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Availability of organs for transplantation: a three year study

The kidney transplant programme in Nottingham began 11 years ago. As the number of kidneys made available each year falls short of the number of patients added to the waiting list for transplantation we carried out a study to identify the number of potential donors. We also identified the number of other solid organs potentially available for transplantation and reasons for non-referral.

Method and results

The records of all deaths in the six intensive care units covered by the Nottingham renal transplant unit were examined, prospectively for the last six months of 1985 and retrospectively for the previous 42 months to the beginning of 1983. Any patient over 2 years old who was ventilated, diagnosed as brain stem dead before the ventilator was switched off, did not have appreciable sepsis or evidence of malignancy (except for primary cerebral malignancy), and had normal renal function was considered to be a potential kidney donor. From this group patients aged up to 55 with normal results of liver function tests and no history of liver disease or trauma were considered to be potential liver donors. Those patients aged up to 40 without cardiac disease or chest trauma were considered to be potential heart donors. During the prospective study reasons for non-referral of potential donors were actively sought.

The table gives details of donation of kidneys and potential donors. During the three years there was an average of 35 potential donors. On the assumption that each potential donor would give two kidneys this equates with an average of 50 kidneys/million population/year. Only 25 kidneys/million/year were offered.

In addition to the 105 patients who were brain stem dead and suitable for kidney donation there were two children aged under 2 (several units do not use kidneys from children of that age). One 8 year old liver donor had unsuitable kidneys. Ninety of these patients were potential liver donors (21/million/year) and 71 potential heart donors (17/million/year). Five livers and 14 hearts (two heart-lung combinations) were retrieved.

During the retrospective study the reason for non-referral could not be determined accurately, but in the prospective study two patients were not referred by medical staff and in seven cases the relatives refused donation (table).

Comment

In 1975, from a survey in Nottingham, 43 kidneys/million population were considered to be potentially available but only 37% were transplanted.¹ At present 40 kidneys/million population is the number of transplants needed each year in the United Kingdom. We have shown that 50 kidneys/

million/year are suitable for transplantation in our district but 50% were not referred for retrieval.

We also identified 17 potential heart and 21 potential liver donors/million/year, but the use of these organs is governed by day to day needs of the recipients and compatibility of blood groups, size, and facilities at the various units.

The stated policy of the intensive care units studied is to refer patients who are brain stem dead for consideration as organ donors. The fact that seven of 15 potential donors were lost in the last six months of the study because relatives refused to agree to donation is alarming. Before this study there was no strict policy regarding who should ask relatives. It is now recommended that the senior medical staff in the intensive care unit should do so. We consider that whoever asks must be well informed and motivated towards transplantation because the way in which the relatives are approached is as important as ensuring that all relatives are asked. The nursing staff caring for the patients have the closest contact with relatives; thus they also should be well informed and may be able to introduce the subject of organ donation. These points should be remembered if required request becomes law.

Intensive care units participating in the study were those at Queen's Medical Centre (adult and paediatric), Nottingham City Hospital, Derby Royal Infirmary, Derby City Hospital, and Mansfield General Hospital.

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Nifedipine in the treatment of chilblains

Perniosis, or chilblains, consists of inflammatory lesions of the skin, usually arising on acral sites as a result of an abnormal reaction to cold.¹ Often, but not invariably, they are associated with acrocyanosis or erythrocyanosis and only rarely with Raynaud's phenomenon. The lesions usually develop in early winter and present as itchy and painful erythematous purplish swellings. They may resolve spontaneously in two to three weeks, but in severely affected patients chilblains may be present throughout the winter and summer and may blister or ulcerate.² Their aetiology is unknown but the gross pathology shows vasoconstriction of the subcutaneous arteries and larger arterioles associated with a vasodilatation of the superficial minute vessels.³ Histopathologically there is dermal oedema, an intense perivascular mononuclear cell infiltrate, thrombosis of vessels in late cases, and spread of the inflammatory process into the subcutaneous fat.⁴

The treatment of chilblains is unsatisfactory. As the slow calcium channel antagonist nifedipine has been shown to be one of the most useful treatments for primary and secondary Raynaud's phenomenon⁵ we decided to study whether it might also be beneficial in the treatment of another cold related disorder: idiopathic perniosis. We therefore undertook a double blind, placebo controlled, randomised crossover study of nifedipine in the treatment of perniosis during the winter of 1985-6.

Patients, methods, and results

Ten otherwise healthy patients who had suffered from severe idiopathic perniosis for a minimum of five months each year for the previous three years were selected for the study. Patients were enrolled as soon as lesions had developed and all gave their signed informed consent before the study began. The study consisted of two periods of six weeks of treatment with either nifedipine retard 20 mg or identical placebo tablets taken three times daily. Nifedipine retard was prescribed because it gives a stable blood concentration throughout the 24 hours, which probably minimises the incidence of side effects. The dose of 60 mg daily was chosen because in an earlier pilot study this dose resulted in a good therapeutic response and few side effects. Patients were assessed clinically every two weeks throughout the study, and at each visit lesions were photographed. In addition, patients kept a daily diary of any change in the clinical appearance, degree of irritation, and pain and soreness of the lesions assessed on a three point scale: better, same, or worse. The duration of established lesions and the appearance of new lesions were also recorded.

