

that this is due to competition by circulating immune complexes, but there are many possibilities, which might of course have to be analysed in vitro.

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- ¹ Normann, S J, *Journal of the Reticuloendothelial Society*, 1973, 13, 47.
² Drivas, G, Udall, P R, and Wardle, E N, *British Medical Journal*, 1975, 3, 743.

Aplastic anaemia and hair dye

SIR,—Following the recent report by Drs P J Toghill and R G Wilcox (28 February, p 502) we would like to recount a similar case in this hospital

The patient was a 54-year-old housewife who developed aplastic anaemia of undetermined aetiology. As in the case reported, she had been using a new hair dye prior to this. This contained *para*-toluene diamine sulphate. She showed no response to prednisolone or oxymetholone, being maintained by blood and platelet transfusions. Five months later she remains well and is taking ethamsylate 500 mg four times daily.

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Exchange transfusion in prevention of iron overload

SIR,—Your leading article (1 November, p 244) entitled "Blood transfusion and iron overload" states that children suffering from chronic aplastic anaemia or homozygous thalassaemia requiring frequent blood transfusions usually die during adolescence or early adult life and treatment must be directed to preventing iron accumulation by all available means. I wish to report a method of exchange blood transfusion which I have found to be successful in this regard.

Case 1—A boy aged 16 had required frequent blood transfusions since infancy to sustain life. He was suffering from a haemoglobinopathy and showed the full syndrome of haemochromatosis with involvement of skin, bone marrow, liver, heart, pancreas, kidneys, and testes. The serum iron was 54 $\mu\text{mol/l}$ (300 $\mu\text{g}/100\text{ ml}$), with 100% saturation of iron-binding protein. A series of 14 exchange blood transfusions were given at intervals of 2-3 months. Two direct blood transfusion pumps were used simultaneously to take blood from a femoral vein and give blood into the other femoral vein from 6-8 consecutive donors.¹ There was marked clinical improvement and serum iron fell to 35 $\mu\text{mol/l}$ (195 $\mu\text{g}/100\text{ ml}$), with 55% saturation of the iron-binding protein. He died suddenly after a transfusion in February 1963.

Case 2—A woman aged 40 suffering from aplastic anaemia and paroxysmal nocturnal haemoglobinuria received, over a period of 12 years, 131 regular blood transfusions. Her skin became pigmented and she showed an increased amount of iron in the bone marrow, liver, and kidneys. In October 1958 her serum iron was 47 $\mu\text{mol/l}$ (260 $\mu\text{g}/100\text{ ml}$), with 98% saturation of the iron-binding protein. Regular exchange blood transfusions, given by the direct method using two donors, were then started. As a result of this treatment her clinical condition improved and by December 1967 the serum iron was reduced to 11 $\mu\text{mol/l}$ (64 $\mu\text{g}/100\text{ ml}$), with 26% saturation of iron-binding protein. During the period of 10 years until the patient's death in February 1969 from a subarachnoid haemorrhage she received 94 exchange transfusions. With

exchange transfusions her haemoglobin level ranged from 6 to 13.4 g/dl compared with 4.3-7.6 g/dl during the period of non-exchange transfusions. Post-mortem histological examination showed increased fibrosis of the liver with moderate deposition of haemosiderin. There was no excess iron in the bone marrow or kidney.

It is concluded that the exchange transfusions given in these two cases were beneficial because abnormal red cells were removed and replaced by normal erythrocytes with normal cell life span and normal haemoglobin.

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- ¹ McLean, J A, and Luke, H A, *British Medical Journal*, 1967, 4, 78.

Carcinoma-in-situ of cervix in sisters

SIR,—May I support Mr S Bender's suggestion of investigating sisters in patients with an intraepithelial carcinoma of the cervix (28 February, p 502)? In 1959¹ I reported the simultaneous cytological diagnosis of cervical cancer in three sisters, the third of whom we "waylaid" while she was visiting her other two sisters, then in hospital. All these three women are still alive and well. In over 25 years' experience in my department we have at least six other examples of preinvasive carcinoma of the cervix and clinical carcinoma of the cervix in sisters and we have at least 12 examples of the same in mother and daughter.

