Griseofulvin modifies hepatic enzyme activity in mice,[1] so that enzyme induction and a consequent lowering of oestrogen concentrations may explain the intermenstrual bleeding on the basis of a withdrawal effect. Amenorrhoea is not so readily explained. Interestingly, however, rifampicin, a potent inducer of hepatic microsomal enzymes, causes the same range of cycle anomalies with intermenstrual bleeding, amenorrhoea, and unintended pregnancies in women using oral contraceptives.[2]

The contributory role of griseofulvin in the two reported pregnancies is not established, as both women were also taking sulphonamides. These drugs may affect the enzymes concerned in steroid metabolism, at least in vitro,[3] but are not a well established cause of pill failure.

Pharmacokinetic studies may help in assessing the possible interaction between griseofulvin and oral contraceptives. In the mean time prescribers of these drugs should be alert to the problem, which may lead to pill failure.

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[1] Denk H, Eckerstorfer R, Talcott RE, Schenkman JB. Alteration of hepatic microsomal enzymes by griseofulvin treatment of mice. *Biochem Pharmacol* 1977;**26**:1125-30.
[2] Nocke-Finck L, Breuer H, Reimers D. Wirkung von Rifampicin auf den Menstruationszyklus und die Östrogenausscheidung bei Einnahme oraler Kontrazeptiva. *Dtsch Med Wochenschr* 1973;**98**:1521-3.
[3] Hempel E, Klinger W. Drug stimulated biotransformation of hormonal steroid contraceptives: clinical implications. *Drugs* 1976;**12**:442-8.

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Fears aroused in patients by migraine

Pain may arouse fear of death or crippling disease. Migraine may also provoke anxiety about sanity. This was recently brought to my attention by two patients who reluctantly voiced their longstanding dread of mental illness, stimulating me to investigate the nature and prevalence of fears associated with migraine.

Patients and results

Case 1—A 52 year old housewife had had migraine for 30 years. In describing her attacks she mentioned having hallucinations during the headache phase but hurried on to elaborate on other symptoms. Asked to describe these hallucinations, she said that she had never told anyone about these. With encouragement she explained that she saw objects as being smaller than usual and the wrong way round. When told that Lewis Carroll had had migraine and had probably had similar experiences[1]—hence his creation of Alice—she was obviously relieved, delighted that her visual disturbances were not due to mental derangement.

Case 2—A 44 year old secretary had had classical migraine for 27 years. Her attacks had changed recently, so that she had only the visual aura with no headache. During her headaches she had had difficulty in reasoning and expressing herself. Having been brought up by a schizophrenic uncle, she was terrified that these symptoms heralded schizophrenia.

STUDY

Fifty one women and 24 men (mean age 46 (range 16-73)) with migraine, as previously defined,[2] were seen as outpatients at neurological clinics. Some patients mentioned their fears spontaneously during routine questioning[3]; those that did not were asked, "Has your migraine aroused any fear or fears in you?" Leading questions were purposely avoided. Twenty five patients had no fears. The table lists the fears of the 50 others. Twenty nine patients expressed only one fear each, 12 expressed two fears, eight expressed three, and one expressed four.

Fears aroused by migraine in 50 patients

Fear	No of patients
Work loss (including domestic)	13
Severity of pain	8
Frequency or duration of attack	5
Interference with social activities	5
Side effects of tablets	4
Death (severity of attack; progressive weight loss)	2
Vomiting	1
Tumour	14
Stroke	4
Brain exploding or head bursting	3
Permanent visual loss	3
Vision impairing function	2
Leg paralysis (tingling back of neck)	1
Insanity	6
Guilt (failure; helpless)	3
Mellontophobia	3
Suicide (because of pain)	2
Being thought to be mad	1
Coronary thrombosis (tingling in left hand)	1

Some patients were unable to specify their fears—for example, four feared damage from taking too many tablets. Others were specific—for example, loss of half a stone in three months due to recurrent attacks with vomiting might progress to death if weight continued to be lost. Fear of death was implied by some patients, consequent on specified fears such as tumour or "head exploding." Three women found that being without a husband accentuated their anxiety. One was a widow, another was divorced, and the third had a husband who was away from home on business.

I suspect that fear of symptoms of mental illness was more common than the patients would admit, many patients being frightened to relate their innermost fears. One patient had returned a present to a friend in the middle of a prolonged migraine when the headache was mild, thus terminating the friendship, and concluded that she must have been insane. Three others feared that they had "something wrong with the brain," implying mental disease. Two patients had contemplated suicide when in severe pain at the height of an attack. A divorcee was frightened because she was solely responsible for her baby. One woman felt "a different person during attacks," which she had had for 39 years. She felt guilty and inadequate because she was unable to cope with her duties as a wife and with looking after her elderly mother; at times she took wrong decisions. Three patients had mellontophobia[2]—that is, fear of making future arrangements.

Comment

This study shows that anxieties about organic and mental disease are common in patients with migraine and that these fears may be single or multiple, recent or longstanding, readily or reluctantly voiced, occasional ("it crossed my mind once or twice during a severe attack") or continuous ("terrified of the next attack"), common or unusual, but, above all, unpredictable. Patients visit their doctor for diagnosis, reassurance, explanation, or advice about treatment. This study shows that patients cannot be reassured until their "fear has been ferreted out."[2]

I suspect that fear may increase the severity of migraine. Attacks have been reported in which anxiety caused hyperventilation, adding paraesthesias that made the migraine seem worse.[4] Furthermore, the expectation of pain may be worse than the actual experience. Removal of fear is an important part of treatment that is derived not from tablets or tests but from an older approach: "The first line of treatment is a word in the patient's ear" (McNeill Love).

[1] Klee A. Perceptual disorders in migraine. In: Pearce J, ed. *Modern topics in migraine*. London: Heinemann Medical, 1975:45-51.
[2] Blau JN. A plain man's guide to the management of migraine. *Br Med J* 1982;**284**:1095-7.
[3] Blau JN. How to take a history of head or facial pain. *Br Med J* 1982; **285**:1249-51.
[4] Blau JN, Dexter SL. Hyperventilation during migraine attacks. *Br Med J* 1980;**280**:1254.

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