characterisation, by use of tryptamine and benzamide derivates, of the putative 5-HT$_1$ receptor mediating tachycardia in the pig. *Br J Pharmacol* 1991;**102**:107-12.
6 Kaumann AJ, Sanders L, Brown AM, Murray KK, Brown MJ. A 5-HT$_1$-like receptor in human right atrium. *Naunyn Schmiedebergs Arch Pharmacol* 1991;**344**:150-9.

Thoracoscopic pericardiectomy

EDITOR,—In their editorial on the management of malignant pericardial effusions David Keane and Graham Jackson quote a 30 day mortality of up to 60% for open surgery in cases of malignant pericardial disease.[1] They then present the case for percutaneous balloon pericardiotomy as a non-surgical alternative. There is, however, an important alternative surgical option—namely, thoracoscopic pericardial window. Minimal access thoracic surgery done with videothoracoscopy and endoscopic instruments allows thoracic surgical procedures to be performed without the morbidity and mortality associated with thoracotomy.[2]

The patient is positioned as for a standard thoracotomy in the lateral position. Under general anaesthesia one 1 cm and two 0·5 cm incisions are made in the left sixth intercostal space. A thoracoscope with attached video camera is introduced through one of these, and endoshears and forceps are passed through the others. Under one lung anaesthesia the lung collapses and falls posteriorly to give an excellent view of the mediastinum. To relieve tamponade a pericardial window of suitable size and shape is cut, avoiding the phrenic nerve. Pericardial fluid is aspirated from the thorax, and an intercostal drain is inserted through the larger incision.

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1 Keane D, Jackson G. Managing recurrent malignant pericardial effusion. *BMJ* 1992;**305**:729-30. (26 September.)
2 Donnelly RJ, Page RD, Cowen ME. Endoscopy assisted microthoracotomy: initial experience. *Thorax* 1993;**47**:490-3.

Measuring glycated haemoglobin

EDITOR,—Douglas A Robertson and colleagues report three cases in which haemoglobin F resulted in certain assays giving falsely high haemoglobin A_1 concentrations.[1] We recently changed from using affinity chromatography to using an in house high pressure liquid chromatography method, with an ion exchange packing material, because results from the affinity chromatography method had become unreliable. With high pressure liquid chromatography various types of haemoglobin are seen as separate peaks in a chromatogram; this technique allows haemoglobin F and other variants to be identified and measured easily.

We have analysed more than 5000 samples in nine months and have found 16 patients with haemoglobin variants. All have been heterozygous and none had been suspected to be. Two had haemoglobin F, both in much higher concentrations (26% and 22%) than those reported by Robertson and colleagues. One had haemoglobin E. Seven had haemoglobin D, a common Punjabi variant, which reflects Coventry's large Punjabi population. We believe that the five with sickle cell trait were of West Indian origin. Intriguingly, haemoglobin J was found in an Irishman; this is a rare Spanish variant.

Conventional charge dependent methods of measuring haemoglobin A_1, in which haemoglobin fractions are eluted from a column and measured colorimetrically, do not separate haemoglobin F from haemoglobin A_1 and thus overestimate it.[2] Conversely, falsely low values for haemoglobin A_1 are obtained when abnormal haemoglobins such as S, C, D, G, and E are present.[3,4] These variants are not separated from haemoglobin A by these methods, which therefore underestimate the haemoglobin A_1:haemoglobin A ratio, although Torke *et al* suggested that a correction can be made if the percentage of the variant haemoglobin is known.[4]

Having changed to high pressure liquid chromatography we can now detect haemoglobin variants easily and report the haemoglobin A_1 concentration without the previous errors. We are now finding cases of sickle cell trait during routine management of diabetic patients, which could necessitate genetic counselling.

We note, incidentally, that in case 2 Robertson and colleagues do not mention the haemoglobin F concentration. We wonder whether it was measured in this case and, if so, whether the value was comparable with that in the other cases.

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1 Robertson DA, Tunbridge FKE, John WG, Home PD, Alberti KGMM. Diagnostic confusion in diabetes with persistence of fetal haemoglobin. *BMJ* 1992;**305**:635-7. (12 September.)
2 Paisey RB, Read R, Palmer R, Hartog M. Persistent fetal haemoglobin and falsely high glycosylated haemoglobin levels. *BMJ* 1984;**289**:279-80.
3 Eberentz-Lhomme C, Ducrocq R, Intrator S, Elion J, Nunez E, Assan R. Haemoglobinopathies: a pitfall in the assessment of glycosylated haemoglobin by ion-exchange chromatography. *Diabetologia* 1984;**27**:596-8.
4 Torke NS, Mehta PS, Vohra RM, Patel AR, Shah PC. Comparative analysis of glycosylated hemoglobins by ion-exchange column chromatography in patients with hemoglobinopathies. *Am J Clin Pathol* 1988;**90**:697-701.

