



Treating Tobacco Use Among Pregnant and Parenting Smokers

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Topic

Tobacco and pregnancy

Introduction

Since 1975, a growing volume of research has demonstrated the effectiveness of clinically proven interventions in achieving long-term or even permanent abstinence from tobacco use for all smokers.¹ Achieving cessation is especially important for pregnant and parenting smokers whose habit is a threat to their own health, pregnancy and offspring. Generally speaking, treatment for smokers also applies to parenting smokers but special considerations regarding treatment need to be made for pregnant women. Given the harm associated with exposure to environmental tobacco smoke (ETS), both parents and caregivers of young children should receive treatment to achieve cessation.

Subject

To date, intervention trials for pregnant women have focused on

- a) how to achieve higher rates of cessation during pregnancy
- b) how to prevent postpartum relapse
- c) the effect of cessation on birth outcomes.

Few intervention trials have specifically targeted pregnant and parenting smokers in an effort to reduce ETS exposure among young children. However, interventions designed for smokers as a group may also be used to achieve cessation for parents and, with some modification, for pregnant women. Increased cessation and abstinence rates will lead to reduced ETS exposure rates for pregnant women, infants and children.

Problems

The key problems in this area of investigation are as follows:

1. *Identifying all smokers, especially pregnant smokers*

People who smoke are often reluctant to discuss their tobacco use with caregivers and to be labelled as smokers.² Given the social pressure to abstain from smoking during pregnancy, pregnant women may be more reluctant to disclose their smoking status and may frequently be misclassified as non-smokers. Several trials have found high percentages of deception (28% and 35%) when self-reported smoking status is

biochemically confirmed among pregnant women.^{3,4} Although biochemical validation of self-reported smoking status remains the gold standard for identifying smokers, the associated expense and ethical issues generally consign its use to clinical trials. A structured, multiple-choice question for assessing tobacco use among pregnant women has been shown to increase the likelihood of accurate self-report by as much as 50%.² The choices in this question allow women to rate their smoking status under “never smoke,” “recently quit” (upon learning they were pregnant or while trying to get pregnant), and “continue to smoke” (although they may have reduced their smoking since learning of the pregnancy). These categories allow women to visualize their smoking behaviour in the context of their pregnancy and are designed to exclude responses that could paint pregnant women smokers as being irresponsible. Despite the improvement in disclosure observed with this technique, new approaches to ascertain smoking status are needed for both pregnant and other smokers.

2. Quantifying the exposure of pregnant women, fetuses, infants and young children to environmental tobacco smoke and measuring its effect on maternal morbidity, fetal and infant outcomes and childhood morbidities. Methods for accurately quantifying ETS exposure that are accurate, non-intrusive and economical need to be developed for use in settings where pregnant women, infants and children are present.
3. Establishing the linkages between exposure to varying levels of ETS and maternal outcomes, including miscarriage and infant and child outcomes.

Research Context

All of the studies included in meta-analyses to determine best practices for achieving cessation among pregnant smokers and smokers in general, have been conducted as randomized, controlled trials. These meta-analyses are summarized in *Treating Tobacco Use and Dependence: A Clinical Practice Guideline*.¹

Key Research Questions

The following topics regarding treatment for pregnant smokers will require additional research:

- Ethical issues associated with the routine use of
 1. Biochemical validation of smoking status
 2. Biochemical feedback to increase the likelihood of cessation
 3. Incentives for pregnant smokers to remain smoke-free.
- Understanding the motivation of spontaneous quitters.
- Efficacious treatments for highly dependent smokers, spontaneous quitters and women who quit smoking during pregnancy.
- The most efficacious amount of contact time, number of sessions and duration for smoking cessation interventions with pregnant women.
- The efficacy of various counselling and behavioural therapies and motivational interventions (eg, the physiological feedback of adverse impacts and the benefits of quitting).

- The safety and efficacy of tobacco dependence pharmacotherapy during pregnancy with regard to the woman and fetus and to the woman and child during nursing.
- The effects of smoking with the concomitant use of tobacco dependence pharmacotherapies.
- The efficacy of targeted or individualized interventions during pregnancy.
- Strategies for linking pre-conception, pregnancy and postpartum (including pediatric) interventions.

The primary research needs with regard to reducing ETS exposure are as follows:

- Mechanisms for accurate, economical and non-intrusive biochemical assessments of ETS.
- Methods for establishing the relationship of ETS to various health and behavioural outcomes while accounting for confounding variables and identifying underlying mechanisms that explain observed linkages.

Recent Research Results

The Effects of Smoking

Smoking remains the single most important preventable cause of poor birth outcomes. The elimination of smoking during pregnancy would result in 20% fewer low birthweight deliveries and 10% fewer infant deaths each year in the United States alone.⁵ Women who smoke are at increased risks for ectopic pregnancy, spontaneous abortion, preterm premature rupture of membranes, abruption of the placenta, placenta previa and preterm delivery.⁵ The risk for perinatal mortality – both stillbirth and neonatal deaths – and the risk for Sudden Infant Death Syndrome (SIDS) are also increased among the offspring of women who smoke during pregnancy.⁵ Infants born to women who smoke during pregnancy have a lower average birthweight and are more likely to be small for their gestational age.⁵ Women smokers are less likely to breastfeed their infants.⁵

Children exposed to ETS are at higher risk for SIDS, otitis media, new and exacerbated cases of asthma, bronchitis, pneumonia, wheezing, and lower respiratory tract illnesses.^{5,6}

