# Routine advice against smoking in pregnancy *

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SINCE the first suggestion (Knopf, 1929) that smoking in pregnancy might harm the child, there have been more than 40 separate studies of the subject. This paper summarises their findings and reports briefly an attempt to prevent the growth retardation of smokers' infants. The anti-smoking techniques used in this attempt are presented in detail.

## What happens to the child when a pregnant woman smokes ?

There is general agreement that the smoker's infant suffers from retarded intra-uterine growth. It is lighter at birth, and little of this weight difference is accounted for by the smoker's pregnancy being one day shorter. The weight retardation at birth has varied from one study to another, but the figure of 170g (6 oz) from a survey of all births in Great Britain in the first week of March 1958, is representative (Butler and Alberman, 1969).

Confirmation of the retardation is provided by metabolic studies on smokers' infants which suggest they share the metabolic acidosis and haemoconcentration of the small-for-dates group Younoszai, Kacic, and Haworth, 1968). What is less well known, and needs to be stressed, is that this syndrome may have permanent ill-effects. For example, when the children from the 1958 study were followed to age 11, the smokers' children were found to be shorter, and behind with their reading and mathematics (Butler and Goldstein, 1973).

There are conflicting observations on everything else. Some authors have found an increased risk of abortion among smokers, while others have not (U.S. Public Health Service, 1973).

A few authors have studied the relationship between smoking and the total incidence of congenital malformations, and all such reports have been negative. However, when various malformations were investigated separately, smokers' infants were found to have a higher incidence of congenital heart disease (Fedrick, Alberman, and Goldstein, 1971).

There has been most argument about the relationship between smoking and perinatal mortality. To take one extreme, Yerushalmy (1964, 1973) has vociferously denied that there is one. This aspect has however been considered many times and a recent review concluded that smokers have a one-third increase in perinatal mortality, principally in stillbirths (Rush and Kass, 1972). The relative increase in mortality appears to be higher in high-mortality populations and it is possible that the explanation for Yerushalmy's negative findings is that he was studying a relatively low-mortality population (Goldstein, 1972). The causes of the excess mortality have been examined only in

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the study of 1958 births, where conditions associated with small-for-dates babies accounted for almost all the excess (Butler and Alberman, 1969).

There is even controversy about whether the growth retardation is due to smoking. A few workers argue that smoking is not harmful *per se* but merely an index of some other factor that is harmful and more frequent in smokers (Hickey *et al.*, 1973). No such factor has been identified and the other evidence involved in support of this view is weak.

The mechanisms of this growth retardation are not certain. The most likely possibility is fetal hypoxia caused by carboxyhaemoglobinaemia which has been reviewed by Longo, 1970. Other substances such as nicotine (Becker and Martin, 1971) and thiocyanate (Andrews 1973) may act in addition.

## Can the damage be prevented ?

The only way to determine whether the effects of maternal smoking can be prevented by any form of antismoking advice is by a systematic test with controlled observations. We have conducted such an evaluation of intensive individual antismoking advice, and found that the infants did not benefit. Possible reasons for this are discussed in detail in a report on these aspects of the evaluation, but the most likely explanation is that the damage had been done by the time the patients acted upon the advice; even though counselling was given from presentation for antenatal care reductions in amount smoked were not maximal until the third trimester.

It must be admitted that this goes against standard obstetric teaching. The basic observation, which has been made many times, is that the woman who of her own accord stops smoking in early pregnancy and maintains this has the child of a non-smoker; therefore, it is argued, the damage is done in late pregnancy. But not all smokers take the same dose, and we have found that the woman who gives up in early pregnancy is usually a light smoker, and rarely inhales much of what she does smoke. To all intents then, she is a non-smoker, so it is not unexpected that she has the child of one. Hence the usual interpretation may not be justified.

From this study we have concluded that if antismoking advice is to benefit the child it will have to start earlier, presumably before the patient becomes pregnant. The general practitioner, who will be the patient's major medical contact at this time, will play the key role. One other possibility that needs to be considered is for antismoking advice to be given with contraceptive services.

