respiratory distress syndrome and which can be done only at birth or on the spot. Ventilation with high oxygen concentrations is best reserved for larger referral units to which babies requiring such treatment can be safely transferred either in utero if the risk is predictable or by flying squad if it was not. Their treatment requires practised staff round the clock, an adequate number of ventilators in working order, laboratory support for the measurement of blood gas tensions, bilirubin levels, and electrolytes, the maintenance of apparatus in working order, and chronic umbilical artery catheterisation of the infant, which is a hazardous procedure in unpractised hands, as well as other uncommon and potentially lethal complications.

It is our contention that all very sick babies suffering from medical, surgical, or cardiac conditions or any combination thereof should be referred to one regional unit for treatment in their own interests and in that of other babies in the referring unit. Those who enjoy such work should get a job there if they want to do it. There is plenty for the peripheral neonatologist to do that does not involve intensive care of very ill babies.

However, we do not entirely agree with the Oppé Report recommendations¹ and would advocate instead a policy whereby babies causing concern should be held under observation in an annexe to the labour ward until it becomes clear either that they are well enough to join their mothers or that they need intensive care.

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¹ Department of Health and Social Security, *Report of the Working Party on the Prevention of Early Neonatal Mortality and Morbidity*. London, DHSS, 1974.

Intensive investigation in management of Hodgkin's disease

SIR,—The excellent study by Dr S B J Sutcliffe and others (4 December, p 1343) confirms the value of laparotomy and splenectomy in the staging and management of patients with Hodgkin's disease.

We have reported cases of fulminating septicaemia following splenectomy in our own experience and discussed the possible significance of changes in serum immunoglobulin levels (particularly the fall in IgM) following operation and treatment¹; longer-term studies are in progress. Serious infection following splenectomy is probably not common² and Dr Sutcliffe and his colleagues do not comment on this particular point, though they have had some morbidity related to the operation itself. What would be helpful would be to try and identify patients who may not need exploratory laparotomy.

Total cellular anergy is infrequent, but in our studies so far it has been found to be invariably a feature of generalised disease.³ We have now assessed 78 untreated patients by four techniques (skin and leucocyte migration inhibition testing with recall antigens, lymphocyte transformation with phytohaemagglutinin, E-rosette studies). Total cellular anergy as judged by subnormal response in all tests was seen in only five cases (6%). In three of these patients disease was obviously generalised (clinically stage

IIIB in one and stage IVB in two). The other two patients were in clinical stages IA and IIA respectively but were found to be in stage IVA after laparotomy and splenectomy.

If it were to be confirmed that total cellular anergy always implied generalised disease (that is, that the patients were in the chemotherapy group), then these patients, in whom retention of the spleen may prove beneficial in the long term, could be excluded from laparotomy regardless of apparent clinical stage.

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¹ Hancock, B W, *et al*, *British Medical Journal*, 1976, 1, 313.

² Desser, R K, and Ultman, J E, *Annals of Internal Medicine*, 1972, 77, 143.

³ Hancock, B W, *et al*, *Clinical Oncology*. In press.

Dangers of corticosteroids in phaeochromocytoma

SIR,—We were very interested to read the case report by Drs Peter Daggett and Stephen Franks (8 January, p 84) describing a patient with phaeochromocytoma who experienced hypertensive episodes while on a high daily dose of 45 mg prednisone, given to treat concurrent giant cell arteritis, but not when the dose was reduced to 5 mg. They also observed marked hypertension when 100 mg hydrocortisone was given parenterally. A similar observation was made by Cowley *et al*¹ when 100 mg hydrocortisone was given before the removal of a phaeochromocytoma.

A peripheral interaction may partly explain these observations since there is good experimental evidence that corticosteroids have a permissive role in, and may also potentiate, the smooth-muscle response to corticosteroids.² However, we suggest that corticosteroids when given in high doses may have a significant direct action on the adrenal medulla. We have shown that concentrations of hydrocortisone in the range 20–200 mg/l release catecholamines from isolated perfused dog adrenal glands³ and we would expect a dose of 100 mg hydrocortisone given parenterally to reach an initial plasma concentration of approximately 30 mg/l, assuming a plasma volume of, say, 3 l. This concentration is of the order found in the adrenal venous effluent in stress or after corticotrophin administration.⁴

Thus the hypertensive episodes may be due to the direct action of hydrocortisone on the adrenal medulla and phaeochromocytoma tissue. High circulating levels of prednisone are also likely to potentiate the release of catecholamines from chromaffin tissue. Furthermore, in dogs we found that corticotrophin administration results in the release of adrenal catecholamines⁵ and hypertensive crises have been described following corticotrophin administration to patients with phaeochromocytoma.^{1,6,7}

We suggest that high doses of corticosteroids may have a significant direct action on chromaffin tissue and wonder what role the intra-adrenal and peripheral interactions between corticosteroids and catecholamines play in massive dose corticosteroid therapy for shock.

Finally, we repeat that the administration of either corticosteroids or corticotrophin may be hazardous in patients with phaeochromocytoma.⁸

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¹ Cowley, D J, Montgomery, D A D, and Welbourn, R B, *British Journal of Surgery*, 1970, 57, 832.

² Ramey, E R, and Goldstein, M S, *Physiological Reviews*, 1957, 37, 155.

³ Critchley, J A J H, *et al*, *Journal of Physiology*, 1974, 254, 30P.

⁴ Marotta, S F, *Proceedings of the Society of Experimental Biology and Medicine*, 1972, 141, 923.

⁵ Critchley, J A J H, and Ungar, A, *Journal of Physiology*, 1974, 239, 16P.

⁶ Welbourn, R B, personal communication.

⁷ Moorhead, E L, *et al*, *Journal of the American Medical Association*, 1966, 196, 1107.

⁸ Critchley, J A J H, West, C P, and Waite, J, *Lancet*, 1974, 2, 782.

Student health

SIR,—I would like to make a few comments on the letter from Mr D R Forsyth (25 December, p 1560).

Manchester University Student Health Service tries to offer a service to suit the individual student. Some students do in fact like to be seen by prearranged appointment. However, there is always at least one doctor available to see patients who walk in. Similarly, the counsellors see students either by walk-in or appointment. Nurses are always available and can and do refer patients to the doctor directly. The reception staff make considerable effort to ensure that the patient attends at the centre to fit in with university commitments. The system is kept as flexible as possible.

Unfortunately we are not allowed to provide general practitioner services as part of the NHS. Hence the number of doctors is limited as the service is funded almost entirely by the university. There are four medical officers at the centre, although the accepted ratio is 1500 to 2000 patients per doctor, so there should be 12 doctors. Attendances at the student health centre have increased from 26 000 to 34 000 and now some 40 000 over the last three years.

We hope that in Manchester the student has no dilemma about a choice to be made between health and education.

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Erythromycin-resistant *Clostridium welchii*

SIR,—I wish to report the isolation of a strain of *Clostridium welchii* resistant to erythromycin. The minimum inhibitory concentration (MIC) in broth is 512 mg/l: sensitive strains, tested in parallel, were inhibited by 2 mg/l. The strain was also resistant to tetracycline and the patient was hypersensitive to penicillin.

Tetracycline resistance in *C. welchii* is now well recognised, but I have seen no report of resistance to erythromycin in the UK, and this antibiotic has been recommended^{1,2} for the prophylactic treatment of patients hypersensitive to penicillin who are undergoing certain operations prone to the complication