The Effectiveness of Interventions for Smokers

The literature on tobacco treatment supports the widespread adoption of **screening** for tobacco use and **treatment** for all tobacco users.¹ Every patient who uses tobacco should be offered treatment. Those patients unwilling to try to quit smoking should be provided a brief intervention designed to increase their motivation to quit.¹ Three types of counselling and behavioural therapies should be used with all patients attempting tobacco cessation:

- Provision of practical counselling (problem solving/skills training, such as learning from past quitting experiences, anticipating triggers or challenges in quitting, and dealing with other smokers in the household)
- Provision of social support as part of treatment (intra-treatment support from the provider or an external source such as a smoking help or quit line)

- Help in securing social support outside of treatment (extra-treatment social support from family, friends and co-workers).¹

Effective pharmacotherapies for smoking cessation should be used with all patients attempting to quit smoking except in the presence of contraindications. The first-line pharmacotherapies that reliably increase long-term smoking abstinence rates are bupropion SR, nicotine gum, nicotine inhaler, nicotine nasal spray, and the nicotine patch. Second-line pharmacotherapies identified as efficacious include clonidine and nortriptyline and may be considered if front-line pharmacotherapies are not effective.¹

Treatment for Pregnant Smokers

Pregnant smokers should be offered psychosocial interventions that exceed minimal advice to quit and that include the provision of pregnancy-specific, self-help materials.¹ Although abstinence early in pregnancy will produce the greatest benefits to the fetus and expectant mother, quitting at any point during pregnancy can yield benefits.¹ Therefore, clinicians should offer effective smoking cessation interventions to pregnant smokers at the time of the first prenatal visit and throughout the course of a woman's pregnancy. The use of a structured question to improve disclosure is also recommended. Pharmacotherapies should be considered only when the pregnant woman is otherwise unable to quit, and when the likelihood of quitting, with its potential benefits, outweighs the risks of pharmacotherapy and potential continued smoking. If nicotine replacement therapies are chosen, the clinician should consider using medication doses that are at the low end of the effective dose range, and consider choosing delivery systems that yield intermittent, rather than continuous, drug exposure (eg, nicotine gum rather than the nicotine patch).¹ Because none of these medications has been tested in pregnant women for efficacy in treating tobacco dependence, the relative ratio of risks to benefits is unclear.

A five-step counselling approach adapted to meet these recommendations for pregnant smokers has been developed (see side bar).^{7,8} This "5-A" approach works equally well with women of various ethnic and racial groups but is less effective with pregnant women who smoke heavily (ie, more than one pack per day).⁹ Eliminating tobacco use during pregnancy could prevent several thousand low birthweight births and several hundred infant deaths each year in the US and save more than \$6 for every \$1 spent, more than doubling the overall cost savings attributed to the rest of prenatal care.¹⁰

The Five A's

Ask the woman about her smoking status using a multiple-choice question to improve disclosure.

Advise her to quit using clear, strong and personalized messages about the impact of smoking and the benefits of quitting for her and her fetus.

Assess her willingness to make an attempt to quit within the next 30 days.

Assist her with ways to quit by suggesting and encouraging the use of problem-solving methods and skills for quitting; providing support as part of the treatment; helping her arrange support among family, friends and co-workers; and providing pregnancy-

specific self-help cessation materials.

Arrange for follow-up contacts with her to assess her smoking status, encourage smoking cessation if she continues to smoke, and refer her to more intensive help if needed.

Conclusions

There is solid epidemiological evidence that maternal smoking during pregnancy can result in adverse outcomes in pregnant women, fetuses, infants and children. Women who quit smoking before or during pregnancy reduce the risk of seeing adverse reproductive outcomes. Children who live in smoke-free environments are also less likely to succumb to mortality and morbidity.

Smoking cessation programs based on current research findings are effective for both pregnant smokers and smokers in general. The most recent review indicates that extended or augmented psychosocial interventions exceeding minimal physician advice to quit smoking nearly tripled cessation rates among pregnant smokers.¹ Counselling and pharmacotherapeutic intervention with smokers also resulted in a doubling or tripling of long-term abstinence.¹

Despite these promising findings, abstinence achieved during pregnancy is not maintained for most women and clinical trials testing interventions to prevent relapse have not produced significant results. Similarly, little success in long-term abstinence has been reported from cessation programs for mothers of young children.^{5,11,12} The lack of effectiveness in these areas indicates that infants and young children are at risk of developing conditions related to exposure to ETS and that these women are likely to expose fetuses to tobacco smoke during future pregnancies.

Despite these limitations, existing evidence-based approaches for treating pregnant and parenting smokers should be widely implemented. At least 35% of women who quit smoking while pregnant remain smoke-free, improving not only their own health but also the health of their children and other family members.¹³ The return on investment for health care systems is significant and visible in the short term.

Implications for Policy and Services

Effective treatments exist and should be implemented for pregnant and parenting smokers. The health and economic benefits for individuals, families and society are significant and cost effective. If smoking cessation programs are properly and universally implemented, fewer children will die in the first year of life and will experience fewer smoking-related morbidities and other conditions throughout infancy and childhood.

Institutional policies facilitating the adoption of tobacco treatment interventions include:

- Implementing a tobacco user identification system in every health care context
- Providing education, resources and feedback to promote provider intervention

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- Dedicating staff to providing tobacco dependence treatment and/or referrals for treatment
- Monitoring and improving the quality of services delivered
- Including effective tobacco dependence treatments (including both counselling and pharmacotherapy) as paid or covered services in health insurance packages (in the United States)
- Reimbursing clinicians and specialists for the delivery of effective tobacco dependence treatments.¹

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