hair has been advocated by a number of authors⁶ but is not a procedure which has been widely accepted in the United Kingdom. However, the use of enzyme variants employing a simple technique on single hairs possesses certain advantages over ABO grouping and it promises to enhance significantly the value of hair examination in corroborating, or disproving by exclusion, allegations of rape in which the circumstances of the crime have led to the forcible removal of hair by one or other of the participants. Such methods are already developed in the United Kingdom to the stage where they have been adopted into routine casework and produced in court as evidence.⁷

P H WHITEHEAD

Home office Central Research
Establishment,
Aldermaston, Berks

¹ Polson, C J, *The Essentials of Forensic Medicine*, p 70. London, Arnold, 1926

² Moennings, A A, et al, *Scientific Evidence in Criminal Cases*, p 361. New York, Foundation Press, 1973.

³ Twibell, J, and Whitehead, P H, *Journal of Forensic Sciences*, 1978, **23**, 356.

⁴ Oya, M, et al, *Forensic Science*, 1978, **11**, 135.

⁵ Yoshida, H, et al, *Reports of the National Institute of Police Science (Japan)*, 1978, **31**, 7.

⁶ Gramer, L, and Tausch, D, *Zeitschrift für Rechtsmedizin*, 1973, **72**, 63.

⁷ Fereday, L, personal communication.

Iodine and acetone-containing plastic spray dressings

SIR,—We would like to draw attention to the hazard of using Op-Site, an acetone-containing plastic spray dressing, in conjunction with tincture of iodine (weak iodine solution BP).

Following the substitution of an acetone-containing spray dressing for a non-acetone spray blistering of the skin occurred on the backs of two patients who had epidural analgesia during labour. The skin had been prepared with tincture of iodine. A gauze swab, used to prevent kinking of the catheter at the skin edge, had been held in place with the plastic spray while the dressing towels were removed. The gauze and catheter were then secured with Sleek waterproof plaster. Blistering occurred only where the iodine had been covered by both the spray dressing and Sleek.

Patch tests were performed on the ventral surface of the forearms of seven volunteers. No reaction was observed to the plastic spray dressing covered by Sleek. Erythema occurred in all areas painted with three coats of tincture of iodine and covered by Sleek. One subject had three minute blisters. More severe reactions occurred in areas treated with both tincture of iodine and the plastic spray dressing and covered with Sleek. In three subjects, including the one who produced blisters with tincture of iodine and Sleek alone, severe blistering occurred.

Although it is well known that an irritant compound is formed by the interaction of iodine and acetone in spirit,¹ the reaction between iodine and acetone in plastic spray dressing has not, to our knowledge, been reported.

J MORGAN-HUGHES
R A BRAY

Departments of Anaesthetics and
Pharmacy,
Norfolk and Norwich Hospital,
Norwich

¹ Martindale: *The Extra Pharmacopoeia*, ed A Wade, 27th edn, p 825. London, Pharmaceutical Press, 1977.

Glycolysated haemoglobin and diabetic control

SIR,—We read with great interest your leading article (27 May, p 1373) suggesting that Hb A_{1c} might be used as an index of long-term blood sugar control, and thus the metabolic abnormalities, of diabetes mellitus.

Hb A_{1c} is of course a glycoprotein, as are most of the blood proteins, and the time course of its synthesis and degradation are such as to reflect the long-term changes in blood sugar levels. However, this also applies to other blood glycoproteins. Two years ago we published¹ the results of our retrospective investigations into the relationships between five other blood glycoproteins and diabetic control and complications in 145 patients. In essence we found the same relationship between blood sugar control and the levels of these circulating glycoproteins and a similar relationship to plasma lipid levels as has been described for Hb A_{1c}.

While we agree that Hb A_{1c} is unlikely to be harmful in itself to diabetic patients, our results suggest that other glycoproteins might play a greater part in the pathogenesis of diabetic complications—for example, fibrinogen, α₂-macroglobulin, etc.

