What Do We Know About Best Practice Prenatal Counseling Interventions In Clinical Settings?

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Objective

To summarize the current science base regarding prenatal smoking cessation counseling

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A Rich History

- First published report of a smoking cessation program for pregnant women in 1976
- Eight reviews between 1989 and 1998 used a variety of analytic methods and inclusion criteria for selected studies
- Conclusion from reviews:

  PRENATAL SMOKING CESSATION PROGRAMS ARE EFFECTIVE!

Source: Women and Smoking: A Report of the Surgeon General, 2001

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Five Recent Reviews

- Public Health Service: Treating Tobacco Use and Dependence (2000)
- Surgeon General: Women and Smoking (2001)
- Melvin & Gaffney: Treating Nicotine Use and Dependence of Pregnant and Parenting Smokers (2004)
- Cochrane Collaboration: Interventions for Promoting Smoking Cessation During Pregnancy (2004)
- AHRQ: Tobacco Use: Prevention, Cessation, and Control (2006)

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Public Health Service: Methods

Meta-analysis of randomized controlled trials published between Jan 1975 & Jan 1999

Reference condition

- Minimal Intervention: counseling lasting < 3 minutes
- Usual Care: recommendation to stop smoking, often supplemented by provision of self-help material or referral to a stop-smoking program

Intervention condition

- Extended or augmented psychosocial interventions typically involve reference treatment components as well as more intensive counseling than minimal advice

Source: Fiore MC, Bailey WC, Cohen SJ, et al., Treating Tobacco Use and Dependence: 2000

Public Health Service: Findings

- Extended or augmented counseling interventions are significantly more efficacious than usual care in pregnant women
- Estimated OR: 2.8 (95% CI 2.2, 3.7)
- Estimated abstinence rate: 16.8% (95% CI 13.1, 20.5)

Source: Fiore MC, Bailey WC, Cohen SJ, et al., Treating Tobacco Use and Dependence: 2000

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Public Health Service: Recommendations

- Assess pregnant woman's tobacco use status using a multiple-choice question to improve disclosure
- Congratulate those smokers who have quit on their own
- Motivate quit attempts by providing educational messages about the impact of smoking on both the woman and the fetus
- Give clear, strong advice to quit as soon as possible

Source: Fiore MC, Bailey WC, Cohen SJ, et al., Treating Tobacco Use and Dependence: 2000

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Public Health Service: Recommendations

- Suggest the use of problem-solving methods and provide social support and pregnancy-specific self-help materials
- Arrange for follow-up assessments throughout pregnancy, including further encouragement of cessation
- In the early postpartum period, assess for relapse and use relapse prevention strategies recognizing that patients may minimize or deny

Source: Fiore MC, Bailey WC, Cohen SJ, et al., Treating Tobacco Use and Dependence: 2000

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Surgeon General

- Review of randomized, controlled trials published between 1976 and 1998 with biochemically confirmed abstinence
- Found that using pregnancy-specific programs can increase smoking cessation rates, which benefits infant health and is cost-effective

Source: Women and Smoking: A Report of the Surgeon General, 2001

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Melvin & Gaffney: Methods

- Review of randomized, controlled intervention trials for pregnant smokers at the individual level published between January 1, 1999 and March 31, 2003
- Described the overall impact of cessation interventions and on interventions designed to:
  - Improve disclosure of smoking status
  - Maintain spontaneous quitting and cessation both prenatally and postpartum
  - Minimize exposure to secondhand smoke
  - Evaluate adjuncts to augmented counseling

Source: Melvin & Gaffney, Nicotine and Tobacco Research, 2004

Melvin & Gaffney: Findings

- Results consistent with those of the Public Health Service and the Surgeon General
- For women who are light to moderate smokers, the treatment recommended in 2000 is still consistent with the literature
- Augmented or extended counseling offers an efficacious and safe approach to improving quit rates among pregnant smokers

Source: Melvin & Gaffney, Nicotine and Tobacco Research, 2004

Cochrane Collaboration: Methods

- Review of randomized and cluster-randomized trials of smoking cessation programs implemented during pregnancy
- Published between January 2002 and July 2003
- 48 trials total were included; 36 trials had biochemical validation of cessation

Lumley, et al.,Cochrane Database of Systematic Reviews, 2004

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Cochrane Collaboration: Findings

