detailed instruction to patients about increasing their steroids if necessary—should be introduced everywhere.

E POSNER

Mass Radiography and Routine
Chest X-ray Centre,
Stoke-on-Trent

¹ Collection of Withering Correspondence, Royal Society of Medicine, London.

² Quoted from Ellul-Micaleff, R, *Diseases of the Chest*, 1976, 70, 112.

³ Quoted from Earle, B V, *Thorax*, 1953, 8, 195.

⁴ Osler, W, *Principles and Practice of Medicine*, 6th edn, p 612. London, Appleton, 1906.

Myocardial infarction and control of diabetic metabolism

SIR,—The most interesting article by Dr A D N Gelson and his colleagues (26 June, p 1555) re-emphasises that known diabetics fare badly after myocardial infarction but, as in the recent Birmingham paper,¹ there is no record of postinfarction blood glucose concentrations. Other recent papers²⁻⁴ have confirmed the increased incidence of cardiac death in diabetics and suggest that this is not always the result of classical ischaemic heart disease.

We believe in a need for active treatment to reduce the blood glucose level of diabetics in the days immediately after cardiac infarction, whether the diabetes was previously treated with insulin or by diet alone or even when hyperglycaemia was not previously suspected but became gross after infarction (for example, sustained above 9 mmol/l (160 mg/100 ml)). Indeed it may be especially important to consider insulin treatment in such patients or those previously on diet alone, for it is relatively easier to increase the dose of insulin in those already on it.

Our opinion is based partly on personal observation but mainly on indirect argument from a small randomised trial of insulin treatment of non-diabetic "high-risk" patients for seven days after infarction (with small additional glucose and potassium supplements). We confined the study to patients with various clinical indicators of trouble (low blood pressure, left ventricular failure, various prognostically serious cardiac dysrhythmias, and/or initial blood glucose above 6.5 mmol/l (120 mg/100 ml)) because previously we have found intolerance ($K_G < 1.1$) to intravenous glucose on the seventh postinfarction day to be strongly correlated with a stormy clinical course.⁵

Fifty patients consented to take part in the trial out of 61 who qualified for entry, and happily only two of these died in hospital, one insulin-treated and one control (though the mortality for all 61 was not unusual at 12% (seven deaths)).

Some advantages of the addition of insulin (30 U daily in divided doses) to the usual coronary-care and ward regimens were a reduction in both clinically assessed left ventricular failure, which was present on the fourth day in five out of 23 patients on insulin and 13 out of 26 controls ($P < 0.05$ on χ^2 test), and in dysrhythmias either of supra-ventricular origin or due to a conduction defect (but not of ventricular dysrhythmias), which were present in five out of 24 patients on insulin and 13 out of 26 controls ($P < 0.05$). There was also a lowering in the insulin group of the plasma concentrations of both creatine phosphokinase ($P < 0.05$ at 23 hours) and of lactic dehydrogenase isoenzyme I ($P < 0.05$ from one to seven days after entry, though the values at four and 12 hours were the same in the two groups).

The Norris clinical index⁶ of prognosis did not differ significantly between the two groups, though the insulin-treated had a less advantageous, higher mean value. This was partly because they were

older (mean age ($\pm$ SD): insulin-treated 62 ± 7 years, controls 55 ± 5 years; t test, $P < 0.005$), but was still true even if age was excluded from calculation of the index.

The insulin-treated group showed lower, more "normal" values of blood acetoacetate and 3-hydroxybutyrate and of the glucose:insulin ratio. It was also much rarer to find low plasma insulin concentrations in these patients (for example, at 12 hours five out of 20 controls had insulin levels below 10 mU/l, while this was found in none of 23 on insulin).

Apart from any possible significance of the exact regimen followed, we believe this study had an advantage over previous trials⁷⁻⁸ in its ability to detect any favourable effect of insulin after cardiac infarction in that it did not include large numbers of patients in whom there was no reason to expect a deficiency of insulin, either absolute or relative to the high levels frequently found after infarction.

We gratefully acknowledge all the work by medical, nursing, and technical staff of the Radcliffe Infirmary (and especially of the coronary care unit) in the care of the patients whom the medical consultants kindly permitted us to study. We thank also Drs Siddiqui and Craig of Searle Diagnostic Ltd for help in the measurement of the serum enzyme concentrations.