It is our feeling that there is a general increase in glycoprotein levels as a part of the abnormal metabolic processes found in diabetes which is best observed in the levels of those glycoproteins with highest hexose content. Whether these increases are causative or just associated with the development of diabetic complications is not clear.

We agree with you that serial measurements of Hb A_{1c}, and perhaps other glycoproteins such as fibrinogen or haptoglobin, might have great potential in monitoring long-term diabetic control, but prospective studies are clearly required before their value can be fully ascertained.

ARSAELL JÓNSSON

Department of Medicine,
Landspítalinn,
Reykjavik, Iceland

JOHN WALES

Department of Medicine,
General Infirmary,
Leeds

¹ Jonsson, A, and Wales, J K, *Diabetologia*, 1976, **12**, 245.

Expectations of a pregnant woman

SIR,—As a general practitioner obstetrician I should like to take issue with two aspects of the discussion (15 July, p 188) on the expectations of a pregnant woman in relation to her treatment.

Firstly, item (2) of the National Childbirth Trust's list states: "It would be assumed that she would go into labour normally unless it was considered to be unsafe for her baby or her." This presupposes that few women will wish labour to be induced near term if given the option, a fact which experience shows to be untrue. I find that given a free and informed choice many women opt for induction by amniotomy and oral prostaglandins between 40 and 41 weeks gestation rather than an at times stressful and frustrating wait for the spontaneous onset of labour.

Secondly, it is stated by Professor Richard Beard that "there is an almost insuperable administrative problem in ensuring that the same doctor . . . who is seeing the patient in

the antenatal period is available when she comes in in labour." With efficient organisation, the support of his partners, and the encouragement of his consultant colleagues it is perfectly feasible for the GP obstetrician to be available for the vast majority of the patients in labour booked under his care, and in our own practice I have managed to be present during labour for more than 90% of our patients booked into GP beds within a specialist unit.

Dr Geoffrey Marsh¹ has shown that where a GP conducts a large proportion of the obstetrics of the practice there is a reduction rather than an increase in the perinatal morbidity compared with the area rate. It is regrettable both for women in labour and for general practice that more GPs are not following his example.

K A HARDEN

Bearsden, Dunbartonshire

¹ Marsh, G N, *British Medical Journal*, 1977, **2**, 1004.

Relapse in acute lymphoblastic leukaemia

SIR,—We read with interest the article by Drs M A Cornblett and Judith M Chessells (8 July, p 104) on children with acute lymphoblastic leukaemia (ALL) relapsing both on and off treatment.

We have been looking at all children in nine major centres in the UK who have relapsed in their bone marrow while receiving combination chemotherapy. We confined the study to children who had received standard induction therapy, central nervous system prophylaxis, and combination chemotherapy for two years or more. The median duration of survival of 190 children was 157 days and there were no survivors beyond just over two years from the time of relapse (see figure). Included in the 190 children were the 37 children in group A of Drs Cornblett and Chessells. Ninety-three children achieved a second remission; the median duration of haematological remission was 97 days and the median duration of complete remission 80 days. We have no cures among this group of children and can confirm the very short expectancy of life for children with modern therapy who relapse while receiving treatment.

An improved response to combinations with asparaginase was noted in another of the centres reviewed besides Great Ormond Street, and the importance of asparaginase in refractory ALL has been reported by other

Life table showing duration of survival from relapse for children with ALL relapsing on treatment.

