Faculty Disclosure

Dr. Park has an Investigator initiated award from Pfizer in which the medication, Varenicline, was provided for a pilot smoking cessation trial for lung cancer patients.
Learning Objectives

Identify risk factors for prenatal smoking and postpartum relapse

Review 3-levels of brief behavioral smoking cessation interventions

Review pharmacological treatments
Health Risks of Tobacco Use During and After Pregnancy
Smoking during Pregnancy

Significant evidence that smoking causes:

- Stillbirth
- Preterm birth
- Placental abruption
- SIDS

Associated with increased risks of:

- Spontaneous abortions
- Ectopic pregnancies
- Placenta previa

MMWR, 2004; Cnattingius, NTR, 2004
Smoking during Pregnancy

Low Birthweight

![Graph showing the relationship between cigarettes per day and low birthweight.]

Simpson, Am J OBGYN, 1957
Smoking *after* Pregnancy

Increased risk in children of smokers

- Sudden Infant Death Syndrome (SIDS)
- Hospitalization in 1\textsuperscript{st} year of life
- Serious respiratory infections
  (\textit{e.g.}, bronchiolitis, pneumonia)
- Otitis media
- Asthma
WHY DO SMOKERS KEEP SMOKING?

- Pharmacologic addiction to nicotine
- Psychological dependence on smoking
  - Behavioral cues (meals)
  - Coping with stress, emotions (anger)
- Mood regulation
NICOTINE WITHDRAWAL SYMPTOMS

- Nicotine craving
- Irritability, anger, impatience
- Restlessness
- Difficulty concentrating
- Insomnia
- Anxiety
- Depressed mood
- Increased appetite
FINANCIAL COSTS OF PRENATAL SMOKING

- Smoking-attributable costs by pregnant smoker = $880

- For each pregnant women who quits smoking, Medicaid saves $1274

- 1% decrease in smoking prevalence would save U.S. $21 million in direct medical costs in first year

Clinical Practice Guideline, 2008
Who Smokes in Pregnancy?
How prevalent is prenatal smoking?

- 11-22% of U.S. women smoke throughout pregnancy
- State prevalence range 26% (WV) - 6% (AZ)
- 42% of females < 12 years of school smoke during pregnancy
- 25% of pregnant Medicaid recipients are smokers
Risk Factors For Smoking in Pregnancy

- Less education
- Young
- White
- Medicaid
- Partner who smokes
Smoking Cessation Methods
SMOKING CESSATION METHODS
2008 US Public Health Service Guidelines

- Effective treatments exist
  - Counseling (individual / group / telephone)
    - Effective for adolescents
  - Pharmacotherapy – use combinations
  - Combination is better than either one alone

- More is better but brief intervention works

- Treating tobacco is highly cost-effective
Smoking Cessation during Pregnancy
Pharmacologic Interventions

- The efficacy and safety of these pharmacological approaches during pregnancy is unknown.
- No medication has been observed in a sufficiently large pregnant population to determine what might occur with large-scale use.
Nicotine replacement  *(Class D)*
- Gum
- Skin patch
- Nasal spray
- Inhaler
- Lozenge (no category rating)

Bupropion SR  *(Zyban, Wellbutrin SR)* *(Class C)*

Varenicline  *(Class C)*
PHARMACOLOGIC TREATMENT
2008 U.S. Public Health Service Guideline

- In non-pregnant smokers, NRT and bupropion each double cessation compared to behavioral methods alone.
- In very limited studies in pregnant women, NRT was not associated with adverse outcomes, but did have a short-term influence on fetal breathing movements and fetal heart rate variability.
- Nicotine most likely has adverse effects on the fetus; smoking exposes women to nicotine plus other chemicals that are injurious.
VARENICLINE

- Non-nicotine medication; interferes with nicotine receptors
- Agonist & antagonist function; reduces pleasure gained from smoking as well as withdrawal symptoms
- FDA approval – 2006
Varenicline

- Unknown safety with pregnant women
- Recent safety warnings
  - Warnings of use in individuals with serious psychiatric illness
CHOOSING THE RIGHT PHARMACOLOGICAL TREATMENT FOR PATIENTS

- Oral substitutes good for cravings
- Nasal spray works quickly
- Nicotine inhalers mimic smoking
- Patches are convenient
- Prescription pros & cons
- Depression
BEHAVIORAL TREATMENT
2008 U.S. DHHS CLINICAL PRACTICE GUIDELINES

- Because of the serious risks of smoking to the pregnant smoker and fetus, whenever possible pregnant smokers should be offered person-to-person psychosocial interventions that exceed minimal advice to quit.
  - Psychosocial interventions are twice as effective than usual care

- Clinicians should offer effective tobacco dependence interventions to pregnant smokers at the 1\textsuperscript{st} prenatal visit as well as throughout the course of pregnancy.
COUNSELING MODEL - ACOG (2000)

- ASK
- ADVISE
- ASSESS
- ASSIST
- ARRANGE
COUNSELING MODEL – 1-3 minute brief intervention

- ASK
- ADVISE
- REFER with self-help material
ASK about smoking at every visit

HOW you ask matters...

Deception rates, confirmed by comparing results of biochemical tests with self-reports, are high. They reach 50% in some populations.

Alabama SCIP, 1998
Recommended Question

Which best describes your cigarette smoking?

- I have NEVER smoked or smoked less than 100 cigarettes in my lifetime
- I stopped smoking BEFORE I found out I was pregnant and I am not smoking now
- I stopped smoking AFTER I found out I was pregnant and I am not smoking now
- I smoke some now, but CUT DOWN since I found out I was pregnant
- I smoke regularly now, about the same as before I found out I was pregnant.

