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Original Article

Are there good reasons for inequalities in access to renal transplantation in children?

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ABSTRACT

Background. Studies in the USA and Europe have demonstrated inequalities in adult access to renal transplants. We previously demonstrate that the centre of treatment was impacting the time to be registered on the renal waiting list. In this study, we sought to ascertain the influence of patient and centre characteristics on the probability of transplantation within 1 year after registration on the waiting list for children.

Methods. We included patients <18 years awaiting transplantation from the French ESRD National Registry. The effects of patient and centre characteristics were studied by hierarchical logistic regression. Centre effects were assessed by centre-level residual variance. A descriptive survey was performed to investigate differences in the centres' practices, and linear regression was used to confirm findings of different HLA compatibility requirements between centres.

Results. The study included 556 patients treated at 54 centres; 450 (80.9%) received transplants in the year after their listing. HLA group scarcity, time of inactive status during the year, pre-emptive listing and listing after age 18 were associated with lower probabilities of transplantation. Patient characteristics explained most of the variability among centres, but patients treated in paediatric centres had a lower probability of transplantation within 1 year because of higher HLA compatibility requirements for transplants.

Conclusions. Although patient characteristics explained most of the inter-centre variability, harmonization of some practices might enable us to reduce some inequalities in access to renal transplantation while maintaining optimal transplant survival and chances to get a second transplant when needed.

Keywords: children, HLA matching, inequality, paediatric kidney transplantation, renal transplantation

INTRODUCTION

Renal transplantation is recognized today as the first-choice treatment for both adults and children with end-stage renal disease (ESRD). It is associated with improved survival and has been shown to increase life expectancy by 20–40 years for children receiving kidney grafts, compared with those who continue to be treated by dialysis [1]. It is also associated with a better quality of life [2–4] and with the best long-term cost-effectiveness ratio [5, 6].

Important inequalities in access to transplantation after acceptance on the waiting list exist for adults in both the USA and Europe. Although medical conditions explain some of these inequalities, non-medical factors also affect the probability of receiving a transplant. Some of these are patient characteristics, including gender [7–10], race [7, 8, 10–12], educational level [13] and place of residence (municipality) [9]. Others are characteristics of the centre, such as ownership of dialysis facilities (e.g. profit or non-profit status) [14] and the presence of a transplantation unit [9]. No study has simultaneously investigated the impact of patient and centre characteristics on children's access to renal transplantation. Accordingly, we conducted a nationwide study in France to evaluate the effect of these characteristics on wait-listed children's access to renal transplantation, as well as to distinguish valid medical reasons, from unfounded medical or organizational reasons that aimed to be addressed.

METHODS

Population study

We considered for inclusion of all incident paediatric patients [<18 years at commencement of renal replacement therapy (RRT)], recorded in the French REIN ESRD National Registry and registered on the renal transplantation waiting list between 1 January 2002 and 30 June 2011. Important French specificities are that all patients are registered on the waiting list even though a living donor transplantation is planned and that all patients starting RRT before 18 years old are eligible for paediatric priority for graft allocation, even if the registration occurs after 18 years. Organization, data collection and quality control of the REIN registry have been described elsewhere [15]. Patients were followed until 30 June 2012 or until death so that all patients have at least 12 months of follow-up.

Information collected

Patient characteristics. Relevant patient characteristics recorded in the REIN registry were the year and age at start of RRT, gender, primary renal disease, emergency RRT start (defined as an immediate RRT start), place of residence (municipality and geographic location), treatment centre, country of birth, date of registration on the waiting list, time on inactive status on the waiting list during the first year following listing and immunological data (ABO and HLA groups, anti-HLA antibodies). Height and weight, comorbidities and disabilities at baseline were also recorded [16].

From comorbidities and disabilities, we created two dichotomous variables: at least one comorbidity (yes/no) and at least one disability (yes/no). We determined growth retardation (for height and weight) according to international standards for chronological age (cut-off −2SD) [17]. We used the *Network Analyst* module from ARCGIS to calculate the distance between the home address and the centre of treatment and between the home and the closest paediatric transplantation centre. Because the registry does not include relevant socio-economic data for children, we used the municipality of residence as a proxy and crossed our database with unemployment and median income data from the French National Institute of Statistics and Economic Studies (INSEE) to investigate possible associations with social factors [18, 19].

