ADDISONIAN SYNDROME ASSOCIATED WITH TREOSULFAN

SIR,—The report of Dr Prior and Dr White[1] on adrenal insufficiency in ovarian carcinoma following 60 g of treosulfan over 6 weeks prompts me to record a few points from my experience of seventy patients treated with the drug given 1 g daily for 28 days every second month.

Transient marrow depression similar to that seen with chlorambucil occurred, but there was no hepatic toxicity or nephrotoxicity. Three patients showed mild pigmentation, one minimal alopecia, but adrenal insufficiency as reflected in blood-pressure and serum electrolytes was not noted. Cortisol evaluations in a few patients on long-term treatment were normal, but full evaluation would involve overnight admission for midnight and morning cortisol assay for accurate assessment.

Perhaps the report from Prior and White represents idiosyncrasy to a large dose or adrenal metastasis from the primary or bleeding from thrombocytopenia during pancytopenia.

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ONE-PARENT FAMILIES

SIR,—At the risk of muddying the waters still further, I feel that I need to reply to Mr Lewis's letter (Jan. 6, p. 46) if only to remove a number of misapprehensions for which I must accept some of the onus.

My Dec. 9 letter was provoked by your précis of the annual report of the National Council for One Parent Families, on which my argument was based; but if I gave the impression that I disapprove of what the Council are trying to do to improve the lot of one-parent families, or that I am in favour of compulsory adoption, or that most children in one-parent families are conceived out of wedlock, or that all children in one-parent families do badly, my letter was misleading. On the other hand, there seems to be no doubt that while in many areas the proportion of illegitimate to legitimate births is going up, the proportion of illegitimately born babies offered for adoption is going down; and it is my impression, reinforced by Mr Lewis's letter, that some social workers are in favour of the resulting trend towards the acceptance of one-parent families as a norm for such children to which Government policy ought to be adapted.

I suspect that I am not alone among children's physicians in finding that an increasing part of my work involves such families, whose problems are as much social as medical, and which are not in my view simply the result of financial hardship—or alone in regretting that it is becoming increasingly difficult for couples who want to and can provide a good home for a baby to be able to adopt one. Such couples, incidentally, are not, in my experience, by any means confined to the well-off middle-class nor are they unwilling to adopt children of a different colour to their own or children with handicaps. Perhaps we could agree that it might be desirable were a higher proportion of illegitimate babies to be offered for adoption, such as those babies whose natural mother is undecided about what she thinks would be best for the baby, without arguing about the social engineering needed to ensure that all such babies should be adopted, which is neither possible nor, necessarily, desirable. I should add that if the National Council are prepared to use statistics about the disadvantages suffered by the children concerned (my list did not include a propensity to vandalism) to support their arguments for increased financial assistance for the one-parent families, it is surely legitimate for me to cite them in my arguments for a reconsideration of the merits of adoption.

I regret that a letter published in a medical journal and addressed to its readership should have been cited in the national Press in such a way as possibly to hurt the feelings of a lot of admirable women struggling to make a success of what I think is the very difficult task, from conception onwards, of bringing up children without the support of a husband: modern life makes it difficult enough anyway.

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1. Prior, J., White, I. *Lancet*, 1978, ii, 1207.

MEDICAL-SCHOOL ADMISSION POLICIES

SIR,—Selection for admission to medical school is a secretive process. Studies of medical students[1] and medical-school rejects[2] and an anecdotal account in the *Guardian* of Dec. 18[3] suggest that all is not well with the procedures used by admissions tutors. The Secondary Heads Association sent a questionnaire distributed to admissions tutors at thirty-one medical schools in the U.K. Sadly, their report has not had much publicity. We have reanalysed some of the information presented. Not all admissions tutors responded to all questions, and percentages reported are of those who answered that particular question.

