

Advising patients on the risks of oral contraception

STEPHEN BLACK and KENNETH WATTS

Social Technology Associates
Manchester

ACCORDING to Peel and Potts (1969) "The woman who begins taking oral contraceptives has a greater likelihood of being alive one year later than has her sister who chooses to have a baby or to use some less effective method of contraception." This statement is fairly well known because many oral contraceptive salesmen have used it (and an accompanying table) as a sales aid. The implication is that oral contraceptives are safe. Indeed the safety is now even more assured because of the move to lower oestrogen dose products. This move was brought about by the researches of Inman *et al.* (1970) and the action of the Committee on Safety of Drugs.

Inman *et al.* demonstrated that the risk of thrombo-embolic disease for oral contraceptive users was related to the amount of oestrogen in the contraceptive. At the press conference called by the Rt Hon Richard Crossman following the publication of Inman *et al.* and the statement by the Committee, two points were made: (1) The risk of fatality had been reduced from 3 per 100,000 to 3 per 200,000; (2) "A woman would have to take the pill for 16 years in order to equal the risk of one single pregnancy" (according to Sir G. Godber, Chief Medical Officer, Department of Health). All this seems reassuring—oral contraceptives are safe. Unfortunately, as we shall attempt to show such a conclusion is not valid for the practitioner faced with offering advice to his patients.

Let us return to the Peel and Potts' statement and the method reached to arrive at such a conclusion. The method is fairly simple and the stages are as follows. First, consider some theoretical size of population (merely to give some 'life' to the statistics) and assume that the population all use one contraceptive method. Second, multiply the population figure by the contraceptive failure rate. Third, given a figure from step two, i.e., number of pregnancies, multiply this by the risk of death in pregnancy. This gives us the number of deaths resulting from pregnancy. Fourth, multiply the original population figure by the risk of death figure. Finally, add the figures of steps three and four to obtain the total death rate for the given contraceptive method. The above procedure may be used for any contraceptive method or even no contraceptive. The resulting figures allow us to compare the risks of various methods. An extract of the Peel and Potts' table is presented.

			<i>Women of all ages. Annual deaths through:</i>		
<i>Contraceptive method (one million users)</i>	<i>Failure rate</i>	<i>Pregnancies</i>	<i>Pregnancy</i>	<i>Method</i>	<i>Total</i>
Oral contraceptive	1·0	11,000	3	20	23
Condom	10·0	106,000	28	—	28
Diaphragm	20·0	200,000	52	—	52

From the table the safety of the oral contraceptive is clear. Moreover, given the move to a lower oestrogen content, the risk for oral contraceptives would be about 10,

and the total 13. Possibly this figure will be higher in the future if myocardial infarction can be demonstrated to be a hazard of oral contraceptives. But it is also possible that the oral contraceptive saves lives. There is evidence that certain types of cancer may be less frequently found amongst oral contraceptive users. This would suggest revising downwards the mortality statistics. There are not only grounds for suggesting the mortality rates are too low but also grounds for suggesting they are too high. In our present state of knowledge, the figure 13 seems acceptable, and the implication is that oral contraceptives are safe. But such a reassuring analysis is too crude to form a basis for advice to an individual woman. There are three points we must consider: the risk of conception, the risk of death from pregnancy and the death risk of oral contraceptives.

First the risk of pregnancy in any given time will depend upon the fertility of the couple, the number of times the woman is at risk, and the combination of contraceptive techniques. If a couple used both the condom and diaphragm the failure rate would be about 2 in 100—not very different from that for oral contraceptives. Although there would be more pregnancies and hence deaths from pregnancy (about six) using a combination method of contraception, there would be no deaths from the method itself. Overall, the advantage lies with the combination method with a death risk of about half that of oral contraception.

Additionally, a woman seldom at risk (perhaps because the husband travels frequently or because the couple have a low sex drive), or a couple relatively infertile, would record far lower pregnancy rates than typical. This would place oral contraceptives at a relative disadvantage. While for any method or combination of methods, the risk of pregnancy and hence death from pregnancy is declining, the risk of death from oral contraception cannot be avoided. To be sure, the failure figures for contraceptive methods shown in the table are averages. Certain women could do better and run a lower risk of pregnancy. This will make oral contraception relatively less safe for such women. Once again pregnancy mortality can be lessened for any contraceptive procedure but death from oral contraception cannot.

Risk of death

Turning to the risk of death from pregnancy, there are a number of causes and these may be classified in a number of ways. Thus the causes of maternal mortality include sepsis, haemorrhage and toxæmia; deaths associated with pregnancy may be caused by neoplasms, mitral valve disease, other heart disease, diseases of arteries, veins, circulation, or pneumonia. Of all the classifications possible, one seems crucial. Women with poor health are more likely to die in pregnancy than women with good health. It follows that a healthy woman would be running far less of a risk with a condom than would her less healthy sister. Again, the risk of dying from a complication of childbirth or the puerperium is far lower for young women than for old; higher for the first child and far lower for the second and third, but rising after that. Moreover, older women may be running a higher than average risk in the second pregnancy as well as the first. A young, healthy woman, already a mother of one child, will be less bothered by the risks she runs of death from pregnancy than her elder sister who has had no children and is in bad health. This should tend to turn the younger woman away from oral contraceptives.

