SMOKING INTERVENTION IN THE ANTENATAL PERIOD

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Smoking has been described as the single most important preventable cause of perinatal mortality and morbidity in our community. The US Center for Health Promotion and Education (1985) considered the evidence that smoking causes intrauterine growth retardation strong enough to recommend the use of the diagnostic term "fetal tobacco syndrome". Therefore, it is imperative to consider measures designed to reduce smoking during pregnancy.

Over the past decade, reports have suggested that the proportion of smokers who quit by the time of their first antenatal visit is around 18-30%. However very few smokers (less than 6%) give up later in pregnancy to judge from the experience of control groups in randomised trials. This means that approximately 25-30% of women smoke throughout their pregnancy and, although many report a decline in consumption, about 10% of smokers actually smoke more heavily. Smoking prevalence is higher in women of low socio-economic status. For example, at the John Hunter Hospital 38% of women are still smoking at their first antenatal visit.

It has been argued that most anti-smoking `advice' in pregnancy ignores the problem of physical and psychological addiction, the meaning of the behaviour for the women involved, and the guilt and anxiety felt by those who continue to smoke in the face of exhortations to give it up. The difficulty that pregnant women have in quitting smoking was forcibly illustrated by a recent Australian study which showed that success rates for ceasing or reducing alcohol use were reportedly much higher than that for tobacco. No women claimed to have tried to modify their drinking behaviour and failed but 40% of the smokers reported that they had unsuccessfully tried to change their tobacco intake.

Doctor as an Agent of Change

More than 85% of doctors believe smoking cessation is an important health promotion service and 75% feel it is their job to educate their patients about the risks of smoking. In addition, a Newcastle (NSW) survey found that smokers in the community (84%) expect their GP to give advice on smoking cessation. It is likely that this expectation would be even higher amongst pregnant women who in many cases are receptive to advice concerning their pregnancy.

Another Newcastle study noted that GPs did not detect 52% of female smokers attending their surgeries for antenatal care or contraception. In six studies of postpartum women an average of only 31% of smokers could recall receiving any smoking advice from their GP.

To ensure a high level of detection and intervention it is essential that a smoking history is taken routinely at the first antenatal visit. The patient's smoking status should be noted in the medical record in such a way that the GP is prompted to follow-up this issue with identified smokers at subsequent visits.

Early detection of smokers is crucial since the greatest benefit to the fetus occurs when cessation of smoking occurs early in pregnancy. In fact the US Surgeon General (1990) has reported that women who stop smoking during the first 3 to 4 months of pregnancy reduce their risk of having a low birthweight baby to that of women who never smoked. There is no demonstrated improvement in birthweight from smoking cessation after 30 weeks gestation. For this reason smoking is a critical issue to discuss at the time of diagnosis of pregnancy.

An ideal opportunity for smoking intervention occurs when a GP is aware that a smoking female patient is planning to become pregnant. The effects of smoking on fertility could also be discussed in this context. Some commentators have argued that the stresses imposed by pregnancy make it more difficult for some women to stop smoking but pre-pregnancy counselling would overcome this problem.

Paternal Smoking and Childhood Cancer

There is evidence that DNA damage to sperm by free radicals in a smoking male is responsible for an increased rate of childhood cancers in the offspring of smokers. It has been calculated that about 15% of childhood cancers may arise through the mechanism of preconception DNA damage of which smoking is an important preventable cause. Preconception counselling of male smokers is the only opportunity possible for prevention.

Intervention Options for the General Practitioner

Evidence suggests that many women do not appear to have a clear understanding of the effects that smoking might have on their baby, nor the size of the risks involved. Interventions have been shown to be effective in encouraging patients to stop smoking both in pregnancy and at other times. Generally the more intensive the intervention the greater the cessation rate achieved. Therefore the choice of intervention largely depends on the time available and the motivation and skills of the doctor.

Option 1 - Brief Advice
Time commitment 1-2 minutes

Two randomised clinical trials with smokers have shown that brief advice from GPs, providing a booklet and the warning of follow-up produced low (approximately 5% but significant), long-term cessation. Studies of pregnant smokers have confirmed that strong advice in the antenatal period to quit smoking is effective in motivating a small, but significant proportion of women to quit. For example a study of 110 pregnant smokers in Manchester, England, found that 14% of the treatment group had quit, compared to 4% of the control group. Women most likely to accept stop smoking advice are those who are lighter smokers, have pregnancy-related symptoms or are primiparous. Hearteningly no studies have ever shown an increase in smoking from such intervention.

Option 2 - Medium Behavioural Intervention
Time commitment 5-10 minutes with brief follow-up(s).