## How is the damage prevented ?

The first requirement is that those who give advice believe they are doing something worthwhile. Unfortunately, many doctors and midwives regard retarded growth not as a disease but as " the lower end of normal." Arguments as to what is " normal " and what is " abnormal " are irrelevant; the fact is that smaller babies have a worse outlook. Therefore prevention is needed.

The second problem is to stop the mother's smoking. The counselling techniques described below were used with pregnant patients in our investigation. They adapt readily to use before pregnancy. It should be noted that they concentrate on the points peculiar to pregnancy—all the patients are young women and all have a special motivation for giving up. The techniques can be used routinely, but there are, of course, occasions, as for example where the patient has already had a perinatal death, where the presentation should be modified.

In outline, our counselling has been simple. In practice, however, we each evolved our own variations on this outline, and we suggest others should do the same:

(1) Tell the patient the facts about smoking in pregnancy,

(2) Encourage questions about these facts,

(3) Once the patient has agreed to try, discuss how she may best give up,

(4) Follow up the advice at later contacts.

In our experience all four stages are essential. First patients should not simply be advised to stop, but should always be given reasons for doing so as well. Clearly if the limit of a patient's understanding is a doubled risk of a premature baby, the pathogenesis of fetal hypoxia is not discussed. Just how much a particular patient should be told must be decided by the person who knows her, and that is her general practitioner.

Secondly, questions should be encouraged. The word 'doctor' means teacher. There was a time when education was a one-way process, but this has gone; the pregnant patient is young enough to be accustomed to asking questions. So even if this is not the best way to handle an older smoker, questions have a place.

Next, always give the patient a chance to decide for herself that she should give up. Often this comes spontaneously; if it does not it can be helped along by saying "Now Mrs Smith, I'm sure we want to do the best for your baby," with which very few mothers will disagree. Choosing a method is the hardest part. Time is short and a clean break is preferable if the patient's personality will stand it. But this is unusual, and cutting down as rapidly as the patient can manage has to be accepted.

Throughout the period of cutting down, support will be needed and contact must be maintained. In other words, reinforcement is essential. Pregnant women receive so much advice that saying something once is not enough, especially if only one person mentions smoking; in this respect starting before the pregnancy is an advantage. Let others know what has been done, and before long the whole idea becomes routine practice.

General practitioners could say in letters of referral "I have already advised the patient to stop smoking, but would be grateful if you would reinforce this when you see her . . ." Similarly the midwife too can be involved. The most helpful of all, because he sees the patient most often, is the father, who may even be a non-smoker. Or sometimes one can counsel both husband and wife together; certainly general practitioners are better placed to do this than anyone else. In general practice there are many opportunities for reinforcement.

From hospitals we have had great success with writing to patients two weeks after we see them, at a time when the longing is still present and the motivation may have faded a little, but whether secretarial support in general practice is adequate for this we do not know. The ideal is a second consultation at this stage; practitioners who do not have enough time to do this with all smokers, may wish to concentrate on the heaviest smokers and those at risk for other reasons.

With this regimen some patients stop altogether, the majority cut down, and some do not respond. In all we achieve and maintain a 50 per cent reduction among women who are still smoking at the time of the first antenatal visit; in this figure we do not include the large number who have given up spontaneously before presentation (and who incidentally should be advised against resuming in late pregnancy, which 40 per cent of them would otherwise do). It may be that this 50 per cent reduction is all we can expect until we can attack the factors which keep patients smoking. In first pregnancies these are anxiety about housing and money, and the boredom that occurs when the woman gives up work a few weeks before the child is born. With the multipara the drudgery of being housebound is a problem throughout pregnancy.