Given the great variety of primary renal diseases relative to the number of patients in our study, we grouped these into categories. Diseases were characterized by their coordinate values in the system of axes defined by the principal components of a multiple correspondence analysis [20] based on seven items: immune renal injury, possible immune extra-renal injury, extra-renal vascular injury, possible extra-renal injury of other causes, genetic diseases and congenital abnormalities of the kidney and the urinary tract, possible post-transplantation recurrence of nephropathy and urological abnormality. The diseases were then grouped by an ascendant hierarchical classification [21], an iterative process in which the algorithm starts with as many clusters as there are data items and builds up a tree by successively merging the two nearest clusters. We used pseudo *F* statistics to choose the threshold at which classification stopped, so that we could create groups homogenous for the difficulty of transplantation. We thus obtained seven groups that we named after their principal shared criteria: vascular diseases, nephropathies with possible immune extra-renal injury, urological abnormalities, congenital or toxic abnormalities, risk of post-transplantation recurrence and others.

From the immunological data (ABO group, HLA antigens and donor-specific antibodies), we retrospectively calculated the FAGN (national ease of graft access) index [16] for each child. This score, used since July 2010 to allocate organs in France, rates from 0 to 60 the number of possible donors with the same ABO group, fewer than three HLA mismatches and no donor-specific antibodies during the previous 5 years.

Centre characteristics. The centre characteristics we considered were its paediatric specialization (only treating patients under 18 years and with paediatricians as medical staff), the proportion of patients on inactive status on the waiting list during the first month following listing and the proportion of pre-emptive transplantations, categorized in two dichotomous groups, one with the median as the cut-off and the other by the size of the renal unit, with the third quartile as the cut-off (based on the number of new patients treated in 2010/2011).

Statistical analysis

The primary outcome was the probability for a patient on the waiting list of receiving a transplant within 12 months after listing.

The association between the patient characteristics and the outcome was studied with logistic regression models. We performed univariable logistic regressions on all of the patient characteristics to determine those to include in our final models. All variables with a P-value of <0.2 were included in the multivariable logistic regression. All continuous variables were tested for linearity with the SAS macro LGTPHCURV9 [22]. Gender, year of first treatment and primary renal disease were included (forced) in the model regardless of their significance in the univariable analysis.

Then we assessed the centre effect by performing a hierarchical multivariable regression and including centres as a random effect. We studied three models. *Model 1* was an empty model (not adjusted for patient or centre characteristics), and *Model 2* studied the centre effect after adjustment for patient characteristics. Afterwards, we tested some patient characteristics as random effects to determine whether or not some associations varied between centres. Finally, we sought to explain part of the variability between centres by including centre-fixed effects in the models (*Model 3*). The centre effect was assessed by studying the second-level residual variance (τ_{00}) in the three models; this step allowed us to calculate the intra-class correlation coefficient $\{\mathrm{ICC} = \tau_{00}/[(\pi^2/3) + \tau_{00}]\}$, which evaluates the proportion of variance in the outcome between centres. We also studied the change in the residual variance between Models 1 and 2 $\{\mathrm{CRV} = [(\tau_{00(1)} - \tau_{00(2)})/\tau_{00(1)}] \times 100\}$, which evaluates the proportion of variance in the outcome between centres that is explained by patient characteristics (case mix). When an interaction between a centre

and a patient characteristic was suspected, we tested for cross-level interaction.

We used the funnel plot method to present crude and adjusted variability between centres [23, 24]. To access the reliability of our findings, we performed two sensitivity analyses with the same model: one to predict transplantation after excluding patients treated by pre-emptive transplantation and the second assessing only those patients treated in paediatric centres. All tests were performed with the α-risk set at 0.05. Statistical analysis was performed with SAS 9.2.

Complementary analysis

To describe centre practices that might explain the remaining difference observed between paediatric and adult centres after adjustment on the items available in the registry, we surveyed transplantation practice and policies by asking one nephrologist per centre to complete a questionnaire.