EDITOR,—D A Robertson and colleagues point out that some widely used methods of measuring glycated haemoglobin that are charge dependent give erroneously high values for glycated haemoglobin because they include haemoglobin F.[1] But some instruments based on charge dependent separation using high pressure liquid chromatography give haemoglobin A_1 or haemoglobin A_{1c} results with minimal interference from haemoglobin F.[2] Moreover, one such analyser, the Diamat (Bio-Rad Laboratories, Hemel Hempstead), is suitable for measurement of haemoglobin F.[3]

The authors mention the increased prevalence of slightly raised haemoglobin F concentrations in diabetic children.[4] Our observations made with a Diamat analyser confirm that these raised concentrations also occur with increased frequency in adolescent and young adult diabetic patients. Of 561 consecutive specimens from patients aged 11-25, 210 (37·4%) had haemoglobin F concentrations above the often quoted upper limit of normal of 0·5%, and 46 of these concentrations were above 1·0%. This frequency was significantly greater (χ^2 test, $p < 0·001$) than that observed in 44 control specimens taken from the non-diabetic hospital population and blood donors in the same age range, of which four (9%) had values above 0·5%, the highest being 0·8%. The increase was seen in both sexes but occurred significantly more commonly in female than male diabetic patients (χ^2 test, $p < 0·01$). In the 280 specimens from female patients the 26 values above 1·0% were from 18 patients, in 14 of whom pregnancy was excluded as a cause.

Misinterpretation may also occur during long term monitoring of high risk groups such as patients with cystic fibrosis. Where the method includes haemoglobin F its proportion is not known and the extent to which it may change over the years cannot be predicted. These estimations are frequently performed on very young children. In a series of eight children aged 3 years or under with cystic fibrosis five had haemoglobin F concentrations in the range 1·0-2·9%.

For these reasons and those described by Robertson and colleagues we would discourage people from using methods of measuring glycated haemoglobin that include haemoglobin F. Of the non-charge dependent methods that the authors suggest, however, thiobarbituric acid and affinity chromatography methods are not readily suited to large numbers of samples and enzyme immunoassay can grossly underestimate glycated haemoglobin in patients with structural haemoglobin variants.[2]

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1 Robertson DA, Tunbridge FKE, John WG, Home PD, Alberti KGMM. Diagnostic confusion in diabetes with persistence of fetal haemoglobin. *BMJ* 1992;**305**:635-7. (12 September.)
2 Standing SJ, Taylor RP. Glycated haemoglobin: an assessment of high capacity liquid chromatographic and immunoassay methods. *Ann Clin Biochem* 1992;**29**:494-505.
3 Brenna S, Prencipe L, Granata S, Montalbetti N. Assessment of an automatic liquid chromatograph for foetal and abnormal haemoglobins. *J Clin Chem Clin Biochem* 1987;**25**:437-40.
4 Mullis P, Schuler J, Zuppinger K. Increased prevalence of fetal haemoglobin in type 1 (insulin-dependent) diabetes mellitus. *Diabetologia* 1989;**32**:227-30.

Early analgesia for acute abdominal pain

EDITOR,—Zachary Cope's warning of the dangers of giving morphine before making a diagnosis was justifiable in 1921, when a dose of 30 mg was not unusual, but it has been heeded for too long, and the trial of Alex R Attard and colleagues (using a maximum dose of 12·5 mg morphine) is very welcome.[1]

It is interesting that no inappropriate operations were performed among the 50 patients receiving papaveretum but six were performed among the 50 who received saline. It seems that some patients when first seen by the registrar, one hour after injection, were doubtful and were observed, because 10 in the papaveretum group and six in the saline group left hospital with a diagnosis of non-specific abdominal pain and had not been subjected to operation. However, six patients in the saline group must have seemed on first examination to have disease requiring surgery because a laparotomy was needed to eliminate this possibility.

Experience with the acute abdomen in infancy may be helpful here. In a frightened, uncomfortable 2 year old it can be impossible to elicit reliable abdominal signs because of struggling and crying; it is then necessary to sedate the child, most readily with rectal diazepam.[2] After an hour the child is usually asleep and if a warm hand is slipped under the bedclothes a good examination of the abdomen can be made without awakening the infant. Here one is seeking the objective signs of muscle guarding, a mass, or, if the appendix is far from the anterior parietal peritoneum, deep tenderness which causes the child to stir. These signs do not rely on the subjective sensations of the patient.

