive
  - May be less effective for some if careful records are not kept
Fertility Awareness Methods

• **Calendar Rhythm**
  • Estimates most likely fertile days by assuming a woman's cycle is 28 days with ovulation on the 14\textsuperscript{th} day +/- 2 days
  • Ovum is capable of being fertilized for 24 hours after release
  • Sperm are capable of fertilization for up to 5 days
Fertility Awareness Methods

• **Temperature Method**
  - Basal Body Temperature
  - Raises 1 degree after ovulation
  - Can determine over time when ovulation occurs every month

• **Mucus Method**
  - Observing changes in cervical mucus
  - Some also observe changes in the opening of the cervix
The Basal Body Temperature Method

Temperature (°F)

Safe

Menstruation

Ovulation

Unsafe

Days
Fertility Awareness Methods

• **Sympto-thermal Method**
  • Using the temperature and mucus methods simultaneously

• **Hormonal Methods**
  • Ovulation predictor kit (or smart phone reminder)
  • Measure amount of pituitary hormone, and LH which peak at the time of ovulation
Barrier Methods

• Block movement of sperm in the female reproductive tract or bring sperm into contact with a sperm-killing chemical

• Male Condom
  • Membranous sheath to cover the erect penis to catch semen before it enters the vagina
  • Easy to obtain, inexpensive, no medical risk, reliable, moderately effective
  • Almost 100% effective when used with spermicide
Barrier Methods

- **Female Condom**
  - Tube-like pouch that fits into the vagina
  - Two rings hold it in place
  - Resistant to damage
  - Disadvantages – discomfort, difficulty with insertion, positioning and remaining in place, noise
  - Helps protect against STDs
Barrier Methods

• Diaphragm
  • Dome-shaped cup, coated with spermicide and placed to cover the cervix
  • Effective if used correctly
  • Risk of toxic shock syndrome
  • Must be fitted by a doctor, only available by prescription
Barrier Methods

- **Cervical Cap**
  - Cup-shaped device that snugly covers the cervix, coated with spermicide
  - Can be left in place for 1-2 days
  - Must be fitted by a health professional
Barrier Methods

- **Contraceptive Sponge**
  - Spermicidal soaked sponge
  - Destroys sperm, absorbs ejaculate, blocks the entrance to the uterus
  - Lowest failure rate is 14, typical is 18
  - After children failure rate is 28
  - Can cause irritation, toxic shock syndrome
Barrier Methods

• **Vaginal Spermicides**
  • Spermicidal chemical inserted in the vagina
  • Foam, gel, cream, suppositories and films
  • No prescription needed
  • Must wait 10-30 minutes before intercourse
  • Tend to be gooey and slippery
Intrauterine Device

- Small plastic object placed in the uterus
- Prevents pregnancy by killing or weakening sperm, altering the timing of the ovum’s or embryo’s movement through the fallopian tube and/or inhibiting implantation of the embryo in the uterine lining
- Stays in place for months or years
- Has progesterone or is lined with copper
- May have heavier menstrual flow or cramps, increased risk of pelvic inflammatory disease, uterine perforations and ectopic pregnancy
Sterilization Methods

- Surgical methods that cause permanent inability to have children
- Nearly 100% effective
- Female Methods
  - Tubal Ligation
  - Hysterectomy
- Male Sterilization
  - Vasectomy
Sterilization Methods

- **Tubal Ligation**
  - Blocking of the fallopian tubes by cutting and tying, sealing or closing them with clips, bands or rings.
  - Local anesthesia
  - Low level of complications
  - Reversal is 50-70% successful
Tubal Ligation Procedure

(a) Cross section

(b) Front view
Sterilization Methods

• **Hysterectomy**
  • Surgical removal of the uterus
  • High complications after surgery
  • Expensive
  • Can decrease sexual pleasure
Sterilization Methods

• Vasectomy
  • Severing and/or blocking each of the two vas deferens
  • Ejaculation is sperm-less
  • Has no effect on a man’s hormone production, ability to maintain erection or enjoyment of sex
  • Local anesthesia, only takes 20 min
  • Low complications
  • Reversal is 50% successful
Vasectomy Procedure

(a) The vas deferens is located.

