

The Portuguese kidney transplant allocation system – a change is needed

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Any allocation system should take into account that availability of organs is scarce, implying a fair distribution for maximum efficiency and equality of access while respecting the *Leges Artis*. This last point deserves a profound reflection. We cannot think of justice when the allocation is based on data deeply outdated and mismatched in the light of current scientific knowledge. The Portuguese allocation system is based on scoring criteria dated from 2007.

A change is needed. However, any change must be modeled in advance so that the consequences can be assessed.

One option is to compare several allocation systems and evaluate the consequences and differences with our waiting list and from there start to change. In the last issue of the Journal, Lima¹ and colleagues published an article on the topic of organ allocation systems worldwide, an important contribution to this debate.

Another way is to analyze the immunological characteristics of the receptors on the waiting list and the possible donors' characteristics according to the population or the characteristics of previous donors and from there consider weighting factors.

One example of the last option is the French system. With complicated legal procedures that can be an obstacle to transplantation, particularly of living donor, this system is however an example of how optimization can be accomplished. The allocation rules are revised every two to three years by the French Biomedicine Agency (the body that regulates organ transplantation). The last revision occurred in 2015, and the main objectives were to optimize young people's access to transplant, promote a better match between receptor and donor

age and improve HLA compatibility between donor/receptor. The main objective was to prevent the increase of sensitized patients on the list.

The data were published in *Nephrology Dialysis and Transplantation* and showed that access to transplant by young people aged 18 to 29 years old increased from 23 to 35%, and from 23 to 28% in the 30 to 45 year-old age range. A better age and HLA-DR and DQ compatibility between donor/receptor was accomplished. There was an increase of 0 mismatch in DR from 35 to 59% and in DQ from 51 to 72%². These data are of main importance and in my opinion should be the pillars of any change in our allocation system.

The authors, when comparing the UK and Eurotransplant with our system, found that a higher number of hypersensitized patients and with more HLA mismatches are selected.

One of the main objectives for the change in the Portuguese Allocation System in 2007 was to considerer patients with a longer time on dialysis to be transplanted and also take into account HLA compatibilities. However, as at that time there were a large number of patients with a median waiting time on list greater than 10 years, it was this point that weighed. Ten years later, our waiting list has a huge number of sensitized patients that is increasing each year.

Another crucial point of our system is that the definition of a sensitized patient is based on the Panel Reactive Antibodies (PRA) by Complement Dependent Cytotoxicity (CDC) method. We are missing sensitized patients due to this method's lack of sensitivity. Although the simulation in the article is performed with calculated PRA (cPRA), as stated by the authors, it is

urgent to start using cPRA. The main allocation systems in the world have been using it since at least 2005, and the implications for Portuguese patients waiting for a kidney transplant have already been evaluated and published³.

The match between receptor and donor age is desirable and we suppose that a points system that favors “Old to Old” should be implemented. However, 80% of the causes of death are due to medical reasons, so an increase in donor age⁴ is expected over the coming years. Taking this into account, we can assume there is the risk of a certain age range not being transplanted. A simulation is necessary to understand the implications of any change in the waiting list.

Finally, as stated in the article, the results are based on simulated data for donors and receptors. A simulation with real receptors on the waiting list and with a cohort of donors of the Portuguese population is needed to reach more accurate results. Further, any modification of the allocation system should be preceded by a simulation to understand the real consequences of any change.

Several articles have been published, demonstrating the characteristics of our waiting list and also of the

population of the northern region of Portugal, which could be guiding the way forward^{5,6}.

I believe there is a need for a change in the organ allocation policy in Portugal, and this view is largely supported by health professionals working in the transplantation field. The article by Lima et al¹ is a contribution to this debate.

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