## Common problems in counselling

Patients respond in different ways to antismoking advice just as they do to anything else. The reaction that has been the most worrying to us has been iatrogenic anxiety: " How much damage have I already done? "; " I'll never forgive myself if anything goes wrong." We have, however, been handicapped by having to counsel as soon as we met patients who were already pregnant; time devoted to discovering their attitudes to pregnancy came out of that available for counselling. In the special circumstances of a controlled trial of counselling this has been appropriate, but it will be obvious that in hospitals counselling given by someone who has just taken the patient's history can be adapted to provoke less anxiety. The general practitioner who has known the patient for some time probably can do best of all, especially if the patient is not yet pregnant.

The worst prognostic indicator is disbelief, and where the patient is already pregnant there is little hope of overcoming this in the time available. Strange as it may seem we have had this from both ends of the social spectrum. We all expect occasional opposition from patients with impoverished backgrounds where smoking is part of the culture. But, at least in London, there are women who have read so much about pregnancy that they take the attitude that if they didn't know about the hazards of smoking there couldn't be any. The difficulty occurs because many of the books these patients have read do not even mention smoking, and those that do use some wishy-washy phrase like ' desirable to cut down,' which never influenced anybody. Pressure on the authors from groups like Action on Smoking and Health (ASH) is surely indicated.

There are only two common arguments and there is a ready counter to each. The first is " I/My sister smoked all the time I/she was carrying little Alfie and he's not retarded." The point to make here is how much better little Alfie would have been had she not smoked. Why harm a second child? Or you may say " You were lucky that time but . . ."

The other one is " I'll put on weight." Many of us were trained at a time when high weight gain was bad obstetrics. The fact is that low weight gain is a sign of poor fetal growth, but removing the old wives' tales from textbooks and from the traditions of midwifery always takes time. Unfortunately a few patients whom we have managed to stop smoking have been told by others to take it up again to control their weight gain.

Another idea that needs to be banished from our folklore is the common belief that having a small baby is a good thing. Several patients, when told of the smaller babies they would be producing said " Good, I want a small baby, I'll keep on smoking." Disillusioning them has not been easy. There is no question that the consequences of retarded growth need to be better known.

Finally there is the patient who says " Can I just cut down? " If this has been asked as a question we answer that ten is less harmful than 20, but not nearly as good as not smoking at all. Much more likely however, is that it is not a question, it is a cry for help from a patient who wants to give up but who also fears that she will not achieve much without support. She deserves it.

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## CIGARETTE SMOKER'S BRONCHITIS: THE EFFECT OF RELIGHTING

Male volunteers for mass radiography examination aged 40 or more were questioned about their sputum production, smoking habits and, when applicable, their method of smoking cigarettes.

Of 5,438 cigarette smokers, 1,051 (19 per cent) claimed that when smoking a cigarette they usually extinguish it at some stage and later relit it to smoke again. Anyone who admitted to producing sputum from his chest on most days of the year, or on most days for a minimum of three months of the year for at least two years, was classed, in the absence of other causative disease, as a chronic bronchitic. Such chronic bronchitics totalled 1,864 (34 per cent).

The rate of chronic bronchitics among relighters (39 per cent) was higher than the rate (32 per cent) among the remaining cigarette smokers. The difference was of high statistical significance ($P<0{\cdot}001$), and the same pattern was maintained when age and cigarette consumption were standardised. After allowing for a trend towards lower social class and a preference for plain as opposed to filter cigarettes, the rate of chronic bronchitis among relighters was about 15 per cent greater than that of the remaining cigarette smokers.

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## REMOVING PATIENTS FROM LISTS

Mr William Hamilton asked the Secretary of State for Scotland in Parliament if he would review the practice by which a family doctor can remove patients from his panel without giving reasons for so doing to the patient, the local executive council, or to the area Board.

Mr William Ross replied " The right of the family doctor to have the name of any patient removed from his list simply by giving the required notice to the health authority is written into his terms of service. I am not aware that this provision, which is the converse of the patient's right to change his doctor, has given rise to any serious difficulty in practice. There are provisions to ensure that patients who are removed are not left without the services of a doctor."

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