To outline additional possible differences in HLA compatibility requirements, we analysed the patients from the French Renal Transplantation database [25] to examine whether the type of centre affected HLA matching between donors and receivers. We performed a linear regression with the number of matches for DR, B and A as outcome and adjusted it for age at and year of placement on the waiting list and the FAGN score.

RESULTS

Patient population

We identified 556 patients treated at 54 different centres who were added to the waiting list during the study period. Among them, 450 (80.9%) received transplants during the year after their listing and 498 (89.6%) had received a graft by the end of the study period. The median time to transplantation was 4.2 months.

Access to transplantation

Table 1 summarizes the patient characteristics at inclusion on the waiting list. Relevant patient characteristics found in the univariable analysis to be associated with a renal transplantation during the first 12 months after listing at a P-value of 0.2 were higher age at inclusion on the waiting list, absence of comorbidities and disabilities, pre-emptive listing (listed before starting dialysis), lower distance to the treatment centre, lower time of inactive status on the waiting list during the first year after listing, higher FAGN score and both lower unemployment rate and higher median income in the municipality of residence. We found no relation between the probability of transplantation and gender, primary renal disease, growth retardation, distance to the closest paediatric transplantation centre or birth outside France (Table 1). Hierarchical multivariable logistic regression showed that the risk of no transplantation 12 months after inclusion on the waiting list increased with time of inactive status during the year ($P < 0.0001$). As expected, this risk was negatively associated with the FAGN index ($P = 0.02$). In our population, only 3% of the patients had over 85% of DSA and 16% between 0 and 85%.

The risk of not receiving a graft 12 months after wait-listing was higher for patients who were first listed after their 18th birthdays [odds ratio (OR) 6.57, 95% confidence interval (CI) 1.78–24.27] and those with pre-emptive registration (OR 3.46, 95% CI 1.64–7.33). We also found an almost significant

Table 1. Patients' characteristics at registration on the renal waiting list and rate of non-transplantation within 12 months after registration

	Population description	
	N (Total = 556)	% not transplanted within 12 months
Age at registration on the waiting list		
<18 years	525	28.0
≥18 years	31	54.8
Gender		
Male	328	20.1
Female	228	17.5
Primary renal disease		
Vascular diseases	42	19.1
Nephropathies with possible immune extra-renal injury	25	16
Urological abnormalities	74	21.6
Congenital or toxic abnormalities	221	19.5
Unknown	58	17.2
Risk of post-transplantation recurrence	136	18.4
Growth retardation	(Missing, 94)	
No	340	22.1
Yes (*Z*-score < −2DS)	85	12.9
BMI < −2DS	(Missing, 113)	
No	361	21.3
Yes	59	10.2
Presenting at least one co-morbidity		
No	392	16.8
Yes	164	24.4
Presenting at least one handicap		
No	358	19.8
Yes	198	17.7
Emergency treatment	(Missing, 19)	
No	393	16.8
Yes	144	22.2
Being born overseas	(Missing, 14)	
No	477	19.5
Yes	65	16.9
	Median	IQ
Duration of inactive status on waiting list during the first year (in days)	0	0–42
FAGN score	16	8–25
Year of first RRT (Vintage effect)	2008	2006–2010
Median income (euros) of municipality of residence (Missing, 19)	17 894	15 736–20 659
Distance between home and the closest paediatric transplantation centre (km)	46	14–94
Distance between home and treatment's centre (km)	28	8–68
Unemployment rate (%), municipality of residence (Missing, 19)	4.5	3.3–5.8

Table 2. Odds ratio of non-transplantation within 12 months after registration on the renal waiting list associated to patient characteristics

