the embryonic circulatory system has developed interchange of transplantation antigens is possible; before this some traffic of trophoblastic cells or of subcellular material from the fetal complex to the mother may occur, while the passage of immunopotent substances into the embryo from the maternal circulation is also a possibility. Antigen thus transferred could be not only non-sensitising in form and amount but also capable of defunctioning rejection mechanisms in ways previously reviewed¹ and artificially explored.⁶

Whichever of these hypothetical mechanisms may be shared with the cancer-host and the surgical transplant-recipient systems, it seems clear that the immunological equilibrium existing throughout pregnancy is a dynamic multifactorial system with a steady interchange of immune information and a concomitant ever-changing series of reactions. Knowledge of the kinetics of humoral and cellular responses to the two-way traffic in transplantation antigens is the central need of further understanding.

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¹ Anderson, J. M., *Nature's Transplant*. London, Butterworths, 1972.

² Anderson, J. M., *Proceedings of the Royal Society B*, 1970, **176**, 115.

³ Oldstone, M. B. A., et al., *Nature*, 1977, **269**, 333.

⁴ Anderson, J. M., Stimson, W. H., and Kelly, F., *British Journal of Surgery*, 1976, **63**, 819.

⁵ Stimson, W. H., *Journal of Reproduction and Fertility*, 1975, **43**, 579.

⁶ Anderson, J. M., in *The Biology and Surgery of Tissue Transplantation*, ed J. M. Anderson, p. 129. Oxford, Blackwell, 1970.

Confusion about New Zealand abortion

SIR,—Professor H. C. McLaren (24 June, p. 1697) criticises Dr Richard Smith for his article about abortion in New Zealand (10 June, p. 1533) and suggests that “he offers no support” for his opinion that “most doctors were against the [new] law” and proceeds to throw doubt on the survey he quoted. He follows this with his own opinion about New Zealand abortion politics, which from my three-year experience of working there is pure fantasy (and tells us more about Professor McLaren than about the majority of people in New Zealand).

Dr Smith's article is amply supported by the evidence gathered in two surveys conducted in November 1977 before the new law was passed.¹ Professor R. McD. Chapman, of Auckland University, surveyed all the 4200 doctors currently registered in New Zealand with New Zealand addresses; 51% replied and only 20% of these supported the Bill, which was ultimately passed. The General Practitioner Society conducted a similar survey among 1400 general practitioners; 72.9% replied, and 79% of these doctors, who cannot escape from the problem of unwanted pregnancy in the way that hospital doctors can, agreed with the statement that “a new abortion law should be so formulated as to leave the question of termination during the first three months of pregnancy to the woman and her medical advisers and that the fetus should be afforded the protection of the law in the last six months of pregnancy.” Public opinion polls have consistently shown a majority of people in favour of liberalising the law, and the latest of these, in October 1977, given to a random sample of 1000, showed 88% in favour of a more liberal law

than existed then, which was less restrictive than the law which was subsequently enacted. In 1974, with the help of the National Organisation of Women (Gisborne branch) I conducted a survey of opinion about abortion among the 62 doctors practising in the east coast area. Apart from the two doctors who tore the form up (who probably would see things in the same way as Professor McLaren), replies were obtained from 57. Just over 50% agreed with the statement that “abortion should be a personal decision between the woman and her physician” and subsequent referral practice confirmed the validity of these responses.²

In the three years I worked in Gisborne the need for termination was apparent and attitudes were very similar to those in England. The effect of the restricted abortion law now passed will be to prevent the older, more parous, poor woman from obtaining an abortion as the younger, nulliparous woman with no responsibilities and the rich will fly to Australia, where large series have already been reported.³

Professor McLaren may have been influenced by the attitudes of some members of the Royal New Zealand College of Obstetricians and Gynaecologists, some 50% of whom, when surveyed for the Royal Commission on Sterilisation in 1975, disapproved of abortion on either ethical or “other” grounds⁴; but I doubt that even Mr Muldoon's supporters would say that “tolerance and compassion” were his strong points and the passage of the new Act through the New Zealand Parliament was considered by many observers to be an abuse of the democratic system.

