of itch; severity of side effects; and whether the antihistamine suited him. After completing the questionnaire the patient returned to the outpatient department for evaluation of the results. Antihistamines that the patient considered to be unsuitable were rejected. The remainder were scored for number of weals, severity of itch, and side effects. The lowest-scoring antihistamine was judged the most appropriate for the patient.

Antihistamines—At the pharmacy the patients were given six containers, each containing five days' supply of one of the following antihistamines with appropriate instructions, as detailed on the sample questionnaire: promethazine, chlorpheniramine, hydroxyzine, cyproheptadine, trimeprazine, and mepyramine.

All 18 patients successfully completed the questionnaire. Of the regimens studied, promethazine was preferred (lowest scoring) in six cases and chlorpheniramine in another six. Cyproheptadine and mepyramine each received the lowest score in two. Hydroxyzine and trimeprazine each received the lowest score in one. In instances in which two or more regimens received similar ratings, the final choice was based on simplicity and convenience. The questionnaire was filed in the patient's case notes so that the information recorded could be used to substitute an alternative low-scoring antihistamine at a future date when appropriate.

DEPARTMENT OF CLINICAL PHARMACOLOGY
ST JOHN'S HOSPITAL FOR DISEASES OF THE SKIN

Name: J. N.
Hospital No.: 25902

ALCOHOL MUST NOT BE TAKEN WHILST ON THESE DRUGS

Date of 1st visit: 5.1.80
Date of 2nd visit: 14.80

MEDICATION	Phenergan 25mg	Hydroxyzine 10mg	Cyproheptadine 4mg	Chlorpheniramine 4mg	Trimeprazine 10mg	Mepyramine 25mg
	Two to be taken at 10pm each evening	One to be taken at breakfast, lunch, evening meal, and bedtime	One to be taken at breakfast, lunch, evening meal, and bedtime	One to be taken at breakfast, lunch, evening meal, and bedtime	One to be taken three times a day after meals	One to be taken three times a day after meals
DAY	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
NUMBER OF WEALS	Less than 10 10-50 More than 50					
SEVERITY OF ITCH	None Mild Moderate Severe					
Any unpleasant side effects (detail)	None Slight shaking Moderate Severe					
Do these tablets suit you? YES/NO	YES	YES	NO	YES	NO	NO

2 day interval between each treatment

Antihistamine self-assessment questionnaire.

Comment

The self-assessment technique has proved valuable in the drug treatment of patients with chronic idiopathic urticaria. Other data, to be published elsewhere, suggest that the method is equally effective in the physical urticarias. Apart from the major advantage that antihistamine treatment is placed on a rational basis, patients appreciate active participation in their management and acquire a better insight into the nature of their skin disorder and its treatment.

This study was not intended to yield any overall conclusion about the ranking of antihistamines in order of effectiveness in patients with chronic urticaria, though the self-assessment method, with considerable design modifications, could be used for this purpose. Nevertheless, it is interesting that few patients preferred hydroxyzine and cyproheptadine, currently fashionable antihistamines in dermatological practices. Promethazine, given as a late evening dose, scored well because of a low incidence of side effects during the succeeding day and because patients found it reasonably effective. The dosage regimens chosen in this study may differ from those in routine use in other centres. The method, however, is easily adapted to accommodate individual foibles of prescribing or changing fashions in antihistamine treatment. This self-assessment method should be extended to other pruritic disorders for which antihistamines are regularly prescribed including atopic eczema.

I thank the staff of the pharmacy department, St John's Hospital for Diseases of the Skin, for their help with this study, and Dr Andrew Herxheimer for helpful comments on the manuscript.

¹ Melville KI. Antihistamine drugs. In: Schacter, M. ed. *International encyclopedia of pharmacology and therapeutics*. Oxford: Pergamon Press, 1973:127-71.

² Gumpel JM. Which anti-inflammatory drugs in rheumatoid arthritis? *Br Med J* 1978;iii:256.

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Thrombosis after venography in familial antithrombin III deficiency

We report the occurrence of venous thrombosis after venography on two occasions in a patient with familial antithrombin III deficiency.

Case report

A 25-year-old man broke his right ankle and three weeks after the application of a below-knee plaster cast presented with pain in the fractured leg. Deep venous thrombosis was suspected, but venography with 100 ml Conray 280 (60% meglumine iothalamate; equivalent 280 g iodine/l) flushed through with saline not containing heparin did not confirm this. Over the next few days the pain and swelling increased and a repeat venogram disclosed long lengths of fresh clot in the deep veins of the calf and almost complete occlusion of the popliteal and femoral veins. He was treated with heparin infusion and warfarin but seven days later suffered a pulmonary embolus. Familial antithrombin III deficiency was subsequently diagnosed in this unit, antithrombin III concentrations being 49% and 47% on immunological and functional assays, respectively.¹

One year later the patient developed pain in the left calf and knee. Venography of this leg using 50 ml Conray 280 flushed through with 100 ml isotonic saline without the addition of heparin showed no thrombus. The pain in the calf became more severe, and tenderness and swelling developed. Platelets labelled with ¹¹¹indium² clearly showed thrombus in the left calf two days later (figure).