	Univariable analysis			Multivariable analysis	
	OR	95% CI	P	OR	95% CI
Age at registration on the waiting list			0.002		
<18 years old	1.00				
≥18 years old	3.12	1.50–6.50		6.57	1.78–24.27
Gender			0.960		
Male	1				
Female	0.99	0.68–1.44		0.81	0.47–1.42
Primary renal disease			0.177		
Vascular diseases	1.42	0.69–2.93		1.60	0.53–4.86
Nephropathies with possible immune extra-renal injury	1.49	0.61–3.65		1.49	0.39–5.69
Urological abnormalities	1.43	0.80–2.56		1.04	0.40–2.68
Congenital or toxic abnormalities	1			1	
Unknown	1.21	0.63–2.32		2.20	0.82–5.90
Risk of post-transplantation recurrence	1.90	1.20–3.03		1.95	0.97–3.89
FAGN score			0.0002		
	0.97	0.95–0.98		0.96	0.93–0.98
Growth retardation			0.757		
No	1				
Yes (*Z*-score<-2DS)	0.92	0.56–1.54			
BMI<-2DS			0.476		
No	1				
Yes	0.8	0.44–1.47			
At least one comorbidity			0.018		
No	1				
Yes	1.60	1.08–2.36		0.81	0.45–1.47
At least one disability			0.002		
No	1				
Yes	0.52	0.35–0.78		0.65	0.32–1.32
Pre-emptive listing			<0.0001		
No	1				
Yes	2.91	1.78–4.75		3.46	1.64–7.33
Distance between home and treatment centre			0.114		
OR per 1 km increase	0.99	0.994–1.001		1.00	0.99–1.01
Distance between home and the closest paediatric transplantation centre			0.225		
OR per 1 km increase	1.00	0.99–1.00			
Birth outside France			0.957		
No	1				
Yes	1.78	0.56–1.74			
Vintage effect			0.243		
OR per 1 year increase	1.05	0.97–1.13		0.89	0.78–1.00
Median income, municipality of residence			0.0002		
OR per €100 increase	1.00	1.00–1.00		1.00	1.00–1.00
Unemployment rate, municipality of residence			<0.0001		
OR per 1% increase	1.24	1.14–1.35		1.08	0.87–1.33

vintage effect resulting in a decreased probability over time of not receiving a graft (OR per 1 year increase 0.89, 95% CI 0.78–1.00) (Table 2).

The median rate of transplantation within 12 months after listing for all centres was 75% (inter-quartile range, IQR: 50–100%). The hierarchical model showed significant variability between centres (*Model 1*: residual variance 0.746, SE 0.299) (Figure 1), which accounted for 18.5% of the total variability (ICC). This difference decreased after adjustment for patient-level variables (*Model 2*: residual variance 0.140, SE 0.165) and did not remain significant (Figure 2). Patient characteristics explained 56% of the variability between centres. None of the effects of the patient characteristics differed significantly between centres. However, after including centre variables (*Model 3*), variance decreased to 0.039 (SE 0.110); 72% of the variance that remained after taking case mix into account was explained by centre characteristics. Centre characteristics that were significantly associated with an increased risk of no transplantation 12 months after wait-listing were as follows: (i) no pre-emptive transplantations (OR 3.06, 95% CI 1.34–6.99), (ii) a high rate of patients on inactive status on the waiting list during the first month following inscription (OR 1.91, 95% CI 1.03–3.54) and (iii) a paediatric centre (OR 4.18, 95% CI 1.53–11.39) (Table 3). The test for cross-level interaction between the patient characteristic 'time of inactive status on the waiting list during the first year' and the centre characteristic 'percentage of patients on inactive status during the first month after listing' was not significant (P = 0.77).

The sensitivity analysis of patients with dialysis as their first RRT showed similar results even for the patient variable 'pre-emptive

