HIV testing: changing trends

SIR,—Dr E J Beck and colleagues (18 July, p 191) drew attention to steep increases in the number of requests from patients in London for tests for antibody to the human immunodeficiency virus (HIV) in October and November 1986 and March 1987, which coincided with the publicity campaigns associated with the government's educational programme about the acquired immune deficiency syndrome (AIDS).

In Liverpool a similar trend was observed at the Public Health Laboratory, where these tests are performed on specimens submitted mainly from clinics for sexually transmitted diseases but also from hospital departments, drug dependency clinics, and general practitioners. The table shows the numbers of specimens for this test received monthly in the laboratory between May 1986 and June 1987, together with the number that were positive for antibody to HIV and the number of these that were from new patients. Sharp increases occurred in Liverpool at about the same time as in London, and, although, as in London, there was a pronounced fall in numbers from the peak in March 1987, the level maintained since then is much higher than that in the corresponding period in 1986. Though the proportion of patients who were found to be positive was much lower in Liverpool than in London, we also found that as the number of tests increased so the proportion that yielded positive results tended to decrease.

Number of specimens for tests for antibody to HIV received monthly at Liverpool Public Health Laboratory May 1986 to June 1987

Month	No of specimens received	No positive for antibody to HIV	No positive from new patients
1986:			
May	106	4	4
June	127	4	1
July	94	1	0
August	95	5	4
September	120	4	1
October	157	3	2
November	334	9	7
December	438	9	5
1987:			
January	347	7	5
February	582	5	3
March	971	6	4
April	395	8	5
May	379	4	2
June	336	8	3

These statistics are important in relation to the organisation of laboratory services for what seems certain to continue as a large part of the workload of Public Health Laboratory Service and other medical microbiology laboratories. Apart from increases in numbers of specimens received, the pattern of tests will probably become increasingly complex with the need to test for evidence of infection with retroviruses other than HIV-1, for antigen in addition to antibody, and for different antibodies that may have prognostic importance and to monitor patients receiving treatment with antiviral agents. Work of this kind must be done by those experienced in diagnostic microbiology, familiar not only with the specialised techniques and strict safety requirements but also with arrangements for dealing in confidence with inquiries about investigations and results and ensuring that reports are sent only to the doctors who have requested the tests. In the case of positive results, our practice is for medical staff of the laboratory to telephone the doctor concerned to discuss the problem and arrange, if possible, for a repeat specimen to be submitted for confirmation as soon as possible.

This work is being done in laboratories already committed to performing a wide range of microbiological investigations of other illnesses and outbreaks of infections for hospitals, general practitioners, and environmental health departments. Consultant microbiologists in charge of these laboratories have to make difficult decisions about the transfer of experienced staff from other duties to work on AIDS when, for reasons of economy, the work on other problems has already been reduced to that which is essential. This state of affairs clearly needs to be taken into account by those responsible for the planning of laboratory services.

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Penetrating cardiac injuries

SIR,—In South Africa, as in the United Kingdom (except Ulster),¹ penetrating cardiac injuries are usually the result of stab wounds, unlike in America, where they are increasingly the result of gunshot wounds.² Penetrating cardiac injuries are not uncommon in South Africa, and we believe that the South African experience is relevant to the United Kingdom if, as Dr D P Taggart and Mr I J Reece suggest (27 June, p 1630), the incidence of such injuries is increasing.

We agree that acute cardiac tamponade after a stab wound is often due to an associated penetrating cardiac injury, but the corollary is that the bleeding may come from extracardiac sources. Furthermore, the presence of a stab wound in the cardiac shadow is often associated with a penetrating cardiac injury, but stab wounds anywhere in the neck and trunk may give rise to cardiac injury.