workers.¹ Over 15 different cytotoxic drugs had been used besides asparaginase in the 190 children after relapse, but the response was poor even when the drugs had not been used previously. It seems that leukaemia cells after relapse are resistant not only to most previously used drugs, as pointed out by Drs Cornblett and Chessells, but also to a wide variety of other cytotoxic drugs. The usual rationale for changing therapy in ALL after relapse assumes that resistance occurs at the metabolic site of action, and thus drugs acting at a different metabolic locus in the cell cycle should produce a therapeutic response. The poor response to drugs other than asparaginase may be more in favour of resistance occurring because of reduced uptake of drugs by the leukaemia cells. On the other hand the action of asparaginase is extracellular and its effect on leukaemia cells is independent of drug uptake by lymphoblasts. Certainly new approaches such as bone marrow transplantation are justifiable in selected cases; but the prospect of transplant in all relapses is daunting and is neither indicated nor feasible at present. The alternatives are palliative therapy or using protocols which test hypotheses about relapse. With this in mind a protocol could be designed to circumvent therapeutic resistance at cell membrane level. Asparaginase, glutaminase, asparagine synthetase inhibitors, and high-dose methotrexate could be tried in appropriate combinations. Some parents and patients may prefer this option to either palliative therapy or bone marrow transplantation.

PETER J KEARNEY
J H BAUMER

Limerick Regional Hospital,
Limerick, Eire

¹ Kung, F H, *et al*, *Cancer*, 1978, **41**, 428.

Quality of cervical mucus and Huhner's test

SIR,—The opinion of Mr G T Kovacs and his colleagues (1 April, p 818) that "any post-coital analysis which shows any motile spermatozoa per high-power field should be considered as indicating a normal result" puts a new interpretation on Huhner's postcoital test. It has been thought for some time that the number of sperms indicating a "good count" has been placed much higher than is necessary.¹ However, it would seem from the authors' statement that "the quality and quantity of mucus did not correlate with sperm counts or motility" that it is unnecessary to take at least the quality of the mucus into account when assessing the results of the test.

Many authors have demonstrated the differing properties of the mucus during the course of the menstrual cycle which enable it to play an active role in the migration of sperm into it and hence into the cervix after intercourse, this role depending on the fibrillar structure and its molecular alignment.² Moghissi³ found that sperm penetration occurs at approximately five or six days before ovulation and that penetrability increases gradually to a maximum at ovulation, with inhibition of penetration one or two days after ovulation. Dubois *et al*⁴ used a sensitive light-scattering technique to show variable migration rates of sperm into mucus.

Mr Kovacs and his colleagues state that all tests were performed during the ovulatory

phase of the cycle, but the methods they used to assess this phase⁵ would not enable it to be delineated precisely. The differing results for the two blood-stained specimens of mucus are therefore of interest. Without knowing the precise time of ovulation it is not certain whether these were specimens of premenstrual or of preovulatory mucus. Thus, while most of those mucus specimens which reflected enhanced numbers and higher percentage of motile spermatozoa were probably of type E of Odeblad,² in the absence of evidence to the contrary—for example, spinnbarkeit, fern test, or the woman's assessment of the quality of the mucus in accordance with the rules of the ovulation method¹—it is very possible that some of the specimens were of type G of Odeblad.

Huhner's test cannot be correctly interpreted unless the current state of the woman in regard to the cervical mucus is taken into account.

JOHN J BILLINGS
LOUIS A BENNETT

Ovulation Method Reference
Centre of Australia,
East Melbourne, Australia

¹ Billings, E L, Billings, J J, and Catarinich, M, in *Atlas of the Ovulation Method*, 3rd edn. Melbourne, Advocate Press, 1977.

² Odeblad, E, in *Cervical Mucus in Human Reproduction*, World Health Organisation Colloquium, Geneva, 1972, p 58. Copenhagen, Scriptor, 1973.

³ Moghissi, K S, in *Cervical Mucus in Human Reproduction*, World Health Organisation Colloquium, Geneva, 1972, p 128. Copenhagen, Scriptor, 1973.

⁴ Dubois, M, *et al*, *Nature*, 1974, **252**, 711.

⁵ Kovacs, G T, *British Medical Journal*, 1978, **1**, 1421.

Diflunisal (Dolobid) overdose

SIR,—A 47-year-old woman with chronic low backache took 116 diflunisal tablets, each containing 250 mg, in quick succession over 40 min on account of persisting pain. She also took pseudoephedrine hydrochloride for a cold. She felt giddy an hour later, having difficulty in maintaining balance, and eventually sank to her knees.

