In a follow up period of 5-33 months only one of the general practitioners who had received teaching continued to refer patients with shoulder or elbow lesions to the clinic. The percentages of all clinic referrals relating to simple shoulder or elbow lesions were 6.5%, 7.9%, and 8.6% in the first, second, and third years of the study, respectively (32, 41, and 47 patients). The waiting time for new clinic appointments rose from two to six weeks during the study. Of the 24 general practitioners who attended the lecture, 17 had never referred patients with shoulder or elbow lesions to the clinic and had thus never been offered individual teaching, five had made one referral, and two had made four referrals. None of the three general practitioners who referred the most patients (9, 10, and 15) attended the lecture or requested educational sessions. These three general practitioners had qualified in the 1960s and 1970s. All except one of those who did arrange sessions had qualified in the 1970s and 1980s. In the last six months of the study 37 patients were referred; 27 of these referrals were from general practitioners who had been offered two or more educational sessions.

Comment

This study supports the view that there are different types of general practitioner, one of which refers a large proportion of patients and does not attend educational sessions or respond to educational offers. Some studies ignore this group.^{2,3} It is recognised that as treatment for soft tissue lesions is not ideal referral to a consultant clinic, if only for a second opinion, may on occasions be necessary.⁴ Reduction in referral by trained general practitioners in this study was outweighed by increased referral from elsewhere.

It seems likely that there is a lack of consensus among specialists, general practitioners,⁵ and patients about the role of the general practitioner in the treatment of minor musculoskeletal disease.

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Recovery from prolonged cerebral depression after fluvoxamine overdose

Fluvoxamine maleate [5-methoxy-4-(trifluoromethyl) valerophenone (E)-0-(2-aminoethyl) oxime maleate (1:1)] is a new antidepressant which is thought to act by inhibiting the neuronal uptake of 5-hydroxytryptamine with little or no effect on the catecholamine system.¹ Fluvoxamine has a low incidence of anticholinergic side effects and, unlike tricyclic antidepressants, has no clinically important cardiovascular effects.² Minor reported side effects include nausea, vomiting, dizziness, somnolence, dyspepsia, headache, anxiety, palpitations, diarrhoea, and a rash.³ Fluvoxamine has been implicated in 41 cases of self poisoning, the maximum dose taken being 6.5 g. One patient died, but necropsy showed the fluvoxamine tablets to be intact in the patient's stomach and the death was attributed to overdose of propranolol. I report here a case of fluvoxamine overdose which resulted in coma, the first reported case of prolonged cerebral depression caused by an overdose of fluvoxamine.

Case report

A 74 year old white woman with a two year history of depression treated with 100 mg of fluvoxamine a day for one year was admitted unconscious after attempted self poisoning with 60, 50 mg fluvoxamine tablets (total 3 g) and 25, 10 mg temazepam tablets. A stomach washout was performed in the casualty department. On examination the patient was afebrile and unconscious with a pulse of 70 beats/min, sinus rhythm, blood pressure of 80/50 mm Hg, and a respiratory rate of 20. She was unresponsive to pain, had a sluggish pupillary light reflex, and an absent gag reflex. Tone was normal with normal reflexes and flexor plantar responses. Power could not be assessed. Urea and electrolyte concentrations, liver function tests, blood glucose concentration, routine chest radiograph, and electrocardiogram were all normal. Paracetamol, salicylate, and barbiturates were not detectable in the plasma. Serial fluvoxamine and benzodiazepine concentrations were measured (figure).

Serum concentrations of fluvoxamine and temazepam after overdose.

The patient was treated with supportive measures and her blood pressure returned to 110/70 mm Hg within 24 hours. She remained unconscious for five days with no sign of improvement until day 6, when she opened her eyes spontaneously and began to show signs of having returned to her normal state. On questioning she admitted to having taken the tablets of fluvoxamine and temazepam.

Comment

Fluvoxamine is reported to be a very safe antidepressant with few side effects. Peak plasma concentrations are usually reached after two to eight hours after an oral dose of the drug. The mean plasma half life is 15 hours, and pharmacokinetics of the drug are not altered in the elderly (N Hockings *et al* unpublished).

The initial fluvoxamine concentration (0.16 mg/l) in our patient was less than the normal mean steady state value (0.4 mg/l) that would occur on regular treatment of 100 mg/day, and the delay in reaching a peak in our patient is hard to explain. An initial delay in absorption might be related to posture since serum concentrations of drugs may be reduced when lying down owing to reduced gastric emptying in that position.⁴ In addition, fluvoxamine is known to induce nausea and this itself is associated with reduced gastric emptying and may have also contributed to the delayed absorption of the drug.

Our patient recovered from her coma when the fluvoxamine concentration fell below 0.7 g/l. According to the Committee on Safety of Medicines and the manufacturers, previous cases of self poisoning with fluvoxamine have not been associated with prolonged coma, and recently a patient survived an overdose of 6.5 g of fluvoxamine without losing consciousness. The prolonged cerebral depression in our patient might have been due to an interaction between fluvoxamine and temazepam and its metabolites, but I am unaware of any data on this possible interaction.

Although I cannot explain the mechanism for the prolonged cerebral depression, clinicians should be aware of this potential side effect of overdose, especially when fluvoxamine is taken in conjunction with benzodiazepines.

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