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¹ Facer, W., *New Zealand Nursing Forum*, 1978, **6**, 13.

² Savage, W., *Proceedings of Royal Commission on Contraception, Sterilisation, and Abortion*. Wellington, Government Printer, 1976.

³ Rogers, A. F. C., and Lenthall, J. F., *New Zealand Medical Journal*, 1975, **81**, 282.

⁴ Royal New Zealand College of Obstetricians and Gynaecologists, *Proceedings of Royal Commission on Contraception, Sterilisation, and Abortion*. Wellington, Government Printer, 1976.

Phenistix urine test-strip and desferrioxamine

SIR,—Twins aged 16 months were admitted to our unit on 21 April 1978 having ingested an unknown number of ferrous gluconate 300 mg tablets about 25 min before admission. Immediate treatment was instituted, including the administration of desferrioxamine mesylate. Samples of venous blood taken 3 h 50 min after the iron ingestion gave serum iron readings of 51.5 $\mu\text{mol/l}$ (288 $\mu\text{g}/100\text{ ml}$) and 56 $\mu\text{mol/l}$ (313 $\mu\text{g}/100\text{ ml}$) respectively.

Specimens of urine from all children admitted to this hospital have for several years been tested with a Phenistix strip, partly as a screening procedure for unsuspected salicylate poisoning. When a Phenistix test was carried out on a urine specimen obtained from each twin after the desferrioxamine had been administered a very deep red-brown colour resulted. A repeat venous blood sample from each of the twins at 23 h after the iron ingestion showed no demonstrable salicylate content, while the serum iron readings were 12.5 $\mu\text{mol/l}$ (70 $\mu\text{g}/100\text{ ml}$) and 10.5 $\mu\text{mol/l}$ (59 $\mu\text{g}/100\text{ ml}$) respectively. The urinary Phenistix test was

entirely negative in both children 25 h 30 min after the iron ingestion.

Two urine specimens from a patient with thalassaemia, one taken before and the other after the administration of desferrioxamine, have been tested with Phenistix, and the same change was seen in the second specimen. Desferrioxamine mesylate solution taken from an ampoule and then well diluted will produce a similarly striking change when applied to a Phenistix strip.

Although the urine of patients receiving desferrioxamine can have a characteristic reddish discoloration, the Phenistix test-strip is at manufacture impregnated with ferric ammonium sulphate along with other substances.

I wish to thank student nurse Sonia C. Archibald, who drew attention to the abnormal Phenistix reaction in the twins.

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Platelet MAO activity in epilepsy

SIR,—Your leading article on serotonin, platelets, and autism (24 June, p. 1651) was of considerable interest to us because we have been studying the platelet monoamine oxidase (MAO) activity in patients with epilepsy, a disorder which may accompany infantile autism and mental illness. Our results from earlier investigations showed that tyramine, a substrate for MAO, activated the electroencephalogram of epileptic patients,¹ and preliminary analysis of our present results shows that the platelet MAO activity is significantly raised in epileptic patients when compared with neurological controls and normals. There are also some sex differences. All the epileptic patients were taking anti-convulsant medication, and it may be that this is important.

It is possible that our observations relate directly to a biochemical substrate for epilepsy at a cellular level, and it is hoped to publish full results shortly.

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¹ Swash, M., Moffat, A., and Scott, D. F., *Nature*, 1975, **258**, 749.

Management of intracranial metastases

SIR,—We noted with regret that the article by Mr M. M. Sharr and Mr J. S. Garfield (10 June, p. 1535) failed to mention the place of palliative radiotherapy in the management of patients with intracranial metastases.

