go home, having no obvious sequelae. His liver function tests, electrolytes, and urea were repeated on the day of his discharge and all were normal.

Glibenclamide and its metabolites are more than 97% bonded by serum proteins. About 25% of radioactive glibenclamide is excreted in the faeces and the rest in the urine. In contrast to chlorpropamide, the hypoglycaemic reaction to glibenclamide is not protracted and is easily controlled by a reduction of the dosage. It is interesting to note phenformin has no hypoglycaemic action in normal people, but this is obviously not so in glibenclamide.

This patient's recovery appeared to be fairly rapid and without any immediate damage to kidneys or liver as judged by crude tests of liver function, electrolytes, and urea.

I should like to thank Dr. Donald Kinloch for advice and for permission to report this case and Dr. Norman Peters for advice.—I am, etc.,

P. KULLAVANIJAYA.

Chase Farm Hospital,
Enfield, Middx.

REFERENCE

1. Loubatières, A., Mariani, M. M., Ribes, G., de Malbos, H., and Chaptal, J., *Diabetologia*, 1969, 5, 1.

Myocardial Infarction and the G.P.

SIR,—One of us, a general practitioner, has felt increasing concern at the lack of specific treatment available on first attendance at a case of myocardial infarction. The use of anti-arrhythmic drugs is well established for inpatients and after hospital discharge, and there now seems a good case for their use *ab initio* by the general practitioner. A symposium attended by a group of eminent London cardiologists was recently held at this Centre, and there was unanimous agreement among them endorsing the value of both lignocaine and atropine as a "first-aid" treatment in selected cases. It was further agreed that the highest proportion of preventable deaths occurred in the first two hours and before admission to hospital.

A subsequent meeting was held here to discuss this matter in more detail, and the following programme of action was suggested for practitioners admitting cases to the coronary care unit:

(1) Injection of an appropriate analgesic—intravenously if pain is severe or the patient shocked. This can be morphine 10 mg. or diamorphine 5 mg. The latter acts more quickly, and is perhaps slightly less emetic. (Intravenous pentazocine 30 mg. has been advocated as less depressing to the blood pressure.¹) If hypotension develops, the patient should be kept flat, and the foot of the bed raised. This posture, if it can be tolerated, should be maintained during carriage into the ambulance and during the journey, but some patients in acute left ventricular failure may have to sit up.

(2) Bradycardia develops in about 10% of cases, and represents a threat of cardiac arrest. Intravenous atropine 0.4-0.6 mg. should be given if the pulse rate falls below 60. A total of 1.2 mg. may be used if necessary during the first three hours, and hypotension is no contraindication.

(3) It was felt that the use of intravenous lignocaine should be confined to those cases

in which ectopic beats occur with a frequency of six or more per minute. Such ectopics represent a greater danger of ventricular fibrillation if they form runs of two or more, or if an E.C.G. shows them to be ventricular ectopics falling on the preceding T waves.

The drug should be given slowly (over 1 to 2 minutes) either as 10 ml. of a 1% solution (100 mg.), or as 5 ml. of a 2% solution, in which form it has recently become available as a syringe pack. Care should be taken not to use the local anaesthetic preparation containing a small percentage of adrenalin. Once initiated, the dose should be repeated every 20 minutes, as it is rapidly broken down. Being a myocardial depressant, the blood pressure should be watched, but it is considered that the arrhythmia represents a greater threat than the hypotension. If the ambulance journey is likely to take longer than 20 minutes, 50 mg. should be given intravenously with an additional injection of 200 mg. intramuscularly. Lignocaine intramuscularly is more slowly absorbed and has been shown to produce effective blood concentrations for up to two hours.² Care should be taken to ensure that the larger injection does not enter a vein.

It would seem clear that these cases in which there is a disturbance of rate or rhythm are the ones most urgently in need of monitoring in a unit, and that the use of these drugs by the general practitioner can help to get them there safely.—We are, etc.,

L. C. BOUSFIELD.
J. N. MICKERSON.
J. D. WHITESIDE.

Chichester Postgraduate Medical Centre,
St. Richard's Hospital,
Chichester, Sussex.

