Neutropenia and Women’s Health

Kristin Demorest Hayes, MD
House Officer III, Obstetrics & Gynecology
University of Michigan Health System
Topics of Discussion

- Puberty
- Sexually Transmitted Infections
- Common GYN Infections
- Birth Control
- Pregnancy
- Breastfeeding
- Acknowledgements/References/Questions
Puberty: Expected Milestones

- Puberty usually starts between ages 8 and 13 (average age 10)
- Thelarche (breast development) is usually the first sign of puberty
- Adrenarche (development of pubic hair) usually begins about 6 months after breast development, and takes an average of about 3 years to complete
- Menarche (start of period) usually occurs about 2 years after the start of breast development. The average age varies by a number of factors, including ethnic group and weight
- Reasons to seek evaluation:
  - Breast development prior to age 7, or after age 13
  - Significant pubic hair development without breast development or menarche
  - Absence of a period by age 15 or no period within 3 years of breast development
- Little research has been done on whether SCN, particularly the congenital forms, has an impact on pubertal development
- Evaluation of delayed puberty should start with your general pediatrician
Topics of Discussion

- Puberty
- Sexually Transmitted Infections
- Common GYN Infections
- Birth Control
- Pregnancy
- Breastfeeding
- Acknowledgements/References/Questions
Sexually Transmitted Infections: Viral

- **Genital Herpes:**
  - Recurrent outbreaks of genital sores
  - No cure. Can be managed with medications to prevent outbreaks
  - Neutropenia does not increase risk of getting herpes, but stress in the body (such as infections) can predispose to outbreaks in infected individuals

- **HIV:**
  - Immunodeficiency virus that can lead to AIDS
  - Disturbs multiple parts of the immune system, including neutrophil counts
  - Can be treated, but not cured
Sexually Transmitted Infections: Bacterial

- Chlamydia/Gonorrhea:
  - Yellow/green discharge
  - May be otherwise asymptomatic
  - Can lead to pelvic inflammatory disease, tubo-ovarian abscess

- Trichomonas
  - VERY easily transmitted between partners
  - Common in newly sexually active adolescents
Topics of Discussion

• Puberty
• Sexually Transmitted Infections
• Common GYN Infections
• Birth Control
• Pregnancy
• Breastfeeding
• Acknowledgements/References/Questions
GYN Infections: Yeast

- Skin irritation, itching
- White discharge
- Can be treated with oral or topical medications
- Resistant infections should be cultured to allow for species typing/antibiotic sensitivities
GYN Infections: Bacterial Vaginosis

- Malodorous discharge
- Can sometimes cause pelvic cramping, particularly in pregnancy
- Not a true “infection” but overgrowth of naturally occurring bacteria
- Responds to flagyl
Topics of Discussion

- Puberty
- Sexually Transmitted Infections
- Common GYN Infections
- Birth Control
- Pregnancy
- Breastfeeding
- Acknowledgements/References/Questions
Birth Control and Unintended Pregnancy

- Approximately 50% of all pregnancies in the US are unintended.
- 85% of women who have unprotected intercourse will get pregnant within 1 year.
- Pregnancy should be considered a high-risk time for infection or medical complications, and will ideally be limited to periods in life where it is desired.
- We will discuss the following methods, based on their effectiveness and special considerations in Neutropenic patients:
  - Fertility-based methods
  - Barrier methods
  - Hormonal methods
  - Injections/Implants
  - Sterilization: Permanent and reversible
Birth Control: Fertility and Barrier Methods

- **Fertility-based methods:**
  - Designed to avoid intercourse during the ovulation (usually occurs about 14 days after the start of a woman’s period)
  - With typical use, 24% of women using this method will get pregnant within 1 year
  - No neutropenia-related safety concerns

- **Barrier methods:**
  - Most common barrier method is condoms. Other methods include diaphragms
  - With typical use, 18% of women using this method will get pregnant within 1 year; pregnancy rate 2% with perfect use.
  - No neutropenia-related safety concerns
Birth Control: Hormonal Methods

- Daily/Weekly options:
  - Includes OCPs (birth control pills), patches, and vaginal hormone rings (such as the NuvaRing)
  - With typical use, 9% of women using this method will get pregnant within 1 year; pregnancy rate 0.3% with perfect use.
  - Side effects of estrogen-containing pills include increased risk of blood clots; avoid in patients with smoking history and use with caution in overweight patients/smokers
  - No neutropenia-related safety concerns
Birth Control: Injections/Implants

