diseases. Also, in the light of past investigations, I agree that all patients on psychotropic drugs should be warned that their driving might be adversely affected by their drugs and that this effect can be aggravated by alcohol. If all medical practitioners give this warning and all patients heed it, we are going to find it even more difficult to carry out the randomised control trial that is so badly needed.

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¹ Clayton, A B, *Human Factors*, 1976, **18**, 241.

Benzodiazepines and traffic accidents

SIR,—Dr A Landauer (21 July, p 207) raises several points relating to the role played by diazepam in road traffic accidents.

All 1,4-benzodiazepines have been shown to possess sedative activity, which can severely impair the regulation and performance of the sensory-motor tasks undertaken by patients during the course of their everyday behaviour. It is not just impairment of car driving ability attributable to diazepam which should give rise to concern but the effect of 1,4-benzodiazepines in general on the performance of the psychomotor tasks associated with work, home, and leisure pursuits.

Laboratory assessments of performance do relate to the real life situation if appropriate measures are used. Reaction time to visual stimuli has been shown¹ to be an appropriate analogue of real life performance where co-ordination of eye, hand, and brain is an important feature. The 1,4-benzodiazepine derivatives in general have been found to reduce the critical flicker fusion threshold, giving objective credence to the often-reported subjective drowsiness experienced by patients taking such drugs. We have been able to show consistent depression of critical flicker fusion thresholds and impairment of reaction time tasks following both acute and chronic administration of a range of 1,4-benzodiazepine derivatives.²⁻⁴

Laboratory information has been augmented by concurrently obtained data from tests of car driving ability administered independently by Advanced Driving Institutes. The impairment of performance shown in the laboratory tests following the administration of a 1,4-derivative, lorazepam, has been mirrored in the reduced performance on actual car driving tests of brake reaction, steering, width estimation, parking, and garaging undertaken by the same subjects in a placebo-controlled study.

Such findings lead us to believe⁵ that the administration of 1,4-benzodiazepines, not just diazepam, produces an increased risk of accident in situations where the integrity of the sensory and motor systems is an essential prerequisite for the safe performance of the task. The pathologically anxious or insomniac patient might be a better performer following treatment with a benzodiazepine but a consideration of the vast number of these derivatives prescribed would suggest that many non-pathological individuals are receiving these drugs and suffering performance decrements.

Others have concluded⁶ that the administration of a benzodiazepine derivative does not necessarily cause a death or road traffic

accident. However, this is missing the salient point of the recently published epidemiological survey by Dr D C G Skegg and others (7 April, p 917), which is that there is sufficient cause for concern that the administration of a 1,4-benzodiazepine derivative increases the risk of accident in any situation where safety is dependent on unimpaired psychomotor performance.

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¹ Linnoila, M, and Mattila, M J, *Pharmacopsychiatry*, 1973, **6**, 128.

² Hindmarch, I, *Arzneimittel-Forschung*, 1975, **25**, 1836.

³ Hindmarch, I, *Arzneimittel-Forschung*, 1976, **26**, 2113.

⁴ Hindmarch, I, *British Journal of Clinical Pharmacology*, 1979, **7**, suppl p 77.

⁵ Snaith, R P, *et al*, *British Medical Journal*, 1977, **2**, 263.

⁶ Finkle, B S, *Journal of the American Medical Association*, 1979, **242**, 429.

Rupture of the uterus during prostaglandin-induced abortion

SIR,—We read with interest the letter by Mr A I Traub and Mr J W K Ritchie (25 August, p 496), in which they quite rightly point out the hazards of combining oxytocin with prostaglandin in the induction of a mid-trimester abortion; and we agree with their advice to delay the infusion of intravenous oxytocin. We think that it should be stressed, however, that the patient whom we reported (7 July, p 51) ruptured her uterus following the insertion of intra-amniotic prostaglandin and hypertonic saline. At no stage was oxytocin used.

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Induction of labour

SIR,—Following the article by Mr J H Shepherd and others (14 July, p 108) advocating the use of prostaglandin pessaries for induction of labour, we would like to illustrate the points raised in the letters of Mr A W Banks and Mr C J Hutchins (4 August, p 332) with two case histories and comment on our experience of the use of prostaglandin E₂ pessaries in a busy district general hospital.

The first case illustrates the dangers of unexpected delivery of an at-risk fetus in an inappropriate environment. A 24-year-old secundigravida (gestation confirmed by ultrasound scan at 17 weeks) was noted to be clinically small for dates from 27 weeks and so was monitored with plasma oestriols, serial ultrasound, and cardiotocography

(CTG). These were normal, but she developed mild pregnancy hypertension with proteinuria at 39 weeks. It was decided to induce labour, but as the Bishop score of the cervix was only 3, a 2-mg Prostin pessary was administered at 1300. She complained of irregular contractions soon after, and a CTG showed frequent but apparently small contractions. She did not require analgesia. She was judged not to be in labour, and monitoring was discontinued. At 1830 she developed the desire to bear down, and unexpectedly delivered on the antenatal ward. The baby weighed 2080 g but was fortunately in excellent condition, and needed no resuscitation.