The neurosurgeon deals with a small and highly selected group of these patients. They are often those presenting with undiagnosed cerebral metastases or with a solitary intracranial deposit. Even in this group of patients the results of surgical intervention either with or without postoperative radiotherapy are acknowledged to be poor.^{1,2} The operative mortality alone in some series is as high as 20%.²

By contrast the value of radiotherapy alone in the management of patients with multiple

intracranial metastases is well documented⁴⁻⁸ 47-80% of unselected patients with intracranial metastases may be expected to obtain symptomatic relief with cranial irradiation⁵⁻⁸ and about 12% are still alive and active one year later.³ These results are obtained without the stress to the patient of a major operation.

We hope these details will encourage the general physician to consider irradiation as a palliative measure for patients with cerebral metastases.

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¹ Paillas, J E, and Pellet, W, in *Handbook of Clinical Neurology*, ed P J Vinken and G W Bruyn, p 229. Amsterdam, North Holland, 1975.

² Harr, F, and Patterson, R, *Cancer*, 1972, **30**, 1241.

³ Montana, G, Mescham, W, and Caldwell, W, *Cancer*, 1972, **29**, 1477.

⁴ Hinds, W A, et al, *Cancer*, 1970, **26**, 138.

⁵ Chu, F C H, and Hilaris, B B, *Cancer*, 1961, **14**, 577.

⁶ Chao, J, Phillips, H R, and Nickson, J J, *Cancer*, 1954, **7**, 682.

⁷ Valk, J, in *Handbook of Clinical Neurology* ed P J Vinken and G W Bruyn, p 512. Amsterdam, North Holland, 1975.

⁸ Deeley, T J, and Edwards, J M, *Lancet*, 1968, **1**, 1209.

Anticonvulsants and thyroid function

SIR,—Dr P P B Yeo and his colleagues (17 June, p 1581) do not refer to an earlier study in which the effects of phenytoin on circulating thyroid hormones were reported.¹ Although agreeing that serum concentrations of thyroxine are significantly reduced in patients taking phenytoin for prolonged periods, our data suggested that this phenomenon could be adequately explained in terms of hormone displacement from serum-binding proteins with consequent increased turnover. Thus we found a small increase in free thyroxine concentration, which was the resultant of a higher free fraction and reduced total serum hormone concentration. This was reflected in an increase in the urinary excretion of unconjugated thyroxine.

Measurement of free thyroid hormone concentration in serum is difficult. The free fraction of thyroxine (0.009%) calculated from the data on control patients presented by Dr Yeo and his colleagues seems rather lower than most other workers have reported.

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¹ Finucane, J F, and Griffiths, R S, *British Journal of Clinical Pharmacology*, 1976, **3**, 1041.

Relative activity of atenolol and metoprolol

SIR—I read with interest the letter from Dr J D Harry and Anne G Shields of ICI (8 July, p 128) on the relative efficacy of atenolol and metoprolol in reducing heart rate in which they confidently claim that, although these two drugs are equipotent 3 h after single dose ingestion, atenolol is significantly more effective 24 h after ingestion.

I have recently completed a double-blind comparison of atenolol and metoprolol in the treatment of hypertensive patients in general practice, the results of which are to be published. From my data there is evidence

that refutes these claims. Three months after the start of the study 12 patients were randomly selected for standard exercise tests (75 W for 5 min) and pulse rate measurements. Six patients were later found to have been taken from the atenolol group and six from the metoprolol group. The single daily doses of the two drugs taken by these patients were comparable (200 mg). The mean pulse rate increases after exercise in the atenolol group were 21/min at 3 h after ingestion, and 26/min at 23 h after ingestion. The corresponding pulse rate increases in metoprolol patients were 19 and 21/min. There were no significant differences between the potency of atenolol and metoprolol at either 3 or 23 h after single-dose ingestion.