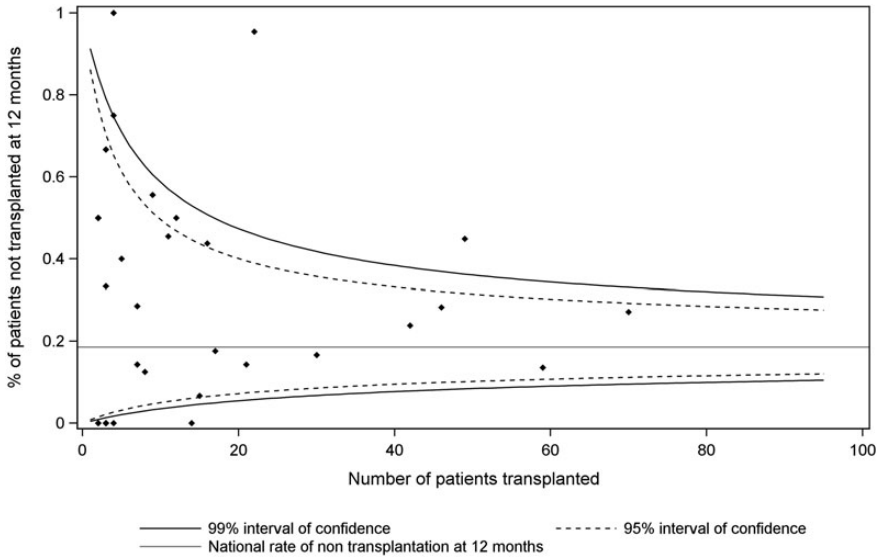

FIGURE 1: Funnel plot of crude centres' rate of non-transplantation at 12 months after registration on the waiting list.

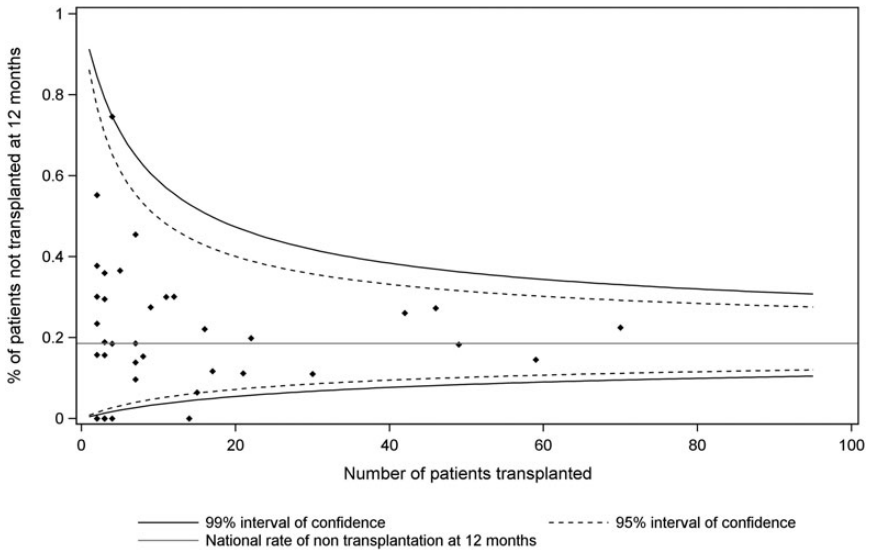

FIGURE 2: Funnel plot of adjusted centres' rate of non-transplantation at 12 months after registration on the waiting list.

Table 3. Centre characteristics and odds ratio of non-transplantation within 12 months after registration on the renal waiting list associated to centre characteristics

	N	OR	95% CI
Centre type			
Adult	38	1	
Paediatric	16	4.18	1.53–11.39
Pre-emptive transplantation			
Yes	23	1	
No	31	3.06	1.34–6.99
% of patients on inactive status on the waiting list			
<25%	26	1	
≥25%	28	1.91	1.03–3.54
Number of new cases (2009–10)			
>3	12	1	
≤3	42	1.58	0.66–3.78

listing' (OR 2.99, 95% CI 1.48–6.06) and the centre variable 'no pre-emptive transplantations' (OR 2.44, 95% CI 1.03–5.80).

When we tested the model on patients treated in paediatric centres only, we found a significant centre effect (Model 1: variance 1.02, SE 0.50), explained mainly by patient characteristics (Model 2: variance 0.24, SE 0.25). No pre-emptive transplantations remained significantly associated with the risk of not being transplanted 12 months after listing (OR 3.07, 95% CI 1.04–9.14) and a high rate of patients on inactive status on the waiting list during the first month after listing remained close to significant (OR 1.99, 95% CI 0.94–4.22).

