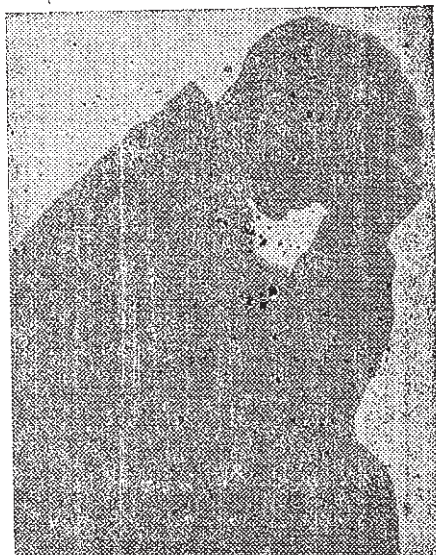


New Relief for Migraine Sufferers

STEVE CHAPLIN



Migraine is more than just a headache

ONE person in every ten is affected by migraine. In most cases, the best that sufferers can hope for is a reduction in the frequency of attacks. For many, relief can only be found in a quiet, darkened room.

However, a new generation of highly effective anti-migraine drugs will soon be available that can achieve response rates of 90% or more. One of these, Glaxo's sumatriptan or GR 43175, developed by researchers in the United Kingdom, is already undergoing clinical trials in Britain and continental Europe.

Migraine is sometimes dismissed as no more than a bad headache but it is a serious and often debilitating disorder. Many sufferers are plagued by attacks from early childhood and it is not unusual for several migraines to be experienced every year throughout adult life.

Classically, the symptoms begin with a prodrome, typically a vague mood or craving for food which can precede the headache by 24

The author is a well known writer on medical subjects.

hours. This is followed by an aura, the experience of which varies widely and can affect each of the senses. Some people report flashing lights spreading across the visual field, whereas others notice unusual smells or paraesthesiae.

The aura is followed by a severe headache that is made worse by noise or light, forcing the sufferer to seek refuge in sleep. Half of all victims will experience vomiting and most develop nausea anorexia. Less common, but equally serious, are alterations in the perception of size and shape.

These symptoms are the clue to the mechanisms behind migraine, which seem to involve neurological and vascular systems. Different people report many stimuli that can provoke an attack ranging from intolerance to certain foods—chocolate is a common example—to stress, alcohol or anxiety.

Although these factors appear to have little in common, they somehow trigger a similar pattern of neurovascular changes. One neurotransmitter that appears to have a central role in these changes is 5-Hydroxytryptamine (5-HT or serotonin).

Aborting Attacks

Although its precise effects remain a mystery, 5-HT may initially cause constriction of cortical vessels, causing neurological effects such as the aura. These blood vessels subsequently dilate as the neurotransmitter becomes depleted, leading to painful headache. Other possible effects include sensitisation to painful stimuli, gastric stasis and vomiting.

Many of the drugs now used to treat migraine are known to interact with 5-HT, but in developing sumatriptan the Glaxo researchers did not use this fact as the starting point for a cure. Instead, they noted that migraine attacks could sometimes be aborted by the administration of a vasoconstrictor.

Recent research has demonstrated that 5-HT acts on several sub-types of receptor, classified as 5-HT₁, 5-HT₂ and 5-HT₃. Experiments in animals then demonstrated that the 5-HT₁ receptor was located in cranial blood vessels and administration of drugs active at this receptor produced vasoconstriction.

Research at Glaxo then led to the development of sumatriptan, which selectively stimulates 5-HT₁ receptors. This causes constriction of some blood vessels in the head without affecting the peripheral or coronary vasculature.

The results of painstaking studies in humans have matched the promise shown by sumatriptan in the laboratory. In one double-blind trial, the response rate after intravenous injection was 93%, compared with only 13% of patients who improved after the administration of a placebo. Studies with intravenous infusion or subcutaneous injection have demonstrated similarly impressive success in 81% to 95% of patients.

Rapid Absorption

But it is oral administration that is most important for a drug intended for routine use. Unfortunately, it is this means of administration that is most fraught with problems in acute migraine. Gastric stasis and vomiting combine to impair the absorption of any drug given by mouth.