Three hours later she was admitted to the casualty department, where she was observed to be drowsy with blurred vision. Blood pressure was 130/90 mm Hg. Gastric lavage revealed food particles but no tablets. The patient deteriorated, becoming stuporose and then deeply unconscious over 10 h, unresponsive to painful stimuli. Forced diuresis was given but produced little clinical effect. Spontaneous recovery occurred and by 24 h consciousness had been regained.

Diflunisal is a new long-acting analgesic with a plasma half life of about 10 h. The recommended dose is two tablets a day. The compound, a salicylic acid derivative, is quickly absorbed, undergoes hepatic conjugation and is largely excreted in urine as the glucuronide metabolite. In considerable overdose depression of the central nervous system occurs, but the uneventful recovery in this case suggests that the drug is relatively non-toxic.

H P UPADHYAY
S K GUPTA

Llanelli General Hospital,
Llanelli, Dyfed

Social problems of schizophrenics

SIR,—With reference to your leading article (8 July, p 76), in which you refer to the study of schizophrenia in the community carried out in Salford by myself and my colleagues,¹ you

might be interested to know that the problems of social withdrawal and consequent social isolation experienced by the more neurotically handicapped patients in our sample was explored by us in some depth.²

I fully agree that your very apt quotation from Thoreau ("Most men lead lives of quiet desperation") describes the lives of many of these patients, but it would be regrettable if the minimisation of these very profound personal/social problems (whether labelled "neurotic" or explained away as an inevitable cerebral defect (Dr G J Lodge, 22 July, p 280)) should gain these people any sort of "dismissive attitude."

To be more optimistic, I would hope that the acknowledgment and recognition of the seriousness of these problems might create a climate for the rethinking and reconstitution of more appropriate rehabilitation programmes and consequently help the mentally ill living in the community to avoid a chronic backward type of existence in the homes of our cities.

J R KORER

University Department of
Psychiatry,
Mapperley Hospital,
Nottingham

¹ Cheadle, A J, Freeman, H L, and Korner, J R, *British Journal of Psychiatry*, 1978, **132**, 221.

² Korner, J R, Freeman, M C, and Cheadle, A J, *International Journal of Mental Health*, 1978, **6**, 45.

Relative activity of atenolol and metoprolol

SIR,—I would welcome the opportunity to reply to the comments made by Professor J H Barber (29 July, p 357) on my letter about the relative activities of atenolol and metoprolol (8 July, p 128).

Firstly, evidence is available from the recent study by Dr T Reybrouck and others (27 May, p 1386), in which hypertensive patients were given metoprolol for four weeks (300 mg once a day—higher than the doses used by Professor Barber), which is at variance with his own and more like my results obtained in volunteers. In this study after the four-week treatment the decrease over placebo in the mean heart rate increase on exercise was 60 beats/min 2 h after a dose and 28 beats/min 22 h afterwards—that is, a much lesser degree of beta-blockade at 22 h than at 2 h. The difference between the various sets of results is probably consequent upon different trial designs.

Professor Barber describes his study as "a well-designed general practice study." From the little detail given of the study the portion dealing with exercise testing falls short of the requirements to allow any conclusion about the relative potency of atenolol and metoprolol in patients on chronic therapy. In the first instance the study is a between-patient study (six only in each group) and further the level of exercise chosen (75 W for each patient—136 W in the trial of Dr Reybrouck and his colleagues) is indeed low (even perhaps lower than the kind of exercise taken by the patients in their daily lives) and such that the heart rates achieved by the patients if they had not been taking therapy could be achieved by "vagal withdrawal" with minimal sympathetic nerve stimulation. This is given support by the small increases in heart rate after taking the beta-blocker which would give actual exercise heart rates in the region of 90 beats/min—at least 10-20 beats below the intrinsic heart rate.¹ Consequently it is not surprising