The only treatment that succeeds is to admit the patient to hospital, to provide short-term sedation, and to wean him or her totally from ergot. Spectacular remission of headache occurs after one or two early rebound headaches in the first few days after withdrawal.

Drs Rose and Wilkinson are right to point out that ergotamine habituation can occur on doses of 1 mg or more per day. The drug manufacturers should be urged to modify their present recommendations for the treatment of migraine, which mostly advise up to six doses (6-12 mg depending on the preparation) per 24 h and up to 12 doses (12-24 mg) per week. In our experience if 1 mg, repeated if necessary after $\frac{1}{2}$ - $\frac{3}{4}$ h, is ineffective then ergot should be abandoned for that particular attack; analgesics will provide some degree of relief—certainly sufficient to make a severe pain tolerable.

Recognising these difficulties, we find that the correct use of ergotamine, often by suppository, is still highly effective in between 50 and 60% of our patients with migraine. It should not be discarded because of the relatively uncommon examples of habituation. The unpleasant acute dyskinesia² which complicates the use of metoclopramide and the phenothiazines in a minority of patients serves to remind us that no treatment is without hazard and that, to be successful, therapy must be carefully tailored to the individual.

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¹ Foster, J B, in *Modern Topics in Migraine*, ed J Pearce, p 143. London, Heinemann, 1975.

² De Silva, K L, Muller, P J, and Pearce, J, *Practitioner*, 1973, 211, 316.

Ibuprofen hydrochloride and terbutaline in asthma

SIR,—We have read with interest the article by Dr B Arner and Mr P O Magnusson (10 January, p 72). In our department we likewise have performed a comparative study of the bronchodilating effects of ibuprofen and terbutaline (in our study they were in inhalation form.² We did not observe any difference of importance between the two compounds. Ibuprofen was more effective weight for weight, but in equipotent doses the onset, duration, and peak of the effects of the two compounds were identical. We find that the same conclusion must be drawn from the study of Dr Arner and Mr Magnusson, but this is not quite apparent from their article.

The authors at first tested 2 mg of ibuprofen (generating 1.36 mg of terbutaline after hydrolysis) against 5 mg of terbutaline. These doses seemed to be equipotent. There was no significant difference in the onset, duration, or peak of their effects. In the discussion it is concluded from this, that "ibuprofen hydrochloride thus seems to produce a bronchodilating effect that is more than three times that of terbutaline sulphate." This conclusion seems to be unreasonable. The bronchodilating effect is the same, but the dose, weight for weight, of ibuprofen is one-third of that of terbutaline. The difference is obvious. Later the authors doubled the dose of ibuprofen (4 mg) without changing the dosage of terbutaline and demonstrated a clearly significant difference in favour of ibuprofen. We do not find this comparison to have any relevance since the doses used were clearly not equipotent.

The conclusion from the results of the study must be that the highly lipophilic compound ibuprofen is more effective per unit of weight, probably because of a higher absorption rate. Apart from this the two compounds are identical in their effects.

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¹ Poulsen, S S, and Petersen, B N, *Scandinavian Journal of Respiratory Disease*. In press.

Neuroblastoma in infancy

SIR,—We were interested to read the comment of Professor G M Besser and Dr W J Jeffcoate (21 February, p 448) that neuroblastoma of infancy is a highly malignant tumour and that treatment is almost uniformly fatal. In our experience and that of many other centres the reverse is true.

Young infants more commonly present with localised tumours, which may be partially resected and treated with postoperative radiotherapy, than do older children (in whom metastases to bone are frequently present at the time of diagnosis). In addition there is the group of young infants, originally described by D'Angio *et al*¹ in whom the primary tumour, which is usually in the adrenal gland, metastasizes to the liver, skin, and occasionally bone marrow but *not* bone; these infants have an excellent prognosis and require only minimal treatment, or sometimes no treatment at all, to initiate regression of disease.

In our own series the disease-free survival rate for infants under one year of age at diagnosis is 60%, while that for the older child is only 13%. In older children disease-free survival is usually associated with known good prognostic factors such as tumour in the thorax² or a partially differentiated ganglioneuroblastoma. In all forms of neuroblastoma the most important diagnostic and prognostic test is the serial estimation of urinary levels of vanillylmandelic acid before and after treatment.³

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¹ D'Angio, G J, Evans, A E, and Koop, C E, *Lancet*, 1971, 1, 1046.

² Filler, R M, *et al*, *Journal of Pediatric Surgery*, 1972, 7, 136.

³ Bond, J V, *Archives of Disease in Childhood*, 1975, 50, 691.

Antibiotics for kicks

SIR,—While we all know that some young people recklessly consume quantities of amphetamines and other drugs, it came as a surprise to me to learn from one of my patients that he is in the habit of taking 15-20 antibiotic tablets, plus a glass of beer, for the sensation of euphoria that the combination gives him.

My patient informs me that as a seaman he is able to obtain drugs from doctors all over the world, trading on an infected finger or some such. He hoards the penicillin or tetracycline tablets and takes them when he feels he would like to sample the effect. As it happened on his reception into prison he was

found to have "black tongue". This condition has cleared up since his confinement to prison prevented further antibiotic self-medication.

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Alpha-chain disease cured with antibiotics

SIR,—Dr J Rogè and others (25 October, p 225) report a case of heavy-chain disease of alpha type in complete remission after treatment with tetracycline and oleandomycin. We have observed a patient with μ -chain disease who had a remission of clinical and laboratory signs of the disease after treatment with ampicillin and tetracycline.

The patient suffered from generalised lymphadenopathy, hepatosplenomegaly, and severe anaemia; μ -chain protein was detected in the serum by chromatographic and immunological methods. Her clinical state remained unchanged for about 18 months after the onset of symptoms.

In January 1974 the patient was admitted to this clinic with symptoms of a bronchopulmonary infection. She was treated with ampicillin (total 13 g) and tetracycline (20 g) by mouth. From this moment the patient, to our surprise, improved steadily and reached a complete remission. The haemoglobin level went up from 9.2 g/dl to 14.0 g/dl, the enlargement of the mediastinal lymph nodes showed a regression to normal size, and μ -chain protein could no longer be detected in the serum. The splenohepatomegaly also subsided completely.

We would like to stress the following points with regard to the significance of μ -chain protein and antibiotic therapy in this patient. Histologically the lymph nodes showed signs of heavy inflammation and deposits of periodic acid-Schiff-positive protein within the germinal centres. It was suggested by the pathologist (Professor K Lennert, Kiel) that toxoplasmosis and syphilis should be considered. Serologically, however, these diagnoses could not be confirmed. From the clinical findings this patient shows some similarities to cases with the chronic, pluri-potential, immunoproliferative disorder of Westerhausen and Oehlert.¹ The patients reported by these authors, however, had paraproteinaemia of IgM or IgA type and were treated with cytostatic agents or radiotherapy.

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¹ Westerhausen, M, and Oehlert, W, *Deutsche medizinische Wochenschrift*, 1972, 97, 1407.

C3 inactivator and hypocomplementaemia in a "healthy" woman

SIR,—Dr Anita Karstorp's report (28 February, p 501) of the female patient with arthralgia and a circulating C3 inactivator (the term "C3 activator" is a synonym for activated factor B of the alternative complement pathway) is hardly the first report of this phenomenon in an apparently healthy person, as she claims. Dr R H R White and I in 1973¹ reported three patients with partial lipodystrophy, two of whom were in complete