It seems to me to be unwise and even irresponsible to use evidence from short-term studies in healthy volunteers to deduce values for a drug which is, after all, more commonly used in the long term in unhealthy patients. Our evidence, after long-term single daily dose treatment of real patients in general practice, suggests that atenolol and metoprolol are equipotent 23 h after single-dose ingestion. This evidence, coming as it does from a well-designed general practice study is, I would suggest, of more and real practical value. One further point: since our data suggest that atenolol and metoprolol are equipotent at 3 h and at 23 h after ingestion the threefold price difference between the two drugs surely makes metoprolol preferable to atenolol in the long-term treatment of patients with chronic cardiovascular disease.

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Health care in developing countries

SIR,—Rational decisions on health care policies, both in developed and in underdeveloped countries, depend on reliable figures of cost and of outcome. For this reason, the study by Dr P H Rees and others (8 July, p 102) performs a most useful function. The conclusions, however, suggest that the application of cost-benefit methods is limited to the work of a hospital.

Most underdeveloped countries have inherited a health care system from the colonial era which was based on the model found in the industrialised countries. Hospitals in towns and cities cater mainly for the urban population, who are often relatively well provided for in terms of food, a clean water supply, and sewerage. In most underdeveloped countries, however, 80-90% of the population lives in rural areas. Allocation of resources to hospital care will inevitably deprive rural populations of cheap primary care, and urban teaching hospitals cannot logically be justified as a substitute for improving care in rural dispensaries. The annual cost of the intensive care unit at Kenyatta Hospital could provide prophylactic antimalarials for about one-million under-5s.

The authors justify the expense of reference hospitals in terms of their teaching function. Yet these hospitals will produce health workers who have become accustomed to using expensive investigative and therapeutic methods available only in the large hospitals and will be reluctant to work outside these "centres of excellence." The exodus of health care workers from underdeveloped countries

to Britain and other industrialised countries is in part the consequence of training these health workers in the skills of Western-type medicine in Western-style hospitals.

The authors point out that available and economic methods of prevention will have little impact on most medical admissions. Yet many of the diseases they treat are diseases of poverty, the results of poor nutrition and sanitation. Certainly these are not easily preventable, but equally the incidence of these diseases will not be reduced by any amount of curative health care. One major effect of the emphasis on curative medicine is to create the illusion that health is synonymous with health care. In reality improvement in health can come only from improvements in the conditions which produce ill health, and this is as true in Britain as it is in Africa.

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Axillary hyperhidrosis

SIR,—The results of the trial reported by Dr K T Scholes and others (8 July, p 84) confirm the good results reported by Hurley and Shelley.¹ In Exeter we have used their original regimen for five patients referred for surgery and in each case excellent control has been obtained, so much so that the patients, previously desperate for surgical treatment, have not required it.

Dr Scholes and his colleagues state in their summary that "no troublesome side effects were reported," although one patient had to stop treatment because of "unbearable irritation" and 29 (45%) had irritation severe enough to require topical steroids. We have also found that irritation may be troublesome, although it is certainly greatly reduced if the occlusive film is omitted, without affecting the efficacy of the treatment. Irritation may prevent sleep, and in this case daytime treatment is possible; one of our patients treats herself successfully for four hours each Sunday morning. It is most important to advise the patients not to shave the axillary skin immediately before treatment, since this leads to severe irritation.

Although the treatment is slightly irksome, our patients have accepted it gladly. It is too soon to abandon surgery completely, since the long-term results of this topical treatment are not known. However, this method provides control of socially debilitating symptoms and should be offered to all sufferers before surgery is considered.

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¹ Hurley, H J, and Shelley, W B, *Journal of the American Medical Association*, 1963, **186**, 109.

Abuse of pentazocine

SIR,—The recent report by Drs Alan King and T A Betts (1 July, p 21) suggests that their pentazocine experience is uncharacteristic and their evidence may be incomplete.

The possibility that pentazocine abuse can occur has long been recognised, but experience confirms that the risk of dependence is low. Only 555 reports of alleged dependence are available worldwide up to the end of 1977,