(b) A small incision in the scrotum exposes the vas deferens.

(c) A small section of the vas deferens is removed and the ends are cut and/or cauterized.

(d) The incision is closed.

(e) Steps a-d are repeated on the other side.
Abortion

- Intentional, premature termination of pregnancy
- Records as far back at 2700 BC in China
- 1.5 million each year in the U.S.
  - ¼ of all pregnancies and ½ of all unintended pregnancies are aborted
Abortion

• **Emergency Contraception**
  • Designed to prevent pregnancy if fertilization might have occurred.
  • Unprotected sex, missing of a contraceptive
  • Not intended to be a primary method
  • Hormonal emergency contraception
    • Estrogen and progestin – within 72 hours
    • Progestin-only – “Plan B”, within 72 hours, available without prescription
    • Ulipristal – “ellaOne”, up to 5 days
Abortion

- **Emergency Contraception**
  - Hormonal emergency contraception
    - Reduce risk of pregnancy by 90%
    - Side effects – nausea, vomiting and adverse effects on fetus if pregnancy results
    - Block ovulation
  - IUD emergency contraception
    - Insertion of a Copper-T IUD up to 5 days after
    - More effective than hormonal emergency contraception
    - Reduces pregnancy by 99%
Abortion

• **Surgical Abortion**
  • Manual Vacuum Aspiration (MVA)
    • Immediate and up to 10 weeks
    • Local anesthetic, gradual dilation of cervix, uterus emptied with manual syringe
    • Safe and effective
  • Dilation and Suction Curettage
    • 6-14 weeks
    • Local anesthetic, gradual dilation of cervix, uterus emptied with machine operated suction
    • Curette may be used to clean the walls of the uterus
Vacuum Aspiration
Abortion

- **Surgical Abortion**
  - Dilation and Evacuation (D&E)
    - 15-20 weeks
    - Cervix dilated and uterus emptied with medical instruments, suction and curettage
Abortion

• Medical (Chemical) Abortion
  • Early medical abortion (before 8 weeks)
    • Phase 1 – Methotrexate or mifepristone, block action of progesterone, causes miscarriage
    • Phase 2 – prostaglandin, induces contractions to facilitate expulsion of uterine contents
  • 90%+ effective depending on medication
  • Causes birth defects if pregnancy continues, usually a surgical abortion would follow an unsuccessful medical abortion
Abortion

• Medical (Chemical) Abortion
  • Late medical abortion (after 12 weeks)
    • Infusing saline or urea into uterus, kills the fetus
    • Prostaglandin, induces uterine contractions to empty the uterus
Abortion

- **Aftereffects of Abortion**
  - Between confirmation of pregnancy and abortion
    - Emotionally trying, anxiety, depression
  - After abortion
    - Anger or disappointment, relief
    - Feelings may last months or more
Abortion

• Moral and Legal Aspects of Abortion
  • Controversial between Greek philosophers
    • Aristotle and Plato supported abortion
    • Hippocrates – forbade it
  • Common in the Middle Ages and Renaissance though some religious leaders objected
  • In US – legal before the woman could feel fetal movements (16 weeks)
  • By 1900 it was illegal in the US
  • Illegal abortions were common
Abortion

- **Moral and Legal Aspects of Abortion**
  - Jan 22, 1973 – Row v. Wade
    - States could not make laws prohibiting abortion because it violated a woman’s right to privacy
  - No universally accepted scientific definition of when a life begins
Review

1. Fertility control allows one to plan wisely for the future.
2. Sterilization is the most common form of birth control in American women.
3. Natural family planning does not involve hormones or barrier devices.
4. The major types of contraceptives include hormonal, barrier, and other (the IUD).
5. There is a lowest user failure rate (theoretical) and a typical user failure rate for all fertility control methods.
6. Negative attitudes can affect rates of use.
7. The sterilization procedure for the male is called a vasectomy and the female is a tubal ligation.
8. There are various types of abortion methods specifically for the first, second, and third trimesters.
The End

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