The Universities Central Council on Admissions (a clearing house for university applicants in the U.K.) provides for five choices. Nine (30%) schools required that all five choices should be for medicine; five (17%) said that this was advisable; and four (13%) replied, "No, but most do in practice". Thus only twelve (40%) medical schools did not say that all five choices must be for medicine, and only one of these (Aberdeen) considered that choice of an alternative course was desirable as an insurance. Even though many schools required all five choices to be for medicine, seven medical schools (27%) automatically rejected candidates who put them as the fourth or fifth choices, and four more (15%) seemed to do so. Bristol, Nottingham, and Guy's implied both that all five choices must be medicine and that fourth and fifth choices would be automatically excluded. Sixteen (59%) said that the candidates' order of preference was taken into account, only three said that order of preference was of no consequence. Most candidates have little knowledge of particular medical schools, or of their admissions procedures (unless they are from medical backgrounds), so excessive dependence upon preferences given on the U.C.C.A. form probably harms many candidates inadvertently and benefits only a knowing few. We suggest that U.C.C.A. should not supply medical schools with information on a candidate's order of preference, and that tutors for admission should not ask for this information at interview.

Twenty-two schools (71%) always held interviews, five never did so and four held them only for special cases. In view of the clear prejudices expressed by some interviewers,[3] many candidates would be advised to apply to the non-interviewing schools.

Despite suggestions that both medical schools and the medical students themselves would benefit if the students were drawn from a broader spectrum of age, experience, and education, twenty-one (81%) schools were willing to admit students under the age of 18 and only five discouraged this or said that it was not allowed. Only six schools encouraged or favoured students taking a year or more off between school and university, and eleven said that this practice was not favoured. Subjects other than science were acceptable at only nine schools and were wholly unacceptable at eleven schools. Six medical schools would, however, accept a single non-science A-level as an addition to two science subjects.

We would argue that all of these requirements—in the absence of any evidence to support them—unnecessarily restrict the range of abilities to be found among medical stu-

1. Cruickshank, J. K., McManus, I. C. *New Society*, 1976, **35**, 112.
2. Johnson, M. L. *Br. J. med. Educ.* 1971, **5**, 260.
3. Toynbee, P. *Guardian*, Dec. 18, 1978, p. 13.

dents. While not wishing to reduce the range of medical schools (pluralism in schools is as important as pluralism in students) we would argue that schools should not extend their own distinctive persona at the expense of particular, and unknowing, groups of applicants.

We would further recommend that no-one should enter the lottery of medical school application without the useful booklet *Entrance Requirements for Medical School* (price £1, from the Secondary Heads Association, 29 Gordon Square, London WC1).

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T_3/T_4 RATIO IN THYROID DISEASE

SIR,—We reported that the serum triiodothyronine/thyroxine (T_3/T_4) ratio was useful for differentiating the destruction-induced thyrotoxicosis from stimulation-induced hyperthyroidism of Graves' disease.[1] Dr Walfish,[2] however, questioned the usefulness of this index; 3 of his cases of post-partum transient thyrotoxicosis had ratios above 20 (ng/μg)—i.e., false negative for destruction-induced thyrotoxicosis according to our criterion.

We have further evaluated the T_3/T_4 ratio. All except 1 of 15 serum samples in the thyrotoxic patients with subacute thyroiditis showed T_3/T_4 ratios <20. 15 of 19 serum from 12 patients with destruction-induced post-partum thyrotoxicosis also had the ratio <20. In 6 of 7 patients with spontaneous transient thyrotoxicosis, the ratio was <20 as well. Thus 35 (85%) of 41 serum samples in destruction-induced thyrotoxicosis had normal T_3/T_4 ratios (<20).

In patients with a provisional diagnosis of thyrotoxic Graves' disease, the ratio was >20 in 121 of 150 cases. The 29 cases with ratios <20 were analysed further retrospectively. 5 achieved ratios >20 after 2–4 weeks follow-up without drugs. 3 were later, revealed to be have destruction-induced thyrotoxicosis because of the low radioactive-iodine uptake and spontaneous resolution of thyrotoxicosis. Of the remaining cases 5 were complicated by pregnancy, 4 had increased thyroxine-binding globulin (T.B.G.), 1 had hepatic cirrhosis, and 1 had heart-failure; in 8 patients no complications were noted; in 2 follow-up data for confirming the stimulation-induced hyperthyroidism were not available.

