Smoking Cessation in Pregnancy

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KEYWORDS

• Smoking cessation • Pregnancy • Interventions • Strategies

KEY POINTS

- More than 400,000 deaths occur per year in the United States that are attributable to cigarette smoking, and the risks to the general public are widely known.
- The risk to women, especially those who are pregnant, is less commonly known.
- During pregnancy, smoking increases the risk of low birth weight infants, placental problems (previa and/or abruption), chronic hypertensive disorders, and fetal death.
- Cessation of smoking during pregnancy can decrease or eliminate the risk for these complications.

INTRODUCTION

More than 400,000 deaths occur per year in the United States that are attributable to cigarette smoking. The risks to the general public are widely known. The risk to women, especially those who are pregnant, is less commonly known. Smoking raises a woman's risk for cervical, breast, lung, and ovarian cancer as well as early menopause.[1] During pregnancy, smoking increases the risk of low birth weight infants, placental problems (previa and/or abruption), chronic hypertensive disorders, and fetal death.[2] It is proposed that much of this happens because of vasoconstriction with decreased uterine blood flow from nicotine, carbon monoxide toxicity, and increased cyanide production. Infants of smoking mothers have increased risks of sudden infant death syndrome, respiratory infections, necrotizing enterocolitis, otitis media, and asthma.[1] In addition, the female offspring of pregnant smokers are more likely to have a nicotine addiction in adulthood.[3] There are reports of smoking decreasing the incidence of preeclampsia. This effect seems to be a late-term effect of smoking and not caused by nicotine because women using noncombustible nicotine delivery systems do not have the same protection.[4]

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Risk factors for continued smoking during pregnancy include

- Less than 25 years of age
- Non-Hispanic whites
- High school education or less
- Unmarried
- Annual income less than $15,000
- Unintended pregnancy
- First-time mothers
- Late care initiation
- Enrolled in Medicaid and/or Women, Infants, and Children Program

MANAGEMENT GOALS

The intent of intervention is to cease smoking not only for the duration of the pregnancy but permanently. If this is not successful, decreasing the number of cigarettes used and exposure to secondhand smoke can provide some benefit for both a woman and her infant.[5]

The problem with intervention is that the most robust studies have been conducted in the nonpregnant population. Studies during pregnancy are small, often qualitative and descriptive, and difficult to generalize to the pregnant population.[6] Also, as is the case with many addictive behaviors, the motivation to smoke and to continue to smoke can be extremely varied from patient to patient. These motivations can include simple habit; social activity with family/friends; nicotine addiction; a weight loss tool; and self-treatment for depression, attention-deficit/hyperactivity disorder (ADHD), or other mental illness.[7] Attempting to address only the end result (smoking/nicotine use) versus the root cause for the behavior makes interventions variable in their success across populations. Most of the interventions for nonpregnant smokers have been suggested for pregnant patients, including advice; counseling; self-help material; nicotine replacement therapy (NRT); antidepressants, including bupropion; and pharmacologic cessation aids, such as varenicline.[8] Safety and effectiveness in this subpopulation of smokers is controversial. Most systematic reviews have reported limited effectiveness for most interventions during pregnancy or postpartum.[5] Overall it seems from systematic reviews done in Canada and the United States that NRT, incentives, self-help materials, and counseling do help with cessation success during pregnancy. The effects of these methods post partum are less clear.

In addition to the amount and duration of smoking by pregnant women (level of dependence), there are other predictors as to the likelihood of acceptance of intervention and success. Up to 10% to 40% of smokers will quit before their first prenatal visit.[9] Women who spontaneously quit before prenatal care tend to be less nicotine addicted, have more concerns about fetal effects, receive early prenatal care, have more nausea, and are more educated. These women are more likely to remain smoke free during the pregnancy.

Women who have smoked through prior pregnancies, have household members that smoke, use other substances or alcohol, and smoke in the workplace will have less success. Much like obesity findings, the influence of partners, family, and friends on success or failure needs to be acknowledged.[10] Women who are successful typically have fewer temptations at home and work, with more nonsmokers in the circle of support. The smokers who are seen as support people for these women are more active in their praise and staying smoke free when around them while pregnant.[11,12] However, this support may lapse once she delivers and no longer has the condition