REFERENCES

1. Scott and Orr, *Lancet*, 1969, 1, 1065.
2. Scott *et al.*, *Lancet*, 1968, 2, 1209.

Low-oestrogen Oral Contraceptives

SIR,—Dr. Ellen C. G. Grant's account (15 August, p. 402) of symptoms occurring in patients taking low-oestrogen oral contraceptives prompts us to write of our experience of a group of patients in our clinic.

Sixty patients who were taking part in a side-effects study of Ortho-Novin 2 mg. (norethisterone 2 mg. + mestranol 100 µg.) were changed to Ortho-Novin 1/50 (norethisterone 1 mg. + mestranol 50 µg.) following the warning by the Committee on Safety of Drugs on the dangers of highly oestrogenic oral contraceptives (25 April, p. 231). These women had taken the higher dosage for a total of 448 cycles and the following sequelae were noted after a total of 363 cycles on the low dose preparation. Almost half of the patients (29) noticed markedly reduced vaginal bleeding, of whom eight had complete pseudo-amenorrhoea. Slight break-through bleeding occurred in seven patients (11.7%), and premenstrual pain was experienced for the first time by four (6.7%). There were no cases of mood changes arising following the change to the lower dose preparation. Three women developed headaches while four noticed diminution of headache. In addition, two women had increased vaginal bleeding, and one developed jaundice of uncertain origin.

This pattern of side effects is quite different from that described by Dr. Grant, and is probably due to the fact that in our series the ratio of oestrogen to progestogen remained the same in the two preparations. Dr. Grant discusses five quite different low-oestrogen formulations, and, as she points out, side effects vary widely according to the relative progestogenicity of the oral contraceptive. We would, therefore, like to suggest that the effects noted in our study reflect more accurately an absolute reduction in the amount of steroid administered, whereas Dr. Grant's figures represent a variety of oestrogen/progestogen combinations.

Furthermore, the "symptom" of reduced vaginal bleeding is, on the whole, welcomed by patients; only when it amounts to complete absence of bleeding does it give cause for concern to both patient and prescriber. In this latter respect it is reassuring to note that of the eight pseudo-amenorrhoeic patients in our study four have resumed regular bleeding while continuing to take Ortho-Novin 1/50 and one further patient who had no withdrawal bleeding on Ortho-Novin 2 mg. resumed bleeding when changed to the lower dose preparation. There remain the symptoms of break-through bleeding and premenstrual pain; in neither case did any patient find that the side effects were sufficient to stop taking oral contraceptives.—We are, etc.,

S. M. WOOD.
J. A. McEWAN.

Family Planning Clinic,
Guy's Hospital,
London S.E.1.

Reaction to Iron Sorbitol Injection

SIR,—We agree with the suggestion of Dr. P. Karhunen and others (30 May, p. 521) that there is need for further study on the toxic effects of free iron in patients with malabsorption syndrome. Despite the reputed low incidence of anaphylactic reactions following total dose infusion therapy using high molecular weight iron-dextran (Imferon) we reported¹ a 59-year-old man with gluten sensitive steatorrhea who had a non-fatal anaphylactic reaction following 15 drops of an intravenous solution given over 90 sec. and containing 25 ml. iron dextran in 500 ml. of 5% dextrose and water. An E.C.G. done immediately before and within 10 minutes after the reaction did not show any arrhythmias.

Because of the small volume administered and the speed of onset of the reaction we do not feel that increased susceptibility to the toxic effects of iron was the cause. We feel that the likely explanation was on an allergic basis and that steatorrhea, like asthma and other allergic conditions, should be considered a contraindication to total dose infusion iron therapy.—We are, etc.,

M. SOOTS.
G. D. HART.

Department of Haematology,
Toronto East General Hospital,
Toronto 13, Ontario,
Canada.

REFERENCE

1. Hart, G. D., and Soots, M., *Applied Therapeutics*, 1969, 11, 645.