Complementary analysis

Descriptive survey of centre practices. Twenty-seven centres participated in the descriptive survey of centre practices, 14 paediatric centres and 13 adult centres that accounted

for 85% of the patients in our study. Among the interesting findings were substantial differences in policies for wait-listing: 4 paediatric centres reported that they list patients as soon as possible even if they have temporary medical contraindications to transplantation, while 10 reported that patients are only placed on the waiting list when immediate transplantation is possible. Another interesting result concerned the substantial differences between paediatric and adult centres for HLA matching policies. Five of 14 paediatric centres (36%) reported that they excluded donors with frequent non-shared HLA groups (i.e. Group A2), but only one adult centre of 13 (8%) did so. Moreover, eight of 13 adult centres (62%) stated—but no paediatric centre did—that they did not require any HLA compatibility between the recipient and the donor. On the contrary, 11 paediatric centres (79%) required at least two compatibilities in HLA B and/or DR.

Analysis of observed donor-recipient HLA matching. We included 2058 patients, aged 15–21 years at registration on the waiting list, who received grafts from deceased donors between 1 January 1993 and 31 December 2012. Treatment in a paediatric centre was associated with better HLA matching ($P = 0.005$) after adjustment for age at inclusion on the waiting list ($P = 0.07$), year of transplantation ($P < 0.0001$) and the FAGN index ($P < 0.0001$).

DISCUSSION

In this nationwide, longitudinal study, we confirm that patient and centre characteristics both impact the time to access a renal transplantation among children. Thus, it is justified to question which characteristics are legitimate in lengthening this time and which are not and should be addressed.

Considering patient characteristics, we found that, as expected, immunological factors were the main predictors of time to renal transplantation, precisely because they are essential for the safe allocation of grafts. This was underlined by the increase in the probability of being transplanted with the FAGN score, meaning that common ABO and HLA groups and a low sensitization rate facilitate access to transplantation. As far as that goes, the time on inactive waiting-list status during the first year was strongly associated with the probability of no transplantation. If this finding seems logical we noted that some patients spend the entire year on inactive status, a finding that suggests, as the descriptive survey confirmed, that centres have various strategies of early listing without intent to transplant. The major reason for this strategy may well be that allocation rules in France take into account the time spent on the waiting list. However, this practice induces inequalities among patients that could be reduced by using the time spent on RRT rather than on the waiting list in the allocation policy.

If the above findings did not surprise us, we also found an association between the age at inclusion on the waiting list and the probability of transplantation within 12 months after listing: patients put on the waiting list after their 18th birthdays had a higher risk than those younger than 18 of not receiving a graft (OR 6.57, 95% CI 1.78–24.27). This finding not only underlines the major impact of the paediatric priority rules in France that have resulted in one of Europe's shorter waiting times for renal transplantation in children [20], but also shows that centres have different attitudes towards this priority. Because all our patients started RRT before 18, they were eligible for paediatric priority either immediately or at the centre's request if they were not wait-listed until after 18. Our results show that some centres do not request paediatric priority for their patients who are eligible, which results in a loss of chance for these patients.

Considering the effect of centres, we found a significant variation between centres in children's access to renal transplantation that accounted for 18.5% of the total variability, consistent with the 22% found by Schold *et al.* [21] for adults in the USA.

However, after adjustment for patient characteristics, inter-centre variability in the probability of transplantation 12 months after inscription was no longer significant. This result suggests that on the whole the national allocation rules in France allow an equitable allocation of kidneys for children. However, we found that, although the variance was not statistically different from 0, it decreased after the centre characteristics were added to the model. It thus remains possible that inter-centre variability remains after adjustment for patient characteristics but that we lacked statistical power to demonstrate it.

Moreover, we observed that patients treated in centres with a high percentage of patients on inactive status during the first month after inclusion on the waiting list also had a higher risk of no transplantation within 12 months after listing, even after taking individual inactive time into account. Patients treated in centres without pre-emptive transplantation programs also had a higher risk of not receiving a graft. Although it is possible that the time between inclusion on the waiting list and transplantation varies according to whether or not the patient had pre-emptive transplantation, the association remains significant after excluding those with pre-emptive transplantation. These findings indicate that the centre's practice has a true effect on the probability of transplantation and that efforts have to be done in promoting pre-emptive transplantation as much as possible.