Most patients with non-specific abdominal pain show tenderness in the right iliac fossa, but guarding is unusual.[3] One of the hidden advantages of early analgesia may be that it enables the patient to relax; it is then easier to recognise that, though there is local tenderness, there is a significant absence of guarding. It is then logical to await developments, make recordings every half hour, and re-examine the patient in two to three hours rather than proceed immediately to operation.

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1 Attard AR, Corlett MJ, Kidner NJ, Leslie AP, Fraser IA. Safety

of early pain relief for acute abdominal pain. *BMJ* 1992;**305**: 554-6. (1 September.)
2 Jones PF. *Emergency abdominal surgery*. 2nd ed. Oxford: Blackwell Scientific, 1987.
3 Jones PF. Active observation in management of acute abdominal pain in childhood. *BMJ* 1976;ii:551-3.

Specialist training

EDITOR,—The evidence to be put forward by Dr Edwin Borman and the Junior Doctors Committee to the chief medical officer's working group on specialist training[1] does not reflect the true views of junior hospital doctors in training in Britain. At a recent mess meeting at the Royal Liverpool Children's Hospital, Alder Hey, there was overwhelming support for retention of the consultant grade as it now stands. There was widespread concern that a specialist grade would lead to 10-15 years as a senior resident doctor.

What exactly is Dr Borman and colleagues' mandate in representing the views of junior hospital doctors throughout the country? I question whether they have a true mandate and call on the Junior Doctors Committee to hold a referendum.

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EDITOR,—The chief medical officer's working party on specialist training, certification, and manpower may herald fundamental changes in the way doctors work and train in Britain.[1] At present two parallel forms of specialist registration exist in Britain: doctors may gain accreditation from their medical college and be labelled (T) in the medical register, or they may complete a shorter period of postgraduate training that meets minimum European standards. Under European Community rules no doctor who is registered as a European specialist can be barred from appointment at consultant grade. The government, colleges, and medical profession must therefore decide how to integrate the two systems.

There is a strong suspicion that European accreditation is being used as a first step to deregulate the medical profession. The Adam Smith Institute and the National Association of Health Authorities and Trusts have used the current review of accreditation to call for abolition of the existing consultant contract. The Adam Smith Institute, citing leaked documents from the Junior Doctors Committee in support of its case, envisages 24 hour community clinics staffed by teams of specialists and general practitioners; this would threaten general practitioners' role of gatekeeper to specialist care.[2] If the issue concerned only compliance with European Community law this could be simply achieved by dropping the (T) label in the medical register.[3]

The profession has to be careful that the changes currently suggested by prominent members of the Junior Doctors Committee do not result in doctors sacrificing the long term quality of their careers for short term advantages in becoming specialists more quickly. Suggestions include the creation of a new specialist grade, the health service consultant. This would encompass current senior registrars, associate specialists, post-membership registrars, and possibly some staff grade doctors. Eventually, many existing consultants might become health service consultants if trusts put them on short term contracts with altered terms and conditions. These doctors would become the new workhorses of the NHS; in addition to the responsibilities of existing consultants they would assume a much greater on call commitment, including, possibly, being resident in hospital at night until retirement.

Whatever the changes in training, the responsibilities, remuneration, and rewards of the existing consultant contract must be retained by the future European accredited specialist. It is essential that any submission to the chief medical officer's working party is agreed by the whole medical profession.

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1 Beecham L. Junior doctors and specialist medicine. *BMJ* 1992;**305**:836. (3 October.)
2 Gladstone D. *Opening up the medical monopoly*. London: Adam Smith Institute, 1992.
3 Brearley S. Specialist medical training and the European Community. *BMJ* 1992;**305**:661-2. (19 September.)

EDITOR,—All trainees will be dismayed by the suggestion by the National Association of Health Authorities and Trusts that after eight years in training doctors should spend 10-15 years in a subconsultant (or specialist) grade before becoming senior specialists.[1] The association proposes this as a means of "dealing with the log jam in the ratio of registrars to consultants."

By inserting yet another grade it will succeed only in increasing the log jam between junior doctors and senior specialists. Numbers will see to it that few specialists ever reach senior specialist status. In effect, the association will have created a large pool of "stuck" specialists driven to mediocrity by the knowledge that senior specialist status is both unlikely and 15 years away and that, while they cannot realistically hope for better, they are at least secure in their second class specialist post.