We measured serum-T_4 by double-antibody radioimmunoassay (R.I.A.) with 8-anilino-1-naphthalene sulphonic acid for inhibitor of T_4-T.B.G. binding; Walfish and his colleague[3] used competitive protein-binding assay (C.P.B.A.). In a preliminary study we found that T_4 values determined in our R.I.A. were higher than those determined by C.P.B.A. in some of the serum of patients with destruction-induced thyrotoxicosis. Whatever the significance of this discrepancy, the T_3/T_4 ratio was useful when T_4 was measured by R.I.A. The false-negative results of Walfish may be explained partly by the different method of T_4 assay.

Thus T_3/T_4 ratio estimated by R.I.A. seems to be useful for differentiating the two types of thyrotoxicosis, except in cases of Graves' disease complicated by pregnancy, increased T.B.G., and conditions associated with low T_3 syndrome.[4] Higher values might exceptionally be observed in very early phase of destruction-induced thyrotoxicosis,[1] so the time of sampling could also be important. T_3/T_4 ratios may differ because of differences in assay technique, so cut-off values should be established in individual laboratories. This index is simple and helpful in practice, although the radioiodine uptake studies are more reliable, as Walfish suggests.

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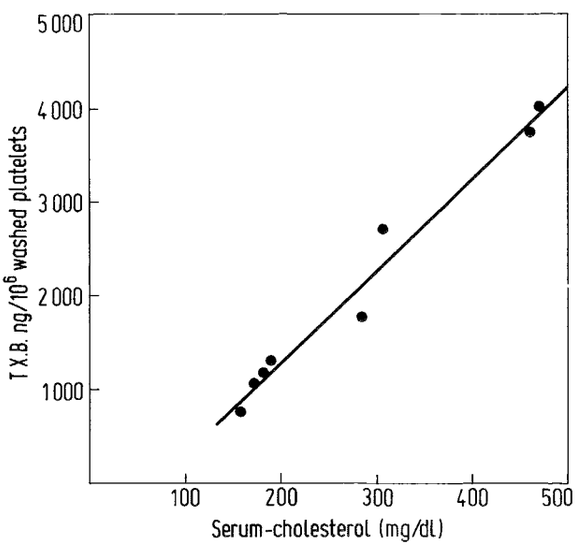
1. Amino, N., Yabu, Y., Miyai, K., Fujie, T., Azukizawa, M., Onishi, T., Kumahara, Y. *Lancet*, 1978, ii, 344.
2. Walfish, P. G. *ibid.* p. 1056.
3. Ginsberg, J., Walfish, P. G. *Lancet*, 1977, i, 1125.
4. Schimmel, M., Utiger, R. D. *Ann. intern. Med.* 1977, **87**, 760.

PLATELET THROMBOXANES AND SERUM-CHOLESTEROL

SIR,—Patients with type-IIa hypercholesterolæmia have increased risk of thrombotic and atherosclerotic complications. Carvalho et al.[1] reported that platelets from these patients are more sensitive to aggregating agents and produce increased amounts of thromboxane B_2 (T.X.B_2) from labelled arachidonic acid.[2] Whether enhanced platelet function is related to hypercholesterolæmia is still unclear. Using a radioimmunoassay[3] we have measured T.X.B_2 after aggregation induced by arachidonic

LEVELS OF T.X.B_2 IN WASHED HUMAN PLATELETS INCUBATED WITH ARACHIDONIC ACID 20 μmol/l

—	Serum-cholesterol (mg/dl)	Time (min)	
		1	2
Controls	175±8	1085±116	1265±142
Patients:			
A	472	4037	3526
B	460	3760	4792
C	307	2724	2146
D	285	1778	3084



Correlation between serum-cholesterol T.X.B_2 formation by washed human platelets after 1 min of incubation with 20 μmol/l.

1. Carvalho, A. C. A., Colman, R. W., Lees, R. S. *New Engl. J. Med.* 1974, **290**, 434.
2. Bizios, R., Wong, L. K., Vaillaincourt, R., Lees, R. S., Carvalho, A. C. A. *VI int. Congr. Thrombos. Hæmostas.* 1977, abstr. 228.
3. Granström, E., Kindahl, H., Samuelsson, B. *Analyt. Lett.* 1976, **9**, 611.