Barriers and Limitations to Access to Liver Transplantation in Latin America

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Latin America is made up of 20 countries spanning both hemispheres, from Mexico to Chile, that speak romance languages, mostly Spanish and Portuguese