We have just concluded a postmortem and clinical study of penetrating cardiac injuries occurring in Cape Town over 15 months in 1985 and 1986. Around 1.5 million people live in this area. There were 639 deaths caused by penetrating wounds during this period, of which 304 were attributed to cardiac tamponade, the victim in each case failing to reach hospital alive. Penetrating cardiac injuries were found to be the cause of death in only 232 cases, and thus 72 cases of cardiac tamponade were caused by extracardiac sources of bleeding, mostly stab wounds of the ascending aorta (48) and pulmonary artery (17).

During the same period 38 patients were seen at the Groote Schuur Hospital with acute cardiac tamponade due to stab wounds, of which four cases were caused by bleeding from other sources, three from pulmonary veins and one as a result of a stab wound traversing the diaphragm and lacerating both the liver and pericardium. Another patient presented with the physical signs of cardiac tamponade, but these were found to be due to a large mediastinal haematoma from a severed internal mammary artery producing direct pressure on the heart.

In the postmortem study a total of 507 wounds to the chest resulted in 240 heart wounds. Of these, 33% were within the cardiac shadow but 23% were to the posterior chest wall. In the 38 patients 60 stab wounds were found, of which 50 were to the chest. In all, 45% were within the cardiac shadow and only 6.6% to the posterior chest. The apparently greater lethal outcome of posterior chest wounds was considered to be due to their association with injuries to the thoracic aorta.

Five of the patients presented "apparently dead," all of whom underwent an immediate left anterolateral thoracotomy in the resuscitation

room. Two died and the three others left hospital within a week. Twenty six patients were shocked on arrival, but all survived. The remaining seven patients were not shocked, and one died owing to trauma to a coronary artery. The overall mortality of under 8% compares favourably with that in other published series. It should be noted that the emergency surgical relief of acute cardiac tamponade was performed by surgical registrars.

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- 1 Reece IJ, Davidson KG. Penetrating cardiac injuries in the United Kingdom. *Thorax* 1983;38:81-3.
- 2 Martin LF, Mavroudis C, Dyess DL, Gray LA, Richardson JD. The first 70 years' experience managing cardiac disruption due to penetrating and blunt injuries at the University of Louisville. *Am Surg* 1986;52:14-9.

Third trimester placental grading by ultrasonography as a test of fetal wellbeing

SIR,—Ms Jean Proud and Dr Adrian M Grant (27 June, p 1641) highlight the relevance of the appearance of a grade 3 placenta on ultrasonography at 34-36 weeks' gestation. When this information was reported to the clinician in their trial there was a significant decrease in perinatal deaths compared with when such information was not reported. This seems to be an important finding, yet it is not clearly shown how this decrease in mortality was achieved.

In their study there was no significant difference in the rates of instrumental delivery or caesarean section between the two groups. In the group where the grading was known by the clinician delivery occurred earlier despite an overall lower induction rate (no figures). This is primarily explained by a tendency towards earlier spontaneous labour in this group before 41 weeks (no figures). Was this significant? That spontaneous labour should occur more often when the placental grading was known by the clinician is puzzling. Were these women also aware of the diagnosis? Did they detect the concern of the medical and nursing staff? Did they undergo more vaginal examinations to assess the cervix? Was the diagnosis of labour more liberally made? Furthermore, on what basis was earlier induction practised: was placental grading the sole or main determinant for such intervention?

The main response to the report of a grade 3 placenta was measurement of the oestriol concentration. Did this influence the policy of early induction? It would also be interesting to know if there was any correlation between oestriol concentrations and placental grading.

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AUTHORS' REPLY.—In response to Mr Fitzpatrick's queries, the main response to grade 3 placental appearance either at 34-36 weeks or at any time during pregnancy was estimation of oestriol concentration, and this explained the difference between the total trial groups in this respect. The appearance of a grade 3 placenta also seemed to prompt more cardiotocography, admission to hospital, and elective caesarean section, but these differences were not significant.

The overall rate of induction of labour was similar in the two trial groups of women with grade 3 placentas. A large number of inductions because