

Kidney allocation scheme success in improving HLA matching

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Background

A revised Kidney Allocation Scheme was introduced in the UK in July 1998 based on HLA matching at three levels: 000 mismatches, favourable matches (100,010,110 HLA-A, B, DR mismatches) and non-favourable matches. The scheme was modified in July 2002 to improve access to well matched kidneys for DR homozygous patients and children.

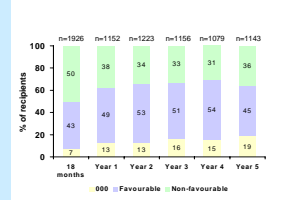
Aims

This study reviewed the effectiveness of the scheme in improving HLA matchgrades. Comparisons were made between transplants under the revised scheme (July 1998 - June 2003) and transplants under the last 18 months of the previous scheme (January 1997 - June 1998). For the latest three years of the revised scheme, HLA matchgrades were investigated according to different patient characteristics.

Results - overall

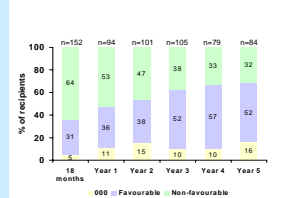
HLA matchgrades in adult and paediatric recipients in the last 18 months of the previous scheme were compared with each of the five years of the revised scheme.

HLA matching for adult patients



There have been significant improvements in HLA matchgrades in adults in the revised scheme compared with the previous scheme, ($p < 0.0001$) and over the five years of the revised scheme, ($p < 0.0001$).

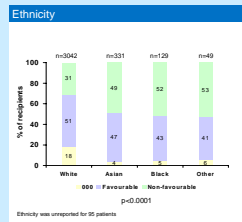
HLA matching for paediatric patients



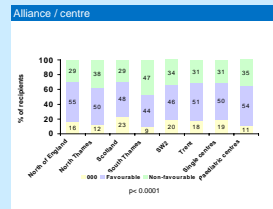
There have been significant improvements in HLA matchgrades in paediatric recipients in the revised scheme compared with the previous scheme, ($p < 0.0001$) and over the five years of the revised scheme, ($p < 0.03$).

Results - latest three years

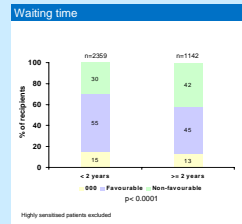
The graphs below show HLA matchgrades in recipients over the latest three years of the revised scheme, July 2000 to June 2003, by patient factors.



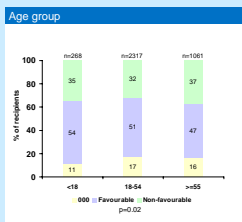
18% of white patients received 000 mismatched grafts compared with 5% of black and 4% of Asian patients



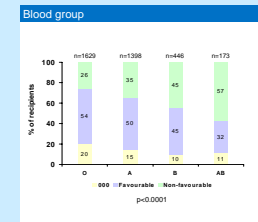
There was significant variation in HLA matchgrades across alliances



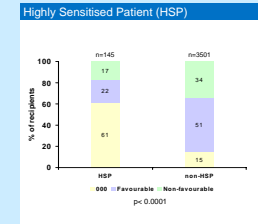
Patients waiting less than 2 years received a greater proportion of favourably matched grafts than those waiting 2 years or more



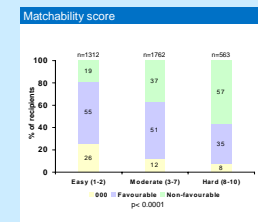
There were significant differences in HLA matchgrades across age groups



20% of group O patients received 000 mismatched grafts compared with 10% of group B patients



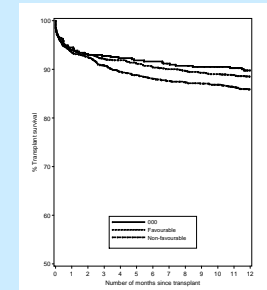
61% of HSPs compared with 15% of non-HSPs received 000 mismatched grafts



19% of "easy to match" patients received a non-favourably matched graft compared with 57% of "hard to match" patients

Transplant survival

Unadjusted one year transplant survival was analysed for 3802 first adult transplants from the first four years of the current scheme.



HLA matchgrade	No.	% survival	95% CI
000	455	90	87-93
Favourable	1993	89	87-90
Non-favourable	1354	86	84-88

Log rank, $p < 0.035$

Conclusions

The revised allocation scheme has improved the level of HLA matching overall. 66% of all patients received 000 or favourably matched kidneys in the latest three years of the current allocation scheme, compared with 38% in the last 18 months of the previous scheme.

There were significant differences in HLA matchgrades achieved in different patient groups in the latest three years.

The national Kidney Allocation Scheme is currently under review and the accessibility of different patient groups to well-matched kidneys will be taken into account.