- Significant reduction in smoking in the intervention groups for all trials
  - RR: 0.94 (95% CI 0.93, 0.95)
  - Absolute difference of 6 in 100 women continuing to smoke
- Similar results for trials with validated smoking cessation
  - RR: 0.94 (95% CI 0.92, 0.95)
- Smoking cessation interventions reduced
  - Low birth weight RR: 0.81 (95% CI 0.70, 0.94)
  - Preterm birth RR: 0.84 (95% CI 0.72, 0.98)

Lumley, et al.,Cochrane Database of Systematic Review, 2004

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Cochrane Collaboration: Findings

- Smoking cessation interventions resulted in a 33 g increase in mean birth weight (95% CI 11 g, 55 g)
- No statistically significant differences in
  - Very low birth weight
  - Stillbirths
  - Perinatal or neonatal mortality
- Financial incentives plus social support as an intervention strategy (2 studies) resulted in significantly greater smoking reduction than other strategies
  - RR: 0.77 (95% CI 0.72, 0.82)

Lumley, et al.,Cochrane Database of Systematic Review, 2004

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Ranney, Melvin et al: Methods

- Synthesized the four previous reviews (Public Health Service, Surgeon General, Melvin & Gaffney, Cochrane Collaboration) plus a few additional studies that met the inclusion criteria:
  - Smoking cessation studies conducted in developed countries
  - Randomized controlled trials of 30 or more participants
  - Published in English between January 1, 1999 and June 10, 2005
  - Primary outcome: quit rates at individual level

Source: Ranney, Melvin, Lux et al., AHRQ Evidence Report #140, 2006

Ranney, Melvin et al: Findings

- Concluded that although there was substantial variation in the intensity of the intervention and in the types of reminders and reinforcements that were provided, participants in intervention conditions experienced significant reductions in smoking during pregnancy
- Found no evidence to challenge conclusion of prior reviews

Source: Ranney, Melvin, Lux et al., AHRQ Evidence Report #140, 2006

So…What's New?

- Searched literature from March 2004 to March 2006
- Found 139 citations; two reviewers read all abstracts
- Pulled 7 articles
  - 5 were intervention trials; 1 was out of date range
  - 2 were not intervention trials
- Leaving 4 "new" studies

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So…What's New?

- Ferreira-Borges C: Effectiveness of a brief counseling and behavioral intervention for smoking cessation in pregnant women (2004)
- Polanska K, et al: Efficacy and effectiveness of the smoking cessation program for pregnant women (2004)
- Rigotti, et al: Efficacy of telephone counseling for pregnant smokers (2006)
- Tappin, et al: Randomised controlled trial of home based motivational interviewing by midwives to help pregnant smokers quit or cut down (2006)

So…What's New?

- In Portugal, a brief counseling and behavioral intervention increased tobacco abstinence in the intervention compared to the control group (Ferreira-Borges C, 2004)
  - 33.3% vs 8.3% ($p < 0.02$)

- In Poland, the odds of quitting smoking was significantly higher in the intervention group than in the control group (Polanska K, et al., 2004)
  - OR: 2.5 (95% CI 1.8, 3.7)

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So…What's New?

- In the U.S., proactive pregnancy-tailored cessation counseling via telephone was compared to "best practice" brief-counseling (Rigotti, et al, 2006)
  - No overall differences in cotinine-validated 7-day tobacco abstinence rates between intervention and control groups at end of pregnancy
- However, intervention increased end-of-pregnancy cessation rates
  - Among 201 light smokers: 19.1% vs. 8.4%
    (OR: 2.58, 95% CI 1.1, 6.1)
  - Among 193 smokers who attempted to quit in pregnancy before enrollment: 18.1% vs. 6.8%
    (OR: 3.02, 95% CI 1.15, 7.94)

So…What's New?

- In Scotland, motivational interviewing did not significantly increase smoking cessation among pregnant women enrolled in prenatal care in two maternity hospitals in Glasgow (Tappin et al, 2006)

What's Old is New Again

- What we knew in 2000 has stood the test of time and repeated trials
- For light to moderate smokers, extended or augmented counseling increases the likelihood of cessation
- The components of extended or augmented counseling are still supported
- Many enhancements have been tested but none have produced results compelling enough to change current recommendations

Therefore:

- Tell every provider you know that counseling pregnant women to quit smoking works
- Tell every pregnant smoker you know to ask her provider for help
- Support systems and policies to increase the use of these recommended counseling approaches

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