

Chest pain among oral contraceptive users

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SUMMARY. In a retrospective study carried out by means of a postal questionnaire sent to 550 oral contraceptive users and the same number of controls, matched for age and previous medical history, no significant difference was found between the two groups in the incidence of chest pain. When only chest pains of possible embolic nature were considered, the similarity in incidence in the two groups was even more marked.

Introduction

THE association between fatal thrombo-embolism and the use of the oral contraceptive Pill is well known (Vessey and Doll, 1968; Sartwell *et al.*, 1969) and the increased incidence of certain non-fatal thrombo-embolic events is also on record (RCGP, 1974). More recently, the association between oral contraceptive use and mortality from diseases of the circulatory system has been established (RCGP, 1977). On the other hand, comparatively little work has been published on minor thrombo-embolic episodes, manifesting as chest pain, which might also be related to oral contraceptive use.

Herrera (1972) studied 100 oral contraceptive users who presented with chest pain. He found that 36 per cent had suffered pulmonary embolism (diagnosed by perfusion lung scans). Of 50 controls, only 16 per cent were diagnosed as having emboli.

The RCGP Oral Contraception Study (RCGP, 1974) found all episodes of chest pain to be 1.33 times more common in oral contraceptive users, a finding which gained statistical significance ($p < 0.05$). McCracken (1976) has postulated that a chest pain syndrome due to minor episodes of pulmonary embolism might exist in oral contraceptive users, and has produced about 20 case reports to support his hypothesis.

Aim

I undertook a systematic study of chest pain in women of childbearing age to determine whether or not an association exists with oral contraceptive usage.

Method

Five hundred and fifty women known to be taking the Pill were randomly selected from the age/sex and contraceptive registers of two general practices, one in a Derbyshire industrial town and one in a middle-class suburb of Nottingham, and matched for age with 550 women thought not to be using oral contraception. Each woman was sent a general health questionnaire (later to be used by the practices) containing over 50 questions of general interest. One of these asked what form of contraceptive (if any) was being used, and another whether patients had suffered from chest pain bad enough to cause concern during the past year. These two questions were given no particular prominence amongst the others.

Accompanying each questionnaire was a carefully worded letter from the patient's general practitioner and a stamped addressed envelope.

Women who reported chest pain were sent a follow-up questionnaire which asked in simple terms about the severity of the pain, its nature (stabbing, burning, or a dull ache), its speed of onset and duration, and whether there had been any difficulty in breathing or pain on inspiration during the attack. Patients were also asked whether they had seen a doctor about the pain and if so what the diagnosis had been. They were asked to state, as nearly as possible, when the episode occurred.

An arbitrary system was adopted for 'scoring' the responses to this follow-up whereby pains resembling embolic episodes would score high and those not doing so would score low (Table 1).

Results

The initial questionnaire had a 55 per cent response rate, and after one written reminder from the general prac-

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Table 1. Method of scoring chest pain.

Item	Score
Pain: worse than toothache	2
about as bad	1
not so severe	0
Pain: of sudden onset	2
of gradual onset	0
Pain: causing anxiety or fear	1
not causing anxiety or fear	0
Pain: causing difficulty in breathing	1
not causing difficulty in breathing	0
Pain on inspiration	1
No such pain	0
Stabbing pain	2
Burning pain	1
Dull ache	0
Duration between 5 and 60 minutes	2
Any other duration	0
Residual ache after pain subsided	1
No such ache	0
Maximum possible score	12

Table 2. Conditions causing patients to be excluded from the study.

Malignant or unspecified neoplasms
Surgical operation within 90 days
Hospital inpatient treatment within 90 days
Pregnancy
Hypertension
Heart disease
Cardiovascular disease
Blood dyscrasias
Deep venous thrombosis and pulmonary embolism

itioner it rose to 77 per cent. Only three women said they objected to filling in the questionnaire. In the final analysis, there were 489 Pill users but only 289 controls (many women originally thought to be controls admitting to being oral contraceptive users). The frequency of chest pain of any type during the 12-month recall period was 7.3 per cent (57 patients). In Pill users it was 6.3 per cent (31 patients) and in controls nine per cent (26 patients). The difference was not statistically significant ($0.5 > p > 0.25$).

There was still no significant difference when the results had been standardized for age, and when women with a previous history of relevant medical complaints (Table 2) had been excluded from the study.

If those people not so excluded, who had pains considered to be likely to be of an embolic nature (more than eight points on the scoring system described in Table 1) are considered, the frequencies in the two groups become even closer to each other.

Forty-six per cent of chest pains in Pill users (seven cases) were high scoring; 43 per cent of those in controls (six patients) scored high. There was no significant difference in these frequencies ($0.9 > p > 0.75$).

Discussion

There is no reason to believe that there has been an over-reporting of chest pain in either group—both groups received the same questionnaire and neither knew that there was any particular interest in chest pain in relation to oral contraceptive use. The groups were matched for age and past medical history. The social class distribution of these women was similar to that of the country as a whole. The response rate was high, and the replies from those women who needed a reminder before replying were notably different from those who responded the first time. It was notable how similar the two groups were with regard to the frequency of high-scoring chest pain.

Conclusion

From this study, there is no evidence to implicate oral contraceptives with chest pain in women of childbearing age. Therefore, there appears to be no justification to change current prescribing habits and little reason to embark upon an extensive prospective study of chest pain in relation to Pill use, not least because the publicity arising from such a study before the results were known could well lead to unnecessary anxiety among women using the Pill and a decrease in the popularity of the most effective method of contraception at present available.

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Addendum

This article was written when Dr Williams was a final-year medical student at the University of Nottingham.