Preconception Care for the Primary Care Provider

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Learning objectives

At the end of the presentation, participants should be able to:

1. Discuss the importance of preconception care in the primary care setting.
2. Identify common risks associated with adverse pregnancy outcomes.
3. Determine appropriate preconception interventions to optimize pregnancy outcome.
4. Describe key components of preconception health patient education.

Patient Case

- Ms. Smith is a 28yo ♀ with a hx of gestational diabetes in 2009. No follow up.
- Presents to ED in 2011 and is dx’d with a spontaneous abortion.
- She sees her PCP in 2012 and is started on metformin, lovastatin, and lisinopril.
  - Hgb A1c = 11
Patient Case

• Ms. Smith continues to see her PCP for 12 months
  – Hgb A1c = 9.2
  – Menses now regular on Metformin
  – Still taking Lisinopril and Lovastatin

Patient Case

• In 2014, Ms. Smith is now pregnant and at her initial prenatal visit:
  – Taking two potential teratogens
  – Hgb A1c > 8
  – Not taking folic acid supplements

Patient Case

• Ms. Smith had multiple visits with clinicians prior to her pregnancy
  • No one discussed contraception, teratogens, or preconception care!
  • Have you met her at some point?
Definition

Preconception care:

Interventions that aim to identify and modify **biomedical, behavioral, and social risks** to a woman’s health or pregnancy outcome through prevention and management.

Background

Is preconception intervention more important than prenatal intervention?
Background

Is preconception intervention more important than prenatal intervention?

For prevention of congenital anomalies, yes.

Background

• Almost ½ off all pregnancies in the U.S. are unintended

• 1 in 25 prescriptions written for ♀ ages 18-45 is for a potential teratogen

Background

Healthy People 2020 Objective:

↑ the proportion of ♀ delivering a live birth who received preconception care services and practiced key recommended preconception health behaviors.

Preconception care recommended to be an essential part of primary and preventative care, rather than an isolated visit.

Opportunities:
- Contraceptive counseling
- STI evaluation
- After a negative pregnancy test
- Anytime a female of childbearing age presents for a periodic health examination

3 Goals of Preconception Care
- Screen for risks
- Recommend interventions to address identified risks
- Promote health and provide education

Thorough history necessary
- Age: advanced maternal age (>35yo) associated with increased pregnancy risks
  - Infertility
  - Fetal aneuploidy
  - Gestational Diabetes
  - Preeclampsia
  - Stillbirth
### Medical Conditions:
- Asthma
- Cardiovascular disease
- HTN
- Diabetes
- Lupus
- Thyroid disease
- Seizure disorders
- Renal disease
- Rheumatoid arthritis
- Thrombophilia
- Bipolar disorder
- Depression
- Anxiety
- Anaphylaxis

### Medication use: Resource

[Announcing MotherToBaby](http://www.mothertobaby.org/)

**MotherToBaby**
- A service of the Organisation of Teratology Information Specialists
- Dedicated to providing evidence-based information about medications and other substances suspected or proven to be human teratogens

**Teratogenic Drugs**
- Lithium
- Methimazole
- Methotrexate
- Phenytin
- Streptomycin
- Tetracycline
- Tretinoin
- Valproic acid
- Warfarin

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**Welcome to MotherToBaby**

MotherToBaby is a service of the Organisation of Teratology Information Specialists, dedicated to providing evidence-based information about medications and other substances suspected or proven to be human teratogens. If you are pregnant or planning to become pregnant, visit [MotherToBaby.org](http://www.mothertobaby.org/) for comprehensive information about medications and other substances and their effects on your developing baby. To learn more about MotherToBaby’s role in the research that led to this information, visit [http://www.mothertobaby.org](http://www.mothertobaby.org/).
Risk Assessment

Family history
Congenital anomalies
- Neural tube defects
- Heart defects
- Orofacial clefts
Chromosomal abnormalities
- Down syndrome
- Fragile X

Inherited diseases
- Thrombophilia
- Muscular dystrophy
- Huntington’s chorea
- Hemophilia
- PKU
- Deafness
- Marfan syndrome

Family history cont’d
Ethnicity
- Eastern European (Ashkenazi) → Tay-Sachs, Canavan
- French Canadian or Cajun → Tay-Sachs
- Mediterranean
- Asian
- African
- Middle Eastern
- South American
- Caribbean
- Caucasian → Cystic fibrosis

Hemoglobinopathy

Risk Assessment

Infections
- STIs
- TB

Immunizations
- MMR*
- Varicella*
- Tdap
- Hep B
- Influenza

Reproductive history
- Pregnancy complications
- Uterine anomalies

Substance use

Psychosocial issues
- Mental illness
- Domestic violence
Risk Assessment

Environmental exposure
• Lead
• Pesticides

Weight
• Maternal obesity linked to:
  – Subfertility
  – Congenital anomalies
  – Gestational diabetes
  – Preeclampsia
  – Macrosomia
  – Stillbirth

