phylaxis has been done on children with more severe clinically evident asthma; indeed it would be hard to know how to assess treatment in patients whose overall wellbeing is such that they have few objective features to use to compare therapeutic regimens. We know that patients who are at risk of dying from asthma usually have a history of severe attacks¹ and that in adults with asthma attitudes to medical care are more potent determinants of its uptake than the severity of the disease.²

What we do not know, and can only imagine, are the social and psychological effects of labelling up to 30% of children as chronic sick, replete with complex therapeutic regimens, frequent medical attendance, and the inevitable parent support groups. On the other hand, the cost of this probably useless and probably dangerous exercise would be great. It is time for some studies into the effects on outcome of identifying and treating these mildly affected asthmatics before any more studies implying medical neglect are taken too seriously.

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Yersinia and iron overload

SIR,—We read with interest the report by Dr H Y Chin and others on *Yersinia enterocolitica* in patients with iron overload (11 January, p 97). We have recently cared for a 4 year old Greek Cypriot girl with thalassaemia who also developed *Yersinia enterocolitica* peritonitis and septicaemia. Thalassaemia intermedia had been diagnosed at the age of 14 months and she received regular six weekly red cell transfusions with subcutaneous desferrioxamine (1.5 g×5/week). Serum ferritin was 1410 µg/l.

She presented to the North Middlesex Hospital with a three day history of pyrexia, diarrhoea, and vomiting. Viral gastroenteritis was diagnosed and she received her regular blood transfusion and subcutaneous desferrioxamine. Two days later she developed pain and tenderness in her right iliac fossa and a laparotomy was performed for suspected appendicitis. At operation the caecum and appendix were inflamed and indurated and an appendicectomy was performed. Her condition deteriorated and she developed peritonitis with septicaemia. *Y enterocolitica* was isolated from both blood culture and peritoneal fluid.

She was transferred to Queen Elizabeth Hospital for Children. Antibiotic treatment consisted of gentamicin and metronidazole. High dose chloramphenicol was added in view of previous reports of apparently poor clinical response to gentamicin in yersinia septicaemia.^{1,2} Despite maximal supportive therapy with plasma and parenteral nutrition the peritonitis persisted and she developed disseminated intravascular coagulation and inappropriate secretion of anti-diuretic hormone. A second laparotomy was performed. The entire pelvis was indurated with an adherent caecum, ileum, and mesentery. The appendix stump had not healed, leaving a perforated caecum. A high jejunostomy was performed and the child was maintained on total parenteral nutrition and antibiotics. She subsequently made a good recovery with reconnection and normal function of the bowel two months later.

Yersinia does not produce its own iron binding compounds but has appropriate receptors and may use siderophores from other sources; hence its affinity for patients with thalassaemia and iron overload.³ It is now recognised that administration of the siderophore desferrioxamine exacerbates yersinia septicaemia in both man and laboratory animals.^{4,5} We reiterate the importance of suspect-

ing yersinia infection in patients with possible iron overload and gastroenteritis and would recommend discontinuing desferrioxamine and administering prophylactic antibiotics such as co-trimoxazole while yersinia is sought.⁶

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Use of ordinal scales in clinical trials

SIR,—Professors C Ronald MacKenzie and Mary E Charlson (4 January, p 40) refer to some important issues in psychological measurement, all familiar to psychometricians. A fuller treatment may be found in any standard text of psychological statistics. One feature of their paper may, however, mislead—the use of the terms “ordinal” and “rank.”

Traditionally there are nominal, ordinal, ratio, and interval scales, which have progressively more complex characteristics and more stringent rules for use. “Ordinal” means ranking—that is, putting objects in order without assigning particular values to any of them or judging the magnitude of interobject differences. Interval scales can be used to assign values of particular magnitude to objects.

The authors are probably correct to refer to their exemplary scales as ordinal ones, for they lack interval scale properties, but such measuring instruments are often used as if they were interval scales, with misleading results. A common manifestation of this impropriety is the inappropriate use of parametric statistics, which are properly applicable only to truly interval scale data.