Finally, treatment in a paediatric centre was associated with a higher risk of no transplantation within 12 months after inclusion; this finding is probably due to the higher requirements for accepting transplants in those centres. This explanation is corroborated by the descriptive survey of centres' practices, which showed that 79% of paediatric centres required at least two compatibilities in B and/or DR and that 36% exclude donors with a high-frequency HLA group that the patient does not share, compared with 30 and 8%, respectively, in adult centres. Moreover, we showed that patients receiving grafts in paediatric centres have a higher degree of donor-recipient HLA matching. Although questions have been raised about the importance of HLA matching in view of the improvement in immunosuppression [26], there is growing evidence that HLA matching in children is associated with graft survival [22] and has a strong impact on the probability of retransplantation and on waiting time to retransplantation

[27] in patients who will need several transplantations during their life. Moreover, even if improved immunosuppression does allow better graft survival despite poor HLA matching, the side effects of these treatments must not be overlooked: the incidence of non-Hodgkin lymphoma has increased in children with a poor HLA matching [28]. Paediatric centres appear to optimize HLA compatibility and thus improve transplant survival and decrease the risk of immunization for a second transplantation.

The main strength of our study is its use of a hierarchical logistic model that makes it possible to demonstrate this inter-centre variability. This model is more accurate than the models usually used to study hierarchical data, because it takes into account the correlation between patients treated at the same centre and thus allows more accurate estimation of ORs, their confidence intervals and the estimation of the residual inter-centre variance. Another advantage of this model is that it enables us to study several centre characteristics to explain the variability between centres.

The primary limitations of our study are the lack of reliable individual socio-economic data, even though the universal health-care insurance system might decrease inequalities in France, at least in comparison with some other countries.

We have also a limited number of centres that treat patients younger than 18 years. The centre effect is no longer significant after adjustment for patient characteristics. We cannot, however, conclude from these results that the variables included in the model enable us to explain in full the variability between centres in access to transplantation after wait-listing, but rather that we might lack power. Simulation studies have suggested that at least 30–50 groups are needed to obtain precise estimates and that variance components tend to be underestimated when the number of level-2 units (centres) is small [29, 30].

Although our results are dependent on the French allocation policy so that such a study may find different results in another context, we do think that those results are relevant in countries with different allocation policies. Considering modifiable factors, we found that the lack of minimal HLA-matching requirement and the need to request priority that is not automatically given induces inequalities in access to renal transplantation in France. Harambat *et al.* [31] reviewed the different policies, practices and rates of paediatric kidney transplantation in Europe. They demonstrated that the difference in allocation policies and the level of paediatric prioritization strongly impact both the waiting time and the rate of paediatric transplantation and were explaining strong inequalities between countries. When studying the allocation policies to children in the different transplant organizations (national or supra national) in Europe, we observe several similarities with the French system, and we can hypothesize that the same causes induce the same results. For example, also most organizations are including HLA matching in the kidney attribution only two of them (Scandiatransplant and the NHS Blood and Transplant) defined a minimal HLA-matching requirement to benefit from the paediatric priority. In the UK, like in France, paediatric priority can be prolonged after 18 years if RRT has started before 18 years. Finally, other rules seem to be at risk of inducing inequalities such as the possibility of getting the paediatric bonus after 16 years if a growth potential still exists in the Eurotransplant zone or the use of deferent algorithms in several regions of Spain.

CONCLUSION

Although overall access to renal transplantation in France is good, this study confirms the existence of inequalities among children in access to transplantation after placement on the waiting list. We found that characteristics of both patients and centres may play a role in these inequalities.

Although some medical characteristics such as immunological factors rationally impact access to transplantation, information about the appropriate use of the paediatric priority and the inactivated status on the waiting list is needed to address those unjustified sources of inequality. We also demonstrated a difference in policies between adult and paediatric centres, especially for HLA matching. Further studies are needed to evaluate the impact of these policies, not only on the time needed to access a first transplantation and on survival of the first transplant, but also on access to a second transplantation later in life, on the survival of both the graft and the patient and on the occurrence of complications. Such studies will enable us to harmonize practices according to evidence-based data and thus reduce inequalities in access to renal transplantation while providing patients with the best present and future graft and personal survival chances.

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CONFLICT OF INTEREST STATEMENT

None declared.

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