

expanding the preliminary findings of the Committee on Safety of Drugs, were unable to show a definite association between coronary thrombosis and oral contraceptives, though such a possibility cannot be ruled out on the present evidence.

When deaths rather than illness from venous thrombosis were considered Inman and Vessey found a strong relation between the use of oral contraceptives and death from pulmonary embolism and cerebral thrombosis, especially in older women.

Vessey and Doll investigated the different preparations used by the patients in their series, but were unable to show any marked difference between various contraceptives. The oral contraceptives incriminated in venous thrombosis contain a number of very different progestogens, while only two very similar oestrogens are used in drugs marketed in Britain. There is other evidence that oestrogens may have an effect on blood clotting (2, 3). These findings suggest that it is the oestrogen rather than the progestogen which is responsible for the thrombosis, and if this is true there are three practical conclusions. Firstly, the sequential types of oral contraceptive may be more dangerous, since they contain more oestrogen than the combined pills. Secondly, the continuous-low-dose-progestogen technique (not considered in the trials reported), using such compounds as chlormadinone acetate (4), requires no use of oestrogen and may afford a means of avoiding thromboembolic effects. This technique is not free of disadvantages but it seems to be well worth careful evaluation with respect to the danger of thrombosis. Thirdly, the administration of oestrogen for any purpose—not only contraception—should be regarded as carrying a definite risk if the oestrogen is given for a long time or in high dosage. The use of oestrogens to reduce blood cholesterol in patients with coronary insufficiency or to suppress lactation (2) are particular cases in point.

The occurrence of thromboembolic disease in one out of every 2,000 women on the pill each year is disquieting. Should a doctor give a healthy young woman a prescription for an oral contraceptive if it may lead to her death? The picture must be seen in the perspective of the effect on the whole population. Other forms of contraception—apart from male and female sterilization—have high failure rates. The risk of death in pregnancy, even from thrombosis alone, is greater than that of taking oral contraceptives for the same length of time, though how many pregnancies would result from changing to other forms of contraception than the pill is speculative. So, while there is no cause for panic about the possible consequences of widespread use of the present types of oral contraceptives, neither is there room for complacency. No chair in clinical reproductive physiology exists in Britain, but co-ordinated interdisciplinary research in this field is urgently needed. The goal must be effective contraception, free of all risk, and psychologically fully acceptable. Women would give high priority to such research.

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PAPERS AND ORIGINALS—INVESTIGATION OF DEATHS FROM PULMONARY, CORONARY, AND CEREBRAL THROMBOSIS AND EMBOLISM IN WOMEN OF CHILD-BEARING AGE*

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The use of oral contraceptives in the United Kingdom has increased progressively during the past seven years and it is estimated that between 10 and 15% of married women were regularly using this method of contraception in

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