- **Depo-provera injection**
  - Progesterone injection, given once every three months
  - Side effects include mood changes and weight gain
  - With typical use, 6% of women using this method will get pregnant within 1 year; pregnancy rate 0.5% with perfect use.
  - No neutropenia-related safety concerns

- **Implants:**
  - Progesterone-containing devices that are implanted in the arm during office procedure. Instead of a monthly shot, device needs to be changed every 3 years
  - Side effects similar to injection
  - 0.05% of women using this method will get pregnant within 1 year
  - Possible infection resulting from small procedure. If neutrophil counts adequate (ANC >1.5) this should not be a concern
Birth Control: Reversible Sterilization

- IUDs (Intra-Uterine Devices) are used for long-term, reversible birth control. Inserted vaginally during an office procedure.

- Two options in the US:
  - ParaGard IUD ("Copper T")
    - Effective for 10 years. Does not contain hormones.
    - 0.6% of women using this method will get pregnant within 1 year.
  - Mirena/Skyla
    - Effective for 5 years. Contains a low level of progesterone hormone.
    - 0.2% of women using this method will get pregnant within 1 year.

- Can be used in patients with chronic neutropenia as long as ANC adequate (>1.5). IUDs have been associated with pelvic inflammatory disease, especially in individuals sexual transmitted diseases such as gonorrhea and chlamydia.

- Condoms should be used to prevent STIs at all times, but especially when a SCN patient has an IUD in place.
Birth Control: Permanent Sterilization

- Female options: Tubal occlusion and tubal ligation
  - Surgical procedure, typically done in operating room (although occlusion procedures can sometimes be done in the office)
  - 0.5% of women using this method will get pregnant within 1 year
  - Any surgical procedure comes with a risk of infection. Discuss with hematologist if adjustments in neupogen should be made

- Male options: Vasectomy
  - With typical use, 0.15% of women using this method will get pregnant within 1 year; pregnancy rate 0.10% with perfect use.
Topics of Discussion

- Puberty
- Sexually Transmitted Infections
- Common GYN Infections
- Birth Control
- Pregnancy
- Breastfeeding
- Acknowledgements/References/Questions
Pregnancy: How to Prepare

• Find an OB provider that you are comfortable with and if possible, establish care prior to pregnancy

• Begin taking a prenatal vitamin 3 months before attempting conception if possible (folic acid is the most important component)

• Do not stop taking your Neupogen
Pregnancy: Should I Take Neupogen?

- Recent study from Boxer et al (2014) demonstrates that Neupogen is safe to use in pregnancy
- Trends towards lower rates of miscarriage, preterm labor on Neupogen
- No serious neonatal infections noted in babies whose mothers were on Neupogen
- Do NOT stop taking your Neupogen when you become pregnant!
Pregnancy: Talking with my doctor

- I should expect:
  - My doctor to listen and ask questions when I tell them about my neutropenia
  - My doctor and hematologist to communicate regarding my care during pregnancy
  - That I may or may not be referred to a high risk OB for my care. This does not mean anything is “wrong” with your pregnancy— these doctors are sometimes more used to taking care of women with unusual health issues
Pregnancy: Talking with my doctor

- I should not expect:
  - My OB/GYN to manage my Neupogen dosing during pregnancy. This is best left to an expert like your hematologist!
Topics of Discussion

- Puberty
- Sexually Transmitted Infections
- Common GYN Infections
- Birth Control
- Pregnancy
- Breastfeeding
- Acknowledgements/References/Questions
Breastfeeding: Safe for Baby?

- Benefits of breastfeeding for baby: decreased risk of infections, allergies, childhood obesity, high blood pressure and high cholesterol

- Neupogen does enter the breast milk

- Based on a study by Calhoun, Maheshwari & Christensen (2003) babies do not absorb Neupogen from breast milk into their circulation. Therefore, it has little effect on them

- Breastfeeding is safe for baby and has many benefits!
Breastfeeding: Safe for Mom?

- Breastfeeding benefits for mom: faster return to pre-pregnancy weight, decreased risk of breast and ovarian cancer, decreased risk of osteoporosis

- There is a risk of mastitis/breast abscess in any breast feeding mom. Symptoms include high fever, redness of the breast, pain, and difficulty draining the breast

- Prevent by frequent feeding/pumping, massage of areas in the breast that are not draining, preventing nipple cracking, keeping ANC at appropriate level

- Breastfeeding is safe for mom and has many benefits!
References


Questions