The hazards of oral contraceptives when compared to the risks of pregnancy are often presented in such a way as to suggest that the risk of pregnancy is an alternative to the hazard of oral contraception. This is false. The woman using oral contraceptives will generally choose to have children. She will hope to become pregnant a number of times. To the extent that a woman chooses to become pregnant the same number of times as she would by using a less effective method of contraception than the

oral contraceptive, the woman has benefited in that she has planned the spacing of her family but she has to offset this by the risk of oral contraceptive use added to the pregnancy risk. Thus, for women who intend to have children but are not particularly concerned about the spacing, it is probably preferable to use oral contraception, only after the desired family size has been reached.

Characteristics of the user

Turning now to the oral contraceptive, not much is known about the type of woman who runs a greater risk by using oral contraceptives. To be sure, certain people run far greater risks—those with liver damage, or previous clotting history—however these people should not be using oral contraceptives. Of those people who do not fall into this category, there is generally little advice to give. Nonetheless certain facts and relationships are known. The first is concerned with age. The mortality rate for oral contraceptive users is approximately twice as high for women aged 35–44 as for women 20–34. Unfortunately older women also have a higher mortality risk in pregnancy; therefore older women cannot avoid risk merely by changing method. Use of a combination of non-‘pill’ contraceptives would seem indicated so as to avoid method hazards and to maintain a low pregnancy risk.

Blood group is another relevant factor. In a well-planned study Jick *et al.* (1969) found that women using oral contraceptives and belonging to blood group O had a lower probability of suffering a venous thrombo-embolism (about one-third or better) than women of other blood groups. We would expect women belonging to blood group O to be more inclined to use oral contraceptives than other groups.

A more complex relationship exists between smoking and oral contraception. Women who use oral contraceptives are more likely to smoke than women who do not (Kay *et al.*, 1969). It is likely that women who smoke heavily and use oral contraceptives have a higher risk of thrombo-embolism than do non-smokers or light smokers using oral contraceptives. (Frederiksen and Ravenholt, 1968 and Frederiksen *et al.*, 1969). This relationship could be caused by an interaction between smoking and oral contraceptives—as is argued by the authors. However there is another, more speculative hypothesis.

Smoking and extroversion

Professor Eysenck has suggested (1965) that smokers are extrovert and the physiological factors predisposing to extroversion predispose to cancer. Hence any studies linking smoking to cancer are not necessarily showing a causal relationship. In the same way, we believe that a similar relationship affects the evidence on the risks of oral contraception.

According to Eysenck, there are physiological differences that account for the differences between extroverts and introverts. As a result extroverts have a kind of “stimulus hunger” which leads to “their preference for coffee and alcohol, for spicy foods, for premarital and extra-marital intercourse, their impulsive and risk taking behaviour. . . .” As we have noted, women using oral contraceptives are likely to smoke. Moreover, it could be argued that, as women see it, taking oral contraceptives is risk taking behaviour. In other words, women using oral contraceptives are likely to be extroverts. This seems to be a hypothesis worth testing and we have tried to do this. For a sample of 80 women attending a family planning clinic, we found that women using oral contraceptives were more likely to smoke and that oral contraceptive users were more extroverted than non-users (Black and Watts, 1971). While not conclusive, our analysis is certainly suggestive. Thus we would argue that women who smoke

heavily and use oral contraceptives may not be reducing the hazard by reducing their cigarette consumption.

Summary

Summing up, is oral contraception safe? For the statistically average woman it is safer than the alternatives but for certain groups of women a general practitioner will meet, the other methods are safer. Thus for a couple using the condom and diaphragm, where the woman is in good health and has had no children, is young and blood group A, B, or AB, smokes heavily and is extrovert, she is safer *not* using oral contraceptives. Of course, this concentrates solely on risks and neglects benefits and the doctor (and patient) must try to attach some value to planned parenthood, more satisfactory sexual relations and so on. This is clearly hard to calculate. Nonetheless, the general practitioner must attempt to form some kind of equation allowing for all the factors we have noted. For some women a more traditional form of contraceptive technique will be indicated. To that extent, oral contraception is not safe despite assertions to the contrary.

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GENERAL PRACTICE STATISTICS

The 1971 *Digest of Health Statistics for England and Wales* includes the following data from general practice:

The average list size fell in 1969 to 2,460. The number of trainees in general practice in 1970 was 211, an increase of 31.

The number of assistants was 667 compared with 678 in 1970.

The number of women general practitioners rose to 2,637 compared with 2,512 in 1969.

ABORTIONS

The continuing rise in the number of abortions being carried out under the Abortion Act 1967 is shown by the following figures from the Department of Health and Social Security; the abortion rate per hundred live births has been as follows:

Year ending March, 1969	4·1
Year ending March, 1970	7·7
Year ending March, 1971	11·2

The rate for the quarter April-July, 1971 was 15·6.