The only solution is expansion of the consultant grade, a concept to which the government has repeatedly committed itself and which was reinforced by Mrs Virginia Bottomley at the annual general meeting of the Association of Surgeons in Training last year. In general surgery, for example, this would be achieved by an increase from one consultant per 50 000 population to one per 30 000, a ratio that has been shown to be realistic[2] (and that already exists in Northern Ireland and Scotland) and is supported by the Association of Surgeons of Great Britain and Ireland.

These posts could be filled from the ranks of current senior registrars, thus unscrambling the log jam and allowing training schemes lasting about eight years to be established. These schemes have been backed by the Royal College of Surgeons.[3] Shorter training schemes have the advantage of being more flexible with respect to numbers of trainees, so that they can be tailored to respond to anticipated annual demands for consultants. To ensure that the schemes remain in balance each trainee must be numbered so that a new trainee is recruited only when a senior trainee has been promoted into a consultant post, thus relinquishing his or her number.

The need for consultant expansion is greater than ever because changes in junior doctors' hours will mean that a shift is needed away from a consultant led service to a consultant based one. This can be achieved only with increased numbers, while the implementation of the solution proposed by the National Association of Health Authorities and Trusts would inevitably lead to a deterioration in standards of care.

Trainees will support Stephen Brearley's comment that "the well organised and regulated system of specialist training that exists in Britain is an asset worth retaining."[4] The National Association of Health Authorities and Trusts seems to have a hidden agenda aimed at abolishing the consultant grade. It needs to state clearly why it wishes to abolish a system that works well and in which almost all consultants work far longer than their contracted hours in the NHS.

The government has given the royal colleges the responsibility of training doctors. All trainees should question the credentials of the health service managers in the National Association of Health Authorities and Trusts to advise on the training of the profession. Trainees should strongly advise the government not to allow the association the autonomy to implement staffing structures that would impede training reforms devised by the royal colleges.

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1 Dillner L. NAHAT urges rethink on medical training. *BMJ* 1992;**305**:735. (26 September.)
2 Collins C. Providing the ideal surgical service. *Ann R Coll Surg* 1992;**74**:126-9.
3 Browse N. Setting the agenda. *Ann R Coll Surg* 1992;**74**:121-5.
4 Brearley S. Specialist medical training and the European Community. *BMJ* 1992;**305**:661-2. (19 September.)

EDITOR,—I am a "hybrid" doctor: a graduate of a Greek medical school, trained in both Greece and Britain, with a British degree (the MRCP) that has no value on the Continent and a European degree (the certificate in specialist training in internal medicine, from Greece) that has only nominal value in Britain. I have followed the continuing debate about Euro-specialists and consultants and wish to offer some thoughts on the subject.[1]

One main problem is the confusion between specialist and consultant. In my view a specialist is a qualified doctor who has completed a prescribed period of specialist training (for example, five years in internal medicine) on a well regulated rotation and has passed a final examination in the specialty. A consultant is a specialist who has worked as such for several years and therefore has experience in the specialty along with leadership, teaching, and managing qualities enabling him or her to act as an independent chief of a medical firm. Thus Greek law demands that applicants for "chief" posts have at least seven years' specialist experience, while for the hospital grade equivalent to senior registrar the applicant must have spent at least four years in the specialty.

For British hospital medicine, which is consultant oriented, this distinction, which would not clash with European Community directives, would help eliminate the problems of movement of doctors within the community. Thus a specialist from a country in the community could be appointed in a non-consultant capacity in Britain or, if he or she had the necessary experience (as judged by an appropriate body such as a royal college), as a consultant. Thus accreditation for the consultant grade would mean fulfilment of a specified minimum time in the specialty. There is no law against that. Specialists certified in the United Kingdom could pursue a medical career on the Continent, as hospital based or private practitioners, armed with knowledge and qualifications comparable with those of their European counterparts, though they might not be given the status of a consultant even if they had had it before. In such a system trainees might participate in exchange programmes in the European Community during their training years, thus broadening their horizons and acquiring additional experience.

Inevitably this would mean some change to the structure of the trainee and career grades. A simple system would call all postregistration trainees senior house officers. The grades of registrar and senior registrar would become career posts, and promotion to the next grade would depend on years in the specialty and additional experience gained. Those undetermined about which specialty to work in could spend time in other specialties, but this would not count in their statutory years.

It would be naive to assume that these changes