The second case illustrates the real need for continuous CTG monitoring after use of prostaglandin pessaries in any at-risk pregnancy. A 27-year-old primigravida was clinically small for dates from 34 weeks. Plasma oestriol and human placental lactogen levels were always low, and from 37 weeks fell to below the 10th percentile. Antenatal CTG was normal, but because of the placental function tests, it was decided to induce labour at term. The Bishop score of the cervix was only 4, so a 2 mg prostaglandin pessary was inserted at 1120. Continuous CTG monitoring was performed (see figure). Because of large variable decelerations, which appeared over the next one-and-a-half hours despite keeping the patient on her left side, abnormal uterine action, and a cervix still only 3 cm dilated, it was decided to perform a caesarean section. A 3080-g infant was delivered in good condition.

We feel there are limitations to the use of prostaglandin pessaries for the routine induction of labour in a busy unit because: (a) the onset of labour cannot be predicted accurately; (b) patients may need cardiotocography for an indeterminate length of time; (c) when the cervix is favourable prostaglandins do not have any definite advantages over the tried and "midwife trusted" methods of amniotomy and oxytocin infusion; (d) they are expensive; (e) the potential advantage of mobility is frustrated by the need to monitor the patient and provide analgesia.

Prostaglandins do, however, have a valuable role in ripening the cervix and rendering it more favourable for induction by amniotomy and oxytocin infusion.

We are grateful to Messrs D Fairbairn and D P L May for permission to report on patients under their care.

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SIR,—I was pleased to see your leading article (18 August, p 407) stating that interest in methods of induction of labour is passing increasingly to non-invasive techniques which are more comfortable for the patients, as this statement is undoubtedly true. The simplest of these techniques is the intravaginal appli-

Cardiotocographic tracing in case 2.

cation of prostaglandin E_2 in various vehicles. Our own work involving over 500 patients who had a single insertion of 4 mg or 5 mg of PGE_2 tablets (Prostin, Upjohn Limited) vaginally showed that about 70% of patients went into labour without any other intervention.¹ These results, like those reported recently by Mr J H Shepherd and others (14 July, p 108), are not ideal and can be improved on by seeking the optimum dose regimen, as well as the best vehicle for release of PGE_2 from the many available.

Until these points are established it is too soon to claim that we have the best alternative to intravenous oxytocin.

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¹ Gordon-Wright, A P, and Elder, M G, *British Journal of Obstetrics and Gynaecology*, 1979, **86**, 32.

Hemiparesis after single minibolus of labetalol for hypertensive encephalopathy

SIR,—Your leading article of 28 July (p 228) suggested that a graded 50-mg minibolus or controlled infusion of labetalol may overcome some of the problems of rapid reduction of arterial pressure in malignant hypertension. We would like to report on a patient who developed left hemiparesis after a single minibolus of labetalol.

A 48-year-old West Indian negro housewife presented with a six-month history of intermittent headache, nausea, and blurring of vision, and described two episodes within the previous three hours suggesting grand mal attacks. A grand mal attack occurred 10 minutes after her arrival in the casualty department. She had a 14-year history of hypertension but was taking no regular medication. She did not smoke. There was no family or past history of epilepsy. She had a sinus tachycardia of 115 beats/min, blood pressure of 250/150 mm Hg, and clinical and electrocardiographic features of left ventricular hypertrophy. X-ray showed cardiomegaly. Fundoscopy demonstrated grade II hypertensive retinopathy. Ward testing revealed heavy proteinuria.

After her grand mal attack she received a minibolus of 35 mg of labetalol over two to three minutes. Two minutes later her blood pressure was 160/95 mm Hg. It remained at this level for three minutes and then rose over the next five minutes to 180/110 mm Hg, with a pulse rate of 90 beats/min, at which level it was maintained with oral therapy of atenolol 100 mg a day and hydralazine 25 mg twice daily. The next day she was drowsy and slightly confused and 36 hours after admission developed left hemiparesis with sensory inattention. Paresis of the left arm has persisted. Her renal function was normal and the proteinuria diminished. Computerised axial tomography revealed a low-density area in the right parietal region suggesting an ischaemic lesion.

Such a marked fall in arterial pressure after the administration of a small dose of labetalol has not been documented before. Cerebral complications have been noted previously,^{1,2} after reductions in arterial pressure of this magnitude. The data sheet for labetalol recommends a 50-mg bolus given over more than one minute, followed by repeated doses at five-minute intervals to a maximum of 200 mg. Alternatively an infusion at 2 mg/min may be given. A fall in blood pressure from 188/143 mm Hg to 90/64 mm Hg after 100 mg of labetalol was noted by Brown *et al*,³ and the same authors recommend graded intravenous infusions with continuous monitoring

of arterial pressure in hypertensive encephalopathy.⁴

This case supports slow infusion as the treatment of choice and indicates that there is no longer any place for the 50-mg minibolus in the treatment of hypertensive encephalopathy.