Interventions which include discussion about methods of quitting in addition to the provision of risk information have the potential to increase the effectiveness of a GP's advice. Behavioural strategies aim to tailor information about the health risks of smoking so they are personally relevant to the individual patient and then to build on this information to motivate patients to quit. The GP attempts to address the patient's fears about such problems as nicotine withdrawal and coping with stress. The patient is also encouraged to develop alternative behaviours which will extinguish previous smoking-related patterns.
Behavioural interventions have produced chemically validated cessation rates of about 10% in non-pregnant subjects at one year follow-up. This is a significantly higher cessation rate than that usually found in controls or brief advice conditions. Behavioural approaches targeting pregnant smokers also have considerable potential. The provision of pregnancy-specific smoking cessation literature and follow-ups by the GP at later visits is likely to increase the effectiveness of such interventions.

Windsor and Orleans (1986) have estimated that an intervention which teaches pregnant women how to stop smoking would produce quit rates of approximately 15% in public clinics and 25% in private practice. This paper describes a desirable format for such an approach.

Option 3 - Intensive Behavioural Intervention
Time commitment greater than 10 minutes; two or more sessions.

When physician intervention included approaches in addition to counselling such as written reminders, home visits or self-help manuals, the median quit rate for non-pregnant subjects in 10 trials with 1-year follow-ups was 22.5%. For example, an intensive intervention described by Richmond et al achieved a long term lapse free abstinence rate of 22%. Even more impressive at three year follow-up 36% in the treatment group were abstinent compared with 8% in the control group. The intervention employed in this study involved a questionnaire, health information, problem solving counselling and a number of physiological tests including height, weight, lung function and assessment of blood levels of cotinine and carboxyhaemoglobin. The programme was spread over six sessions although only 37% of patients attended all sessions.

The incorporation of physiological tests in this study may have increased patient acceptance by giving the programme a stronger medical rationale. If this is the case there may be some parallels with an approach described by Reading et al where women who were at low risk of complications in pregnancy and between 10-14 weeks menstrual ages were routinely given an ultrasound and randomly assigned to a high or low feedback condition. Women who were provided with specific verbal, visual feedback as to fetal size, shape and movement while watching the monitor were more likely to stop smoking. This trial was conducted in the period before ultrasound technology was so widely available.

A major trial in a public antenatal clinic (Sexton and Hebel, 1984) which was the first randomised prospective study to demonstrate that a reduction in smoking improves infant birthweight, achieved a 27% quit rate (3% controls) using a combination of personal counselling and at least one home visit supplemented by frequent telephone and mail contacts.

Option 4 - Referral to a Smoking Cessation Clinic

Although clinics providing specialised smoking cessation services achieve impressive long-term abstinence rates of 15-50% they only attract a small proportion of the population. In addition such clinics are mainly appropriate for patients with high motivation and the willingness to commit 4-9 hours of their time excluding travel. Studies in the antenatal period have confirmed that few pregnant smokers who are referred actually attend specialist quit clinics even if they indicate a desire to stop smoking. Self-help approaches appear to be acceptable to more women. However, the low rate of attendance should not preclude the positive offer of referral.

Suggested Format for a Desirable GP Antenatal Smoking Intervention

Given the constraints of time and the evidence regarding effectiveness, the following format summarises a desirable GP smoking intervention in the antenatal period:

1. Identify smokers at the first antenatal visit and enter a prominent memory jog in the patient's medical record. Commence intervention at this diagnostic interview.

2. Find out what the patient knows about the risks of smoking and, in particular, emphasise their effects during pregnancy.

3. Inform the patient of the known risks and dispel myths and misconceptions, e.g. that a small baby is advantageous.

4. Determine the patient's self exemptions and counter these, e.g. "my sister smoked and she had a big baby", "they say you shouldn't smoke but my Paul was 8.5 lbs and he's very bright", "I only smoke ultramild cigarettes".

5. Determine the barriers to quitting and offer solutions, e.g. fear of withdrawal, inability to cope with stress, fear of excessive weight gain.

6. Motivate the patient and express confidence in the patient's ability to quit.

7. Determine the patient's willingness to quit and negotiate a definite quit date. NB Always reassure patients they can return for antenatal care even if they continue to smoke.

8. Provide guidelines for an effective quitting method including: discussion of alternative behaviours and coping mechanisms and encouraging the patient to seek support from an appropriate friend or family member. Abrupt cessation should be strongly recommended rather than a tapering procedure. If the patient is committed to a reduction approach, encourage her to set a date (preferably in the next seven days) when she will stop completely.

9. Answer questions. Reinforce the importance of the quit date. Arrange follow-up approximately one week later.