In seven of 10 patients treated with nifedipine the established lesions resolved within seven to 10 days, and no patient developed new chilblains while taking the

Numbers of patients diagnosed as brain stem dead and numbers of kidney donors used

	1983	1984	1985	
			Jan-June	July-Dec
Donors used	16	21	10	6
Donation refused:				
By relatives	1		4	7
By coroner		1		
Donation not offered	19	14	4	2
Total potential donors	36	36	33	
Potential kidneys/million population	51	51	47	

drug. The five patients treated initially with nifedipine relapsed within one week of starting placebo treatment. In three patients the relapse was so severe that the code was broken and the patients began treatment with nifedipine again, with symptomatic response. In the remaining two patients in this group and the five initially treated with placebo new chilblains continued to develop and individual lesions resolved slowly over 20 to 28 days from their onset. Nifedipine reduced the pain, soreness, and irritation of the lesions; placebo was ineffective. Irritation resolved within three to five days (20-25 days with placebo), and lesions became painless after five days (25 days with placebo).

Mild dizziness, flushing, and occasional headaches were experienced during treatment with nifedipine, but only one patient required a reduction of the dose to 40 mg daily because of symptomatic hypotension. This patient continued to derive benefit from the reduced dose.

Comment

This study shows that nifedipine is effective in the treatment of severe recurrent idiopathic perniosis. Further research is needed to understand the pathophysiology of this common condition.

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Willingness of homosexual and bisexual men in London to be screened for human immunodeficiency virus

Clinicians now have ready access to tests for antibodies to human immunodeficiency virus (HIV), but, as a positive result may have major implications for the patient, there has been considerable discussion about whether those in high risk groups should be screened.^{1,2} Arguments against screening members of these groups have been advanced, but they have not been backed by data on the willingness or otherwise of these people to be tested. We investigated this as part of a study to determine the prevalence of HIV among homosexual and bisexual men attending our sexually transmitted disease clinic.

Patients, methods, and results

All homosexual and bisexual men attending the department of genitourinary medicine as new patients from November 1985 to February 1986 were asked to participate. Each patient was counselled and given an explanatory leaflet before being offered screening. Patients who agreed to be tested were given the option of being told their result. Those who wished to know were asked to return in two weeks for their result and for further counselling; those with a positive result were offered continued support. Samples from patients who did not wish to know their result were coded before testing.

A competitive enzyme inhibition assay (Wellcome Diagnostics, Dartford) was used for initial screening for HIV. Serum samples giving positive results were tested further by fixed cell immunofluorescence on infected and uninfected cells. All serum samples were also tested for hepatitis B surface antigen (HBsAg) and hepatitis B surface antibody by radioimmunoassay; samples positive for HBsAg were tested for hepatitis B e antigen (HBeAg) and antibody by radioimmunoassay, and samples negative for HBsAg were tested for antibody to hepatitis B core antigen by enzyme immunoassay. Abbott reagents (Abbott Lab, Chicago) were used for these tests.

Of 270 consecutive patients, only 13 (5%) did not wish to be tested. Antibodies

to HIV were found in 36 of the 257 (14%) tested (table), the prevalence being higher among homosexuals (17.9%) than bisexuals (5.1%). Most patients (70% overall, 66% of homosexuals and 77% of bisexuals) wished to know their result.

A higher proportion of the men positive for antibody to HIV had markers for hepatitis B virus (30/36; 83.3%) than of the seronegative men (86/221; 38.9%). The lower prevalence of HIV among bisexuals was mirrored by the prevalence of hepatitis B markers; these were present in 23 of the 78 (29.5%) bisexuals and 93 of the 179 (52.0%) homosexuals. Six of the 36 (16.6%) men positive for HIV and seven of the 221 (3.2%) seronegative men were HBsAg positive; patients with hepatitis B markers were significantly more likely to be positive for HBsAg if they also had HIV antibodies ($p < 0.05$). All six men who were positive for both HIV antibody and HBsAg were also positive for HBeAg.

Prevalence of antibodies to HIV and markers of hepatitis B virus in 257 patients who consented to be tested. (Values are numbers (%) of patients)

	Total	Positive for antibody to HIV	Positive for markers to Hepatitis B virus	Positive for HBsAg
Homosexuals	179	32 (17.9)	93 (52.0)	10 (5.6)
Wished to know result	119 (66)	20 (16.8)		
Did not wish to know	60 (34)	12 (20.0)		
Bisexuals	78	4 (5.1)	23 (29.5)	3 (3.8)
Wished to know result	60 (77)	3 (5.0)		
Did not wish to know	18 (23)	1 (5.6)		
All patients tested	257	36 (14.0)	116 (45.1)	13* (5.1)
Wished to know result	179 (70)	23 (12.8)		
Did not wish to know	78 (30)	13 (16.7)		

*11 were positive for e antigen, including all six who were also positive for HIV.

Comment

We found a lower overall prevalence of antibodies to HIV (14%) than the 17-34% reported elsewhere in London,³⁻⁵ even though our samples were obtained one to three years later. The previous studies, however, were carried out at three hospitals that see many patients with disease associated with HIV and so may attract a population unrepresentative of London as a whole.

Arguments against screening for antibodies to HIV have been promulgated widely, but arguments in favour are less often discussed. Some worried patients may wish to be tested to confirm their belief that they are antibody negative. Others may find a positive result more acceptable than the fear of the unknown. Many patients regarded knowledge of their antibody state as a strong impetus for behavioural change. Our finding that after counselling 70% of homosexual and bisexual men wished to know their antibody state indicates that screening is acceptable to more people than was previously suggested.

Interestingly, in this small series patients with HIV antibodies seemed to be more likely to have active infection with hepatitis B; this may reflect underlying immunosuppression.

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