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¹ Love, D H, *et al*, *British Medical Journal*, 1979, **2**, 245.

² Ledingham, J G G, and Rajagopalan, B, *Quarterly Journal of Medicine*, 1979, **48**, New Series, 25.

³ Rosei, E A, *et al*, *Clinical Science and Molecular Medicine*, 1976, **51**, suppl p 49.

⁴ Brown, J J, *et al*, *Lancet*, 1977, **1**, 1147.

Mefenamic acid poisoning and epilepsy

SIR,—A 19-year-old woman took a well-substantiated overdose of 12.5 g mefenamic acid (50 250 mg Ponstan tablets) three to four hours prior to admission. (These tablets had been prescribed for headache by her GP on the morning of the day of admission and the bottle was later found by relatives to be empty—no other drugs were prescribed or found.) She was found approximately three hours after ingestion in status epilepticus, when it was not appreciated that self-poisoning had occurred. On arrival at the casualty department there were features of a generalised seizure, notably tonic-clonic movements of all four limbs, bilateral extensor plantar responses, lack of response to painful stimuli, and urinary incontinence. Paraldehyde 10 ml was administered intramuscularly by the casualty officer and the convulsive features rapidly subsided. Following transfer to the medical unit there was drowsiness but no neurological deficit. A drug screen was negative for salicylates and barbiturates. The laboratory was certain that an abnormal substance was present in the plasma but could not identify its nature. There were no further seizures and she subsequently admitted the above overdose. This patient had been previously well and there was no family history of epilepsy. The psychiatric diagnosis was personality disorder. An ECG three weeks later was normal.

There is little documented evidence that mefenamic acid poisoning may cause epileptic seizures. In one text the possibility of convulsions following massive overdosage is suggested,¹ but sources are not quoted. Current reports by Committee on Safety of Medicines mention only single episodes of generalised spasm and muscle twitching.

We would submit that there is good evidence from this case of a direct association between mefenamic acid poisoning and a generalised seizure. The possibility that such poisoning may be responsible for a previously fit patient presenting in status epilepticus should be borne in mind.

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¹ Cooper, P, *Poisoning by Drugs and Chemicals*, 3rd edn. London, Alchemist Publications, 1974.

What is to be done with the XYY fetus?

SIR,—With reference to Dr Simon Wilkinson's letter (14 July, p 131) concerning the control group used in our XYY study¹ we should like to bring the following points to your notice.

The induction rate in the control group was

45.6%, in the XYYs 50%, and in the hospital population from which both groups were drawn 42.6%; none of these figures differ significantly from each other. Hence there are no grounds for claiming that the controls were privileged in this respect. In line with changing obstetric policy, the present induction rate at these hospitals is around 28%.

No claim was made that the controls were representative of the general population. In our paper it was clearly stated that the hospital population from which both our controls and the XYYs were drawn differed significantly from the population of Scotland as a whole in that it contained a higher proportion of social classes I and II. However, the controls and cases matched closely in this respect and therefore the difference in mean IQ (98.4, SD ± 11.0, compared with 115.7, SD ± 16) indicated a small but significant reduction in the XYY child. Furthermore, comparisons in the three twin pairs were in each case adverse to the XYY twin, the differences being 23, 19, and 13 points. These results support the findings of the only other study of young XYY individuals ascertained outside institutions, where Army selection tests gave significantly lower scores for the XYY men.²

We wish to point out that we do not consider the small reduction of IQ to be grounds for selective abortion. As our longitudinal study has covered only the first 12 years of any child's life it would be premature to make any pronouncement on the rate of social deviance.

A full report of the obstetric and environmental background to the whole study will be published in the near future and will describe in more detail the numerous variables relevant to any analysis of human development.

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¹ Ratcliffe, S G, Axworthy, D, and Ginsburg, A, in *Birth Defects: Original Article Series*, vol 15, No 1, ed A Robinson, H A Lubs, and D Bergsma, p 243. New York, Alan R Liss Inc, 1979.

² Witkin, H A, *et al*, *Science*, 1976, **191**, 547.

Diverticular disease in urban Kenyans

SIR,—The Reverend H C Trowell and Mr Denis Burkitt in their letter (30 June, p 1795) on Dr John F Calder's article (2 June, p 1465) cite our paper on diverticular disease¹ as further evidence of the influence of diet on the emergence of diverticular disease in the urban African. They quote correctly that "60% of these Ghanaian patients belonged to the higher social classes"; the point of the article is lost, however, when the sentence in question is not completed—that is, "but all had lived on traditional African high residual food." The impression is thereby created that our patients may have been on Western-type diets.

It is particularly important to appreciate that in developing countries, and particularly among Africans, urbanisation is seldom accompanied by significant alterations in dietary habits. This principle has not been accorded its due place in the global diet-disease discourse.

Our data may be interpreted as suggesting that adoption of "Western habits" (60% had been in high public positions of trust)