As Mr Bender states, there are no cancer families in which the cervix has been the organ affected, but, knowing what we now know about the epidemiology of this disease, it appears to be a case of "like mother, like daughter."

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- ¹ Way, S, Hetherington, J, and Galloway, D C, *Lancet*, 1959, 2, 890.

Immunological findings in multiple sclerosis

SIR,—The study reported by Dr G Lamoureux and others (24 January, p 183) is interesting with regard to the broad spectrum of tests performed. Unfortunately, the number of patients with multiple sclerosis (MS) investigated (23) was small and because of the criteria applied for selection (young adults with a remitting course and a CSF IgG value exceeding 0.035 g/l) the conclusions drawn apply only to a particular group of MS patients.¹

We have attempted to obtain detailed information from all patients with MS in a defined area of Lower Saxony² concerning the incidence of the following childhood infections: measles, mumps, rubella, varicella, poliomyelitis, fifth disease, herpes zoster, herpes simplex, exanthema subitum, rickettsioses, scarlet fever, encephalitis, meningitis, and hepatitis. Two control groups consisted of 53 patients with disc lesions or psychiatric illnesses in the same area and 17 relatives or friends of the MS patients who had lived with or close to them during childhood and were not more than three years older or younger.

No statistically significant difference was found between the three groups in the incidence of any infections with the single exception of fifth disease, of which eight

members of the first control group but none of those of the other two groups had a history. These results are in contrast to those of Dr Lamoureux and his colleagues, though the small number of their cases makes the interpretation difficult.

As MS is a disease common enough in northern Europe (prevalence about 50 per 100 000 inhabitants) it is possible to include as many patients and controls in a study as the level of significance requires. Conclusions should be drawn with caution from studies in which a small number of highly selected patients are investigated.

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- ¹ Olsen, J E, et al, *Journal of Neurological Sciences*, 1976, 27, 233.
² Firnhaber, W, *Vorkommen der Multiplen Sklerose und epidemiologische Aspekte in einem umschriebenen Gebiet Südniedersachsens*. Göttingen, Habil.-Schrift, 1969.

Failure of phenobarbitone to prevent febrile convulsions

SIR,—I was brought up on the conventional teaching that phenobarbitone was the most useful single drug for treating most cases of epilepsy in children, a statement that regrettably continues still to be repeated in books and review articles. Experience gradually led me to the exactly opposite conclusion—that phenobarbitone was worse than useless for this purpose. Worse not only because does one seldom come across a child whose fits have been benefited by it but also because so often the child's behaviour deteriorates noticeably (He's become so irritable, say the parents).

Hard evidence to disprove the effectiveness of an anticonvulsant drug is never easy to obtain or collect. Greatly to be welcomed, therefore, is the evidence that Dr J Z Hackmatt and his co-workers from Glasgow (6 March, p 559) have provided to counter the widely held notion that phenobarbitone is effective in one context at least—the prevention of febrile fits.

If phenobarbitone ceased altogether to be regarded as a drug for treating children with fits would there be anything but gain?

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Hazards of ergotamine tartrate

SIR,—Experience in the headache clinic at this hospital lends support to the note of caution sounded by Drs F C Rose and Marcia Wilkinson (28 February, p 525). I have seen many instances of the characteristic nausea and headache, present all day and every day and relieved briefly only by further ergotamine. These symptoms are due both to ergot toxicity and to the invariably coexistent tension (muscle contraction) headache; they are similar to the migraine that the patient has had in the past but are distinguished by the fact that uncomplicated migraine almost never occurs continuously every day. This complex picture is important because it is a sign not only of ergot toxicity but also of habituation.¹