The possibility that Professors MacKenzie and Charlson have missed this point arises from the fact that they refer to means and standard deviations (parametric measures) in several places. If the scales are truly ordinal and used as such then non-parametric statistics are obligatory and it is perhaps unfortunate that the authors do not emphasise this point, which is a widely perpetrated error.

Statistics appropriate to ranks have been greatly developed recently and useful texts are available.¹ Perhaps tuition on psychological scaling and on such terms as validity and reliability should be more widely available to researchers in internal medicine.

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1 Meddis R. *Statistics using ranks. A unified approach*. Oxford: Blackwell, 1984.

Electrolyte disturbances and cardiac failure with hypomagnesaemia in anorexia nervosa

SIR,—We were interested in the report by Drs Fonseca and Havard of refractory hypocalcaemia

associated with mild hypomagnesaemia (14 December, p 1680). We have recently treated a patient with coeliac disease in whom hypocalcaemia remained refractory to treatment until coexisting hypomagnesaemia was corrected.

A 25 year old woman was admitted to hospital having had paraesthesiae and tetany for two days and watery diarrhoea for four weeks. She had been breast feeding for 10 weeks. On admission there was bilateral carpopedal spasm; Chvotek's and Trousseau's signs were positive. There was no other abnormality on general examination. Her plasma sodium concentration was 138 mmol (mEq)/l, plasma potassium 2.8 mmol (mEq)/l, plasma urea 2.2 mmol/l (14.2 mg/100 ml), plasma calcium 1.49 mmol/l (6.0 mg/100 ml), plasma phosphate 1.1 mmol/l (3.3 mg/100 ml), and plasma albumin 33 g/l.

She was treated with an intravenous infusion of calcium gluconate, 22.5 mmol over 48 hours (100 ml of 10% solution), and oral potassium supplements. After 48 hours her symptoms had resolved, the carpopedal spasm had disappeared, and Chvotek's and Trousseau's signs had become negative. Plasma calcium concentration had risen to 2.00 mmol/l (8.0 mg/100 ml) and plasma potassium to 3.5 mmol/l.

The next day her symptoms recurred and carpopedal spasm was again evident. Plasma calcium had fallen to 1.73 mmol/l (6.9 mg/100 ml), and she was given 11.25 mmol calcium gluconate by intravenous infusion over the next 24 hours. Her symptoms persisted, however, and plasma calcium decreased further to 1.65 mmol/l (6.6 mg/100 ml) in spite of this treatment.

Further investigation showed that her plasma magnesium value was only 0.4 mmol/l (1.0 mg/100 ml) (normal range 0.70-1.0 mmol/l; 1.7-2.4 mg/100 ml). She was therefore given an infusion of magnesium sulphate (49 mmol in 24 hours) and the calcium gluconate infusion was continued. Her symptoms and signs resolved within 24 hours. Plasma magnesium rose to 1.1 mmol/l (2.6 mg/100 ml), plasma calcium to 2.08 mmol/l (8.32 mg/100 ml); plasma potassium rose to 5.3 mmol/l initially, subsiding spontaneously to 4.3 mmol/l five days later. She remained well four weeks later and had not required any further intravenous therapy.

This case illustrates further the importance of measuring plasma magnesium concentrations in patients with hypocalcaemia, particularly when they seem unresponsive to calcium replacement therapy.

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Doctors and torture

SIR,—Dr Butler is correct in pointing out that most medical staff are opposed to the present government in Chile, because of the severe financial cuts in the health service. But it is a little ingenuous of him to say that doctors and their families have nothing to fear from the regime provided they are not “politically active.”

The president of the regional council of the Colegio Medico de Chile, Dr Ricardo Vacarezza, an eminent dermatologist, has just been dismissed from his hospital post by the government, no reason being given. His dismissal did, however, follow a speech criticising the regime's programme of health care over the past three years. The president of the regional council for Arica, in the north of Chile, received a visit from the secret police in the middle of the night early last year and was taken away with very little time to pack. He was transported several thousands of miles to a remote part in the south of Chile, and was reinstated only after international pressure had been brought to bear, including a critical article in the *New England Journal of Medicine*.