Gammascan showing massive uptake of indium-labelled platelets in upper left calf with lesser uptake along veins in lower calf, indicating damage to venous endothelium by venographic contrast medium.

Comment

Venous thrombosis may occur as a complication of venography³ but has not been described in a patient with familial antithrombin III deficiency. Patients with this disorder show a definite predisposition to venous thrombosis, which is commonly precipitated by a thrombogenic stimulus such as pregnancy or operation.⁴ Since venography is a recognised thrombogenic stimulus it might be expected to result in venous thrombosis in patients with antithrombin III deficiency. Our experience supports this and suggests that in these patients venography should be avoided when possible. When reliable alternative techniques for the diagnosis of deep venous thrombosis such as indium-labelled platelets are not available, it may be advisable to use metrizamide as the venographic contrast medium, since this compound appears to be associated with a low incidence of thrombotic complications,⁵ and to flush through the contrast medium with saline containing small quantities of heparin.

¹ Winter JH, Fenech A, Bennett B, Douglas AS. Transfusion studies in patients with familial antithrombin III deficiency. *Br J Haematol* (in press).

- ² Fenech A, Hussey JK, Smith FW, Dendy PP, Bennett B, Douglas AS. The diagnosis of deep vein thrombosis using autologous indium (¹¹¹In) labelled platelets. *Br Med J* 1981;282:1020-2.
- ³ Albrechtsson U, Olsson C-G. Thrombotic side effects of lower-limb phlebography. *Lancet* 1976;i:723-4.
- ⁴ Mackie M, Bennett B, Ogston D, Douglas AS. Familial thrombosis: inherited deficiency of antithrombin III. *Br Med J* 1978;ii:136-9.
- ⁵ Albrechtsson U, Olsson C-G. Thrombosis after phlebography: a comparison of two contrast media. *Cardiovasc Radiol* 1979;2:9-18.

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Osteomalacia in presence of "normal" serum 25-hydroxycholecalciferol concentration

Measurement of serum 25-hydroxycholecalciferol (25-OHD) concentration is commonly thought to be of value in diagnosing osteomalacia, especially in doubtful cases.¹ Preece *et al*² measured 25-OHD concentrations in patients with unequivocal osteomalacia and in no case was the concentration greater than 9 nmol/l (3.5 ng/ml). Undetectable serum concentrations of 25-OHD have, however, been shown to occur in elderly subjects in whom osteomalacia had been excluded on histological, biochemical, and radiological criteria.³ We now report two cases of osteomalacia, diagnosed histologically, in which serum 25-OHD concentrations were close to the mean in elderly patients.

Case reports

CASE 1

A 74-year-old woman presented with a two-week history of aches and pains across the chest and increasing lassitude and fatigue. She had been housebound for many years because of a nervous disposition and had been taking pentobarbitone sodium regularly at night. Investigations showed serum calcium concentration, corrected for albumin and globulin,⁴ 1.06 mmol/l (4.2 mg/100 ml) (normal range for elderly women 1.22-1.66 mmol/l (4.9-6.7 mg/100 ml)), serum phosphate 0.58 mmol/l (1.8 mg/100 ml) (normal range for elderly women 0.80-1.30 mmol/l (2.5-4.0 mg/100 ml)), and alkaline phosphatase 156 IU/l (normal range 30-130 IU/l). Urea, electrolyte, and creatinine concentrations were within the normal range and there was no history of chronic renal disease. Radiography of the chest, spine, pelvis, and upper femora showed thin bones but no Looser's zones. Serum 25-OHD concentration measured five days after admission was 26 nmol/l (10.3 ng/ml). Histological examination of a bone biopsy specimen showed osteoid seams covering most of the bony surface with up to five bright lines.

CASE 2

An 87-year-old woman presented with loss of appetite for six months and weakness of the legs for two months. Two weeks before presentation she had suffered two bad falls, after one of which she had developed pain in the jaw. She had been virtually housebound for the past three years because of her age, her dependent personality, and living up 15 stairs. Examination showed a bruise on the right side of the neck and tenderness posteriorly over the right ribs. Radiography showed a fracture through the ramus of the right jaw, multiple rib fractures, and symmetrical lesions on the medial aspects of both upper femora that had some of the features of Looser's zones.