Mullen, Am Jl Obstet Gynecol, 1991
ADVISE every smoker to stop

- “ Quitting smoking is the most important action you can take for your health and your baby’s health”
  - Strong and clear
  - Be positive - benefits of quitting
REFER smokers

- **Face-to-face counseling – group or individual**
- **Telephone counseling**
  - New York State Smokers' Quitline: 1-866-NY-QUITS
    - (1-866-697-8487)
- **Hospital-based smoking cessation consults**
- **Websites:**
  - www.nysmokefree.com
COUNSELING MODEL – 4-10 minutes

- ASK
- ADVISE
- ASSESS
- ASSIST
- ARRANGE
ASSESS

- Patient’s motivation to quit smoking
- Risk perceptions
- Social support
ASSESS readiness to quit

- “If we give you some help, are you willing to try?”

Precontemplation  “I like to smoke…”

Contemplation     “I want to quit, but…”

Preparation       “I’m ready to quit”
Assess – risk perceptions

- “Can you tell me what you think about the risks of smoking for yourself?”

- “…your baby?”
Assess – support

- Emotional support
- Smoking specific support
ASSIST

SMOKERS READY TO QUIT

- Set a quit date
- Help make a treatment plan
  - Give a pregnancy-tailored booklet
  - Offer social support
  - Identify trigger situations
ASSIST

SMOKERS NOT READY TO QUIT

- Review health risks to mother and fetus
- Educate about quitting process
- Recommend no smoking around family
ARRANGE follow-up

- Address smoking at every prenatal visit
- Assure follow-up during the first week of a quit; this is the critical period
- Set follow-up appointment
- Remember to address postpartum!
COUNSELING MODEL – 10-30 minutes

- ASK
- ADVISE
- ASSESS
- ASSIST
- ARRANGE
ASSESS & ASSIST

- Motivation to quit smoking
- Risk perceptions
- Social support
- Smoking environment
- Confidence & importance
- Pros & cons of smoking
- Other health behaviors
Precontemplation: “I don’t want to quit”

Cognitive Processes
Knowledge & Attitudes
Perceived risk
Smoking environment & support

- Elicit patient’s attitudes and beliefs about smoking
- Provide information and personalized feedback
- Increase patient’s perception of risks due to current behavior

→ DON’T GIVE ADVICE ABOUT WHAT THE PATIENT CAN DO TO MAKE CHANGES
Contemplation: “I’d like to quit, but I really like smoking”

Cognitive Processes
Knowledge & Perceived risk
Smoking environment & support
Pros and Cons
Barriers
Confidence & importance

• Try to tip balance in favor of change
• Try to strengthen confidence

→ BEHAVIORAL CHANGES ARE UNLIKELY TO WORK
Preparation: “I’m ready to quit, but I’m not sure how to do it”

Add Behavioral Processes
Overcoming barriers
Increasing social support

• Strengthen commitment/motivation for change
• Help patient to develop a feasible change plan
• Discuss potentially difficult situations
• Refer to behavioral or pharmacological treatment

→ CONSIDER DEVELOPING SMALL BEHAVIORAL CHANGES
Action & Maintenance: “I’ve quit/I’m a nonsmoker”

Continue cognitive & behavioral processes

• Strengthen commitment/motivation to change (review motivation & confidence)
• Review behavioral plan (check barriers, support)
• Refer to behavioral or pharmacological treatment if needed to stay quit
• Discuss positive changes observed since quitting (review pros & cons)

→ IDENTIFY RELAPSE RISKS
THE ROLE OF PROVIDERS

- Obstetric providers often miss opportunities to counsel smokers during prenatal & postnatal care

- www.TalkToYourPatients.org
Cessation medications were not discussed or recommended in the trial protocol.

End-of-pregnancy assessment asked subjects about

- Use of smoking cessation methods during that pregnancy
- Whether prenatal provider discussed cessation methods during the pregnancy
% of prenatal smokers reporting action

Advised to stop: 90%
Assist: 79%

Park et al., SRNT, 2004
OB PROVIDER ASSISTANCE TO QUIT

- % of prenatal smokers reporting action

- Counseling: 66%
- Materials: 37%
- Methods: 27%
- Gum: 15%
- Patch: 19%
- Zyban: 10%

Park et al., SRNT, 2004
CESSATION MEDICATION DISCUSSED AND USED DURING PREGNANCY

(End of pregnancy survey, N=296)

Prenatal provider discussed medication use

Smoker used medication in pregnancy

Rigotti, Park et al, 2007
Postpartum Relapse
Postpartum Smoking Cessation

% Abstaining

Months from Delivery

Mullen, AJPH, 1990
7-DAY POINT PREVALENCE SMOKING

Time Period

Percentage

BL | 6 week | 12 week | 18 week | 24 week
0  | 27     | 38      | 49      | 60

Park et al., 2008

% smoking/Study N
Mean Support by Smoking Status at 24 weeks

- Smokers' emotional support
- Smokers' smoking-specific support
- Nonsmokers' emotional support
- Nonsmokers' smoking-specific support
OB PROVIDER DISCUSSED MOOD & SMOKING

% of prenatal quitters reporting action

PRENATAL

POSTPARTUM

Park et al., 2008
CONCLUSIONS

Prenatal smoking can cause significant health and financial consequences.

The efficacy & safety of pharmacological smoking cessation treatment for pregnant women is unknown.

Brief obstetrician-delivered behavioral treatment can be effective at helping pregnant smokers quit.

Obstetricians can play an important role in helping their pregnant and postpartum patients to quit & stay quit.