

Hospital do Rim, São Paulo: A World Leader in Kidney Transplantation

Hospital do Rim, São Paulo: Líder Mundial no Transplante Renal

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In the current issue of *Brazilian Journal of Nephrology*, Jose Medina-Pestana and colleagues present data on renal transplants at the Hospital do Rim (Hrim) in São Paulo, a unique institution focusing on the care of renal disease and transplantation.^{1,2} Their reported outcomes and progress is astonishing with the single hospital having performed 11,436 kidney transplants over an 18-year period.

Concurrently, the institution has streamlined their systems-based practices to increase efficiency while standardizing care, ultimately allowing > 1,000 transplants in the year 2010 and most recently, 886 transplants in 2015.¹⁻³ Their results are equally impressive with 5-year graft survival of 93.1% for living and 79.7% for deceased donors, figures that at least rival or even surpass graft survival rates in the United States according to the 2015 Scientific Registry of Transplant Recipients (SRTR).^{1,4}

One interesting area of comparison is the incidence of acute rejection, which approaches 25% of transplant recipients at Hospital do Rim, compared to approximately 8% in the United States between 2013-2014. The authors do acknowledge that the most common initial treatment has included a triple immunosuppressive regimen with Tacrolimus, Prednisone, and Azathioprine.

Of note, Medina-Pestana and co-workers report on a substantial reduction in first treated acute rejections with the more recent maintenance immunosuppression including Mycophenolate and a trend to > 80% of transplants receiving induction

therapy.^{1,4} Additionally, cold ischemia time approaches almost 24-hours prior to transplantation compared to < 18 hours in the United States, potentially related to long travel/shipping times, although not specified in the manuscript. Despite these factors, their results speak for themselves and highlight their success as a world leader in kidney transplantation. Moreover, results provide credence to the value of organized medical care that produces excellent outcomes regardless of payer status, insurance coverage, or access to medications.

As a country, Brazil spends only 5% of its gross domestic product (GDP) on publically funded health care that both regulates organ procurement and mandates the provision of all anti-rejection medications for transplant recipients.⁵ Indeed, when calculating transplants per cost in GDP, Brazil is the clear world leader.⁵ Why then, despite the growing cost of healthcare in the United States (approaching 18% of GDP) is Brazil able to achieve such remarkable outcomes at a fraction of the cost? Hospital do Rim itself utilizes an “assembly line model”, breaking down each step in the transplant process allowing for reproducibility, standardization, and quality improvement.

The gradual increase in transplant volume at Hospital do Rim is largely linked to an increase in the number of deceased donor transplants.¹ In 2014 alone, close to 100,000 patients were awaiting transplant in the United States. More than 8,000 died or were removed from the wait list due to deteriorating health. In Brazil, in contrast, 48% of

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patients are transplanted within 1-year of being listed and only 3% of patients die while on the waiting list.^{4,6}

Although there is significant regional disparity in organ allocation, Brazil has still achieved what the United States is still struggling to conceive: an organized and unified methodology for public outreach that increases awareness about identification of organ donors and establishes protocols for organ procurement and allocation.⁷

Earlier this year, France made global headlines by joining the cohort of countries with “opt-out” organ donation policies, a step that will both increase their number of available donor organs while reinforcing the nation’s stance on the importance of organ donation and transplantation. In contrast, Brazil abolished its “opt-out” policy for organ donation in 1998 and acknowledges clear regional disparities in organ transplantation related to population densities, income, and density of transplantation physicians.⁷

Despite this, Hrim and high-performing Brazilian transplant centers have graft survival comparable to the United States and Europe. In the authors’ opinion, much of the success experienced by the Hospital do Rim can be attributed to national collaboration, and focused initiatives on education and organ procurement. Using Brazil and France as a model,

clinicians and researchers around the world must ask ourselves how we can advocate on behalf of our patients to increase both the availability of donor organs and the public perception of the importance of transplantation.

REFERENCES

1. Medina Pestana J. Clinical outcomes of 11,436 kidney transplants performed in a single center – Hospital do Rim. *J Bras Nefrol* 2017;39:294-302
2. Medina-Pestana JO. Organization of a high-volume kidney transplant program--the "assembly line" approach. *Transplantation* 2006;81:1510-20. PMID: 16770238 DOI: <http://dx.doi.org/10.1097/01.tp.0000214934.48677.e2>
3. Medina-Pestana JO. More than 1,000 kidney transplants in a single year by the "Hospital do Rim" Group in Sao Paulo - Brazil. *Clin Transpl* 2010:107-26.
4. Hart A, Smith JM, Skeans MA, Gustafson SK, Stewart DE, Cherikh WS, et al. OPTN/SRTR 2015 Annual Data Report: Kidney. *Am J Transplant* 2017;17:21-116. DOI: <http://dx.doi.org/10.1111/ajt.14124>
5. Medina-Pestana JO, Vaz ML, Park SI, Garcia VD, Abbud-Filho M, Campos Hde H. Organ transplantation in Brazil in the year 2002. *Transplant Proc* 2004;36:799-801. PMID: 15194276 DOI: <http://dx.doi.org/10.1016/j.transproceed.2004.03.061>
6. Salvalaggio P, Afonso RC, Pereira LA, Ferraz-Neto BH. The MELD system and liver transplant waiting-list mortality in developing countries: lessons learned from São Paulo, Brazil. *Einstein (Sao Paulo)* 2012;10:278-85. DOI: <http://dx.doi.org/10.1590/S1679-45082012000300004>
7. Medina-Pestana JO, Galante NZ, Tedesco-Silva H, Harada KM, Garcia VD, Abbud-Filho M, et al. Kidney transplantation in Brazil and its geographic disparity. *J Bras Nefrol* 2011;33:472-84. DOI: <http://dx.doi.org/10.1590/S0101-28002011000400014>