Physical Examination

• Blood pressure
• BMI
• Mouth
• Thyroid
• Lungs
• Heart
• Genital tract

Laboratory Assessment

HIV screening
If high-risk, consider:
• STI screening (GC, CT, Syphilis, Hepatitis)
• Rubella titer
• Genetic carrier testing (CBC with RBC indices)
• Hemoglobin A1c or fasting plasma glucose
• TB skin test
• Toxoplasmosis, CMV screening
• Phenylalanine level
• Lead level
Interventions

Goals:
• Preparing and educating the patient
• Optimum therapy for medical disorders
  – Referral to specialized care prn
• Create a reproductive health plan

Interventions

Maternal medical problems:
• Diabetes → glycemic control can decrease risk of miscarriage and embryopathy.
  – If taking ACEI, ARBs, statins, and some oral anti-hyperglycemic agents, considering switching to methyldopa, labetalol, calcium channel blocker, insulin, or glyburide prior to pregnancy
• HTN → if taking ACEI or ARB, switch to safer agent prior to pregnancy

Interventions

Maternal medical problems:
• Asthma → good control decreases risk of maternal acid base disturbance and fetal hypoxemia
  – Steroids generally safe in pregnancy
• Thyroid disease → good control as both hyper- and hypothyroidism can affect fertility and pregnancy outcome
  – PTU, beta blockers for hyperthyroidism in pregnancy
  – Thyroxine for hypothyroidism, notify OB asap once +hcg
Interventions

Maternal medical problems:
- Seizure disorders
  - Educate women on interactions of antiepileptic drugs (AEDs) and oral contraceptives
    - AEDs are inducers of the hepatic cytochrome P-450 system
    - WHO recommends avoiding the hormonal pill, patch, or ring
    - Avoid valproate if desires pregnancy

Interventions

Maternal medical problems:
- SLE
  - prognosis best when disease has been quiescent for ≥ 6 months prior to pregnancy and renal function is stable.
- Dental caries
  - associated with preterm delivery
  - Refer to dentist
- Heritable diseases
  - refer for genetic counseling prior to pregnancy

Interventions

Folic acid supplementation:
Fact: Approximately 2,500 infants are born each year in the U.S. with a neural tube defect. About half these cases are thought to be related to inadequate folic acid intake by the mother.

The USPSTF recommends that ALL women planning or capable of pregnancy take a daily supplement containing 0.4-0.8 mg (400-800 µg) of folic acid.

Grade A recommendation
Reproductive health plan:
Do you plan to have any (more) children at any time in your future?
   If yes:
   • How many children would you like to have?
   • How long would you like to wait for pregnancy?
   • What family planning method do you plan to use until then?
   • How sure are you that you will be able to use this method without any problems?

Reproductive health plan con’t:
Do you plan to have any (more) children at any time in your future?
   If no:
   • What family planning method do you plan to use to avoid pregnancy?
   • How sure are you that you will be able to use this method without any problems?
   • People’s plans change. Is it possible you could ever decide to become pregnant?

Remind patient life is unpredictable
Education

Counsel on avoiding risks:
- Smoking, alcohol consumption, drug use
- STI exposure
- Mercury
- Cytomegalovirus, Listeria, Toxoplasma gondii
- Environmental exposures

Education

Health promotion:
- Physical activity
- Maintain healthy weight

Preconception care for men

Family history and genetic risks assessment
- Polycystic kidney disease, Klinefelter syndrome → can impair fertility and sperm quality

Past medical history
- Obesity, DM, varicocele, cancer tx during childhood → associated with reduced sperm quality
Preconception care for men

Medications
• May affect sperm count and quality
  – Calcium channel blockers
  – Cimetidine
  – Phenytoin
  – Corticosteroids
  – Tetracycline
  – Sulfasalazine

Preconception care for men

Health promotion
• Maintain healthy weight
  – Obesity associated with ↓ testosterone levels
• Reducing stress
  – Stress can disrupt HPO functions
• Mental health
  – Fathers with good mental health ↓ effects of a mother’s depression on her child

Implementation
• Preconception care includes more than a single prepregnancy office visit and less than all well-woman examinations.
  – No consensus on this.
• Start by asking female patients about their reproductive life plan.
  – If desires pregnancy in next 1-2 years, return for full assessment with her partner.
• Be mindful of medications and chronic diseases in women of reproductive age!
Thus, preconception care is not something new that is being added to the already overburdened healthcare provider, but it is a part of routine primary care for women of reproductive age.

...the provision of smoking cessation services is preconception care; choosing a medication for a patient with hypertension is preconception care...

In summary, much of preconception care merely involves the provider reframing his or her thinking, counseling and decision-making to accommodate the possibility of a pregnancy before the next clinical encounter.
Resources

Preconception Screening and Counseling Checklist

CDC Preconception Health and Health Care
- [http://www.cdc.gov/preconception/hcp/index.html](http://www.cdc.gov/preconception/hcp/index.html)

Preconception occupational/environmental history check list

Questions?
References