Investigations showed corrected serum calcium concentration 1.28 mmol/l (5.1 mg/100 ml), phosphate 0.89 mmol/l (2.8 mg/100 ml), and alkaline phosphatase 269 IU/l. Urea, electrolyte, and creatinine concentrations were within the normal range and there was no history of chronic renal disease. Biochemical findings were not strongly suggestive of osteomalacia as calcium and phosphate concentrations were in the lower normal range, and the alkaline phosphatase activity may have been raised as a result of the multiple fractures. In view of the clinical and radiological features, however, serum 25-OHD concentration was measured and a bone biopsy performed. Serum 25-OHD concentration on the day after admission was 15 nmol/l (6 ng/ml). Histological examination of the bone biopsy specimen showed osteoid seams covering most of the bony surface with up to six bright lines.

Comment

The mean serum 25-OHD concentration in elderly women is 18 nmol/l (7.1 ng/ml),⁵ and concentrations in both our patients were close to this. Our results, combined with those in the patients without osteomalacia in whom serum 25-OHD was undetectable,³ show that this measurement does not help either in making or excluding the diagnosis. As 25-OHD is not the active hormone this conclusion is not unexpected. Further work needs to be done to see whether measurement of the active hormone, 1:25 dihydrocholecalciferol, is more useful.

We thank Professor I Macintyre's laboratory for the 25-OHD measurements.

- ¹ Exton-Smith AN, Overstall PW. *Guidelines in medicine: geriatrics*. Vol 1. Lancaster: MTP Press, 1979.
- ² Preece MA, Tomlinson S, Ribot CA, *et al*. Studies of vitamin D deficiency in man. *Q J Med* 1975;44:575-89.
- ³ Hodkinson HM, Hodkinson I. Range for 25-hydroxy vitamin D in elderly subjects in whom osteomalacia has been excluded on histological and biochemical criteria. *Journal of Clinical and Experimental Gerontology* 1980;2:133-9.
- ⁴ Hodkinson HM. *Biochemical diagnosis of the elderly*. London: Chapman and Hall, 1977.
- ⁵ Hodkinson HM, Bryson E, Klenerman L, Clarke MB, Wootton R. Sex, sunlight, season, diet and the vitamin D status of elderly patients. *Journal of Clinical and Experimental Gerontology* 1979;1:13-22.

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Crohn's disease presenting as recurrent pulmonary oedema

Hypoproteinaemia is a well-recognised complication of Crohn's disease,¹ especially when the disease is widespread, but the presentation of Crohn's disease as oedema from hypoproteinaemia is uncommon. Steinfeld *et al*² reported hypoalbuminaemia in nine out of 23 patients with Crohn's disease. Of 120 patients with Crohn's disease attending our gastroenterology clinic, 22 had hypoalbuminaemia (<35 g/l) at diagnosis, of whom seven had oedema as one of the presenting symptoms.

We report on one of these patients, who presented with recurrent pulmonary oedema caused by hypoalbuminaemia, subsequently found to be due to small-intestinal Crohn's disease.

Case report

A 29-year-old man was admitted as an emergency in October 1974 after a week of acute dyspnoea, which had been waking him from sleep. His medical history included spinal tuberculosis at the age of 2 years, which had required several orthopaedic operations and left him with a residual spastic paraparesis and a dislike of both hospitals and doctors. He had had diarrhoea for one year, diagnosed as "colitis" by his general practitioner and treated with sulphasalazine (Salazopyrin), and recent vomiting and loss of weight. He was emaciated, with kyphoscoliosis, clubbing, pitting ankle oedema, and bilateral basal crepitations but no evidence of heart disease. Investigations showed normal blood count and plasma viscosity, urea and electrolyte concentrations, and cardiac enzyme activities. Chest radiography showed diffuse opacities throughout both lung fields, consistent with pulmonary oedema. This was thought to be due to heart failure of uncertain cause and was treated with frusemide with appreciable improvement. He declined further investigations and was discharged from hospital, only to be readmitted a few weeks later with similar symptoms. Chest radiography again showed opacities in both lung fields, most distinct in the lower zones. As before he refused further investigations and remained well until April 1975, when he required readmission. At this time he complained of loose stools and on examination had gross ankle oedema. Serum albumin concentration was 24 g/l and total protein 47 g/l. Chest radiography showed no active lung lesion.

Two months later further investigations showed haemoglobin concentration 11.3 g/dl, mean cell haemoglobin concentration 30 g/dl (30%), plasma viscosity 1.28 mPa s (1.28 cP), total protein concentration 36 g/l, albumin 20 g/l, and calcium 1.85 mmol/l (7.4 mg/100 ml). Small-bowel barium studies