T D R HOCKADAY
P S SAHNI

Radcliffe Infirmary,
Oxford

¹ Soler, N G, *et al*, *Lancet*, 1974, 1, 475.

² Garcia, M J, *et al*, *Diabetes*, 1974, 23, 105.

³ Kannel, W B, *et al*, *American Journal of Cardiology*, 1974, 34, 29.

⁴ Hamby, R I, *et al*, *Journal of the American Medical Association*, 1974, 229, 1749.

⁵ Sahni, P S, and Hockaday, T D R, *Clinical Science and Molecular Medicine*, 1975, 49, 20.

⁶ Norris, R M, *et al*, *Lancet*, 1969, 1, 274.

⁷ MRC Working Party, *Lancet*, 1968, 2, 1355.

⁸ Pentecost, B L, *et al*, *Lancet*, 1968, 1, 946.

Marking instrument for use in cryopreservation

SIR,—Effective labelling of patient samples should be a cardinal rule in all branches of medicine. In no area is this need greater than in the field of seminal preservation and banking when artificial insemination is being contemplated. A foolproof method of identification of freeze-storage samples is essential as immersion in substances such as liquid nitrogen may remove all but indelibly imprinted information. Therefore in the veterinary field, where freeze-storage of semen is carried out on an immense scale, effective methods to avoid mistakes are in existence, codes being printed on by machine before storage. In most units in Great Britain concerned with human sperm storage, however, the work load does not justify the expense of purchasing such machinery, yet responsibility for correct permanent labelling remains as great.

This problem has been overcome cheaply and efficiently at the Chelsea Hospital for Women by using a fine electric stylus to mark a selected code on the side of the plastic storage ampoule. The miniature stylus (Adamin Electric stylus; Light Soldering Developments Ltd, Croydon, Surrey) acts as a low-temperature soldering iron and by writing on a transfer tape (available in many colours) enables the code of choice to be etched on the ampoule. The method may also be applied to paillettes, although the surface area available is less and care has to be taken to ensure that the writing is beyond the sealed end, as the

heated tip can lead to weakness or perforation of the straw.

In our experience, despite immersion in liquid nitrogen for periods of over six months, no erasure of marking has been noted. The stylus is therefore recommended to all in the cryopreservation field as a cheap, efficient, effective, and adaptable method for marking specimens permanently.

We are grateful to the Royal College of Obstetricians and Gynaecologists for their grant to help in work associated with the use of the apparatus.

ROBERT F HARRISON
J STEDRONSKA

Seminology Laboratory
Institute of Obstetrics and Gynaecology,
Chelsea Hospital for Women,
London SW3

P EVANS

The London Hospital,
London E1

Early discharge after myocardial infarction

SIR,—The tentative tip-toeing towards a more liberal policy in treating patients after myocardial infarction is demonstrated further by Dr A D N Gelson and others (26 June, p 1555), who now feel brave enough to discharge most of such patients by the eighth hospital day.

I note, however, that their policy is still to instruct all patients to remain at home for one month. "A month after discharge they are encouraged to start taking short walks. Six weeks after discharge they are reviewed in the outpatient clinic."

How does this ultraconservative policy after discharge relate to their liberal policy during the hospital period? There seem to be no proved reasons for restricting patients after myocardial infarction to remain in their homes for one month. This undoubtedly delays rehabilitation, induces anxiety and depression, and delays return to work, noted as reasons for the early discharge. Why should these patients not be allowed out of their homes as soon as they feel like going out?

JOHN FRY

Beckenham, Kent

Legal procedures in cases of non-accidental injury to children

SIR,—I read with interest the article by Dr L J H Arthur and others on non-accidental injury (NAI) to children. Under the heading "Legal procedures," however, an impression is given which I feel should be corrected. Many members of the medical profession are often critical that social services departments do not take enough children before the juvenile court to secure a care order in NAI cases. This may be fair criticism in some instances, but the following points must be kept in mind.

Firstly, when a child has injuries which in medical opinion have been caused by non-accidental means, coupled perhaps with an admission on the part of the parent or an inadequate explanation, a case can often be proved. However, the majority of NAI cases are not so clear cut and fall within what is often referred to as the "grey area."

Secondly, both section 1 (2) (a) of the