statement that "no patient with acute asthma should be sent to hospital without first being given 200 mg of hydrocortisone or prednisolone intravenously or intramuscularly." As a consultant paediatrician I have always been intrigued by the fact that the majority of my child patients who come into hospital show very good response in status asthmaticus to a single injection of ACTH gel, given in a dosage equivalent to 40 to 80 units in an adult and scaled down according to the child's weight. What I find particularly surprising is that this treatment seems to work within 20-30 minutes.

I understand from some of my general practitioner colleagues that this treatment also works in the home. It would be interesting to know if other practitioners have found this very safe treatment effective and if any of our more academic colleagues can explain why ACTH gel should produce this effect within such a short space of time. With many of my very small patients it is difficult to believe that the relief of bronchospasm could be psychogenic in these circumstances. We do, of course, recognise the response of asthma to coming into hospital in those who are sensitive to the house dust mite present in their home environments but not present in the cleaner and at least less dusty environment of the hospital ward, but this response is, of course, much slower and takes hours or days.

The other first-aid measure, which seems greatly to help children in severe bronchospasm is what I call "aided respiration." In this procedure the child sits on the adult's knee facing away from the adult. The adult then wraps his arms around the child's chest and, in time, with the child's efforts at expiration, he gently squeezes the chest to encourage fuller emptying. It is most important that this manoeuvre is timed to coincide with the child's attempts at expiration, and the adult must not in any way attempt to dictate the rate of respiration. After such an aided expiration the next breath the child takes gives quite considerable relief, and this seems to restore confidence and reduce the sense of suffocation felt in a severe attack of bronchospasm. There is, of course, considerable psychogenic reassurance for the child, seated and held in this way by a concerned and empathic and helping adult.

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Deep vein thrombosis in pregnancy

SIR,—In your leading article on "Venous thromboembolism and anticoagulants in pregnancy" (22 November, p 421) no mention was made of the value of ultrasound in the diagnosis of deep vein thrombosis in pregnancy and the puerperium. Ultrasound fetal heart detectors are widely used in obstetric units in Britain and can be used to test the patency of the iliofemoral venous segment. Minor calf vein thrombi will not be detected, but it has been shown that these do not carry any significant risk of embolism.¹

The technique and its limitations are described very fully in the paper by Dr Jeanette Meadway and others (6 December, p 552). It is clear from this careful study that the technique is not foolproof and that the results must be interpreted with

common sense, but it does represent a great improvement on clinical evaluation. In pregnancy the special techniques of venography and the radioiodinated fibrinogen uptake test cannot normally be used because of the radiation hazard to the fetus. If the ultrasound test is used in pregnant patients with calf pain of uncertain cause most of them will be saved from unnecessary anticoagulants.

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¹ Kakkar, V V, et al, *Lancet*, 1969, 2, 230.

SIR,—Your leading article on venous thromboembolism and anticoagulants in pregnancy (22 November, p 421) emphasises that the failure to reduce death from thromboembolism during pregnancy is mainly because clinical diagnosis is inaccurate because invasive techniques such as phlebography and ¹²⁵I-fibrinogen uptake scanning are hazardous.

However, the problem may be overcome by a number of non-invasive techniques which carry no hazard to the fetus; these include thermography,¹ which has a 95% correlation with phlebography, and the measurement of the serum level of fibrin(ogen) degradation fragment E^{2,3} and plasma level of β -thromboglobulin.⁴ Preliminary results of these estimations show a considerable degree of accuracy in the diagnosis of venous thromboembolism. In our experience thermography alone has either confirmed the clinical suspicion or has avoided unnecessary anticoagulation in patients in whom this therapy would otherwise have been indicated.

In the future it may be possible to screen all patients at specific risk using one or more of the above methods, and it will be of great interest to see whether such a programme would serve to reduce the morbidity and mortality associated with venous thromboembolism in pregnancy.

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- ¹ Cooke, E D, and Pilcher, M F, *British Journal of Surgery*, 1974, 61, 971.
- ² Gordon, Y B, et al, *Lancet*, 1973, 2, 1168.
- ³ Cooke, E D, et al, *Lancet*, 1975, 2, 51.
- ⁴ Ludlam, C A, et al, *Lancet*, 1975, 2, 259.

Inhalation technique in treatment of asthmatic children with steroid aerosols

SIR,—The use of aerosol steroids has become well established as an important part of the management of severe childhood asthma.¹ Their place is well deserved and few would doubt their efficacy. However, there remain a few children in whom control of symptoms is inadequate without resort to alternate-day oral steroids, and we have realised recently that poor inhalation technique has been the probable reason for the inadequate response in some of these.

In the children's asthma clinic at this hospital patients have always been carefully

taught how to take aerosols when they are first prescribed. In addition to this we now ask all children to demonstrate their inhalation technique at each visit. We have found some who do not take their inhalations correctly, and control of symptoms has improved very considerably in some cases when they have been re-instructed.

We therefore suggest that asthmatic children who are receiving inhalation therapy should be asked to demonstrate the use of their inhaler as a routine part of such outpatient visits and that particular attention should be paid to this point in those children with persistent symptoms for whom oral steroid therapy is being considered.

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¹ Godfrey, S, and König, P, *Archives of Disease in Childhood*, 1974, 49, 591.

Cigarette smoking and chest pain

SIR,—I was surprised that your leading article on this subject (15 November, p 368) made no comment about gastro-oesophageal reflux as an important and common reason for anterior chest pain.¹ Reliance on demonstrating a hiatus hernia to confirm this diagnosis is misplaced.^{2,3} Cigarette smoking is a potent cause of gastro-oesophageal reflux⁴ because it causes relaxation of the lower oesophageal sphincter,⁵ and this mechanism should therefore be much more frequently considered as the cause of chest pain in smokers than your article suggests. The oesophageal acid perfusion test^{6,7} is helpful in confirming the diagnosis.

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- ¹ Bennett, J R, and Atkinson, M, *Lancet*, 1966, 2, 1123.
- ² Hiebert, C S, and Belsey, R H R, *Journal of Thoracic and Cardiovascular Surgery*, 1961, 42, 352.
- ³ *Lancet*, 1968, 2, 267.
- ⁴ Stanciu, C, and Bennett, J R, *British Medical Journal*, 1972, 3, 793.
- ⁵ Dennish, G W, and Castell, D O, *New England Journal of Medicine*, 1971, 284, 1136.
- ⁶ Bernstein, L M, and Baker, L A, *Gastroenterology*, 1958, 34, 760.
- ⁷ Bennett, J R, and Atkinson, M, *Lancet*, 1966, 2, 1150.

SI units

SIR,—I am directed to write to you on this subject by my committee. There is no support from the clinicians in this district, or indeed in the area of East Sussex, for the introduction of SI units at this time. It is our opinion that the use of even relatively small quantities of money to effect this change will be wrong and that absolutely no benefits to the patients will follow such a change.

The argument that it is standardisation is the purest tosh. All doctors and laboratory workers will need to carry two standards in their memories since reference to American and Scandinavian work will be large. We would like to see the change to SI units delayed until such time as the Health Service can afford even these small charges and the