Glaxo has overcome this problem by formulating a dispersible tablet which can be absorbed rapidly from solution. Comparison of absorption during and outside migraine attacks has shown little difference in the blood levels produced, although there is some variation from patient to patient. Response rates of 70% to 85% have been achieved within two hours after oral administration and this is not significantly influenced by the duration of the migraine

episode. In addition, studies have shown that, after sumatriptan, no other medication is required.

This ability to reverse an acute attack of migraine represents considerable progress in treatment. At present, some drugs, including propranolol, tricyclic antidepressants and pizotifen, have to be taken prophylactically. That means continuous use to prevent perhaps three or four attacks each year, with the attendant risk of adverse side effects.

Hopes that the calcium antagonists, and nimodipine in particular would offer a breakthrough have been dashed by disappointing clinical results. Some anti-inflammatory analgesics, such as naproxen, have proved successful in relieving migraine symptoms but ergotamine remains the cornerstone of treatment.

The usefulness of ergot derivatives is limited, however, by their

potential for causing excessive peripheral vasoconstriction and dependence. In vivo studies have demonstrated that, although ergotamine achieves a desirable vasoconstriction in the carotid artery bed, it also has an undesirable effect on coronary arteries and increases blood pressure. So, the advent of a selective drug like sumatriptan, which has no such effects, offers real hope to sufferers for improvements in both safety and efficacy.

Minimal Adverse Reaction

Experience with sumatriptan so far shows that it is well tolerated. After intravenous administration, some patients reported feelings of pressure and warmth, particularly at higher doses. But these effects are much less apparent after oral administration and, in one study, only 7% of subjects reported any symptoms, including heaviness,

pressure and tingling in the fingertips.

Routine biochemical and haematological monitoring has revealed no abnormalities and objective measurements of cardiovascular function show no alteration in heart rate, blood pressure or ECG even after parenteral administration.

Assuming that the clinical trials go well, Glaxo is expected to market sumatriptan in the United Kingdom within the next two or three years. The drug should be available worldwide shortly afterwards.

Sumatriptan is likely to be the first of several novel anti-migraine drugs currently undergoing evaluation in the United Kingdom. If the others, which all act on 5-HT, can match its early promise there is every reason for optimism about the future for migraine sufferers.

Nursing World

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of this Institute. He appreciated that the members of this profession are committed and organised in their stressful job situation and are prepared to accept change in profession by learning from others. Dr. (Mrs) Aleyamma Kurian, Institute of Nursing Sciences, Mangalore, delivered the keynote address. She stressed the emerging challenges in Nursing service and education—expanded roles in Nursing, need for manpower development. She pointed out that one cause of failure of health delivery in India is stressing on quantity rather than quality. She also encouraged the nurses to move from supportive role to more autonomous role, since this profession is becoming accountable. Dr. M.P. Mohansing, Department of CVTS, praised the enthusiasm in nurses in updating knowledge to maintain high standards of Nursing especially in superspecialities. Dr. M.D. Nair, Department of Neurology, quoted Orem's self care theory, stressed importance of Nursing standards and proposed a biological medical model in caring. Mrs. Deenamma Koshy, Nursing Super-

intendent, welcomed the gathering and Mrs. Aleyamma Cherian, O.T. Supervisor, extended a vote of thanks.

The conference was found to be a great success from the evaluation of the delegates.

Obituary

It is with deep sorrow and grief that we announce the sad demise of Miss Shanti Barnabas, Staff Nurse of Nehru Hospital, PGI, Chandigarh. She left for her heavenly abode on May 27, 1989 at the age of 29 years.

Miss Shanti Barnabas completed her General Nursing in September, 1985 and Midwifery in March, 1986, from Frances Newton Hospital, Ferozepur (Punjab). She started her career as Staff Nurse in the Frances Newton Hospital, on April 1, 1986 and worked there for 1 year. She joined Nehru Hospital, P.G.I., in April, 1988 as a Staff Nurse.

Her untimely departure has created a great void among the Nursing personnel of P.G.I. It is

an irreparable loss to the family. May God give necessary strength to the family to bear the loss and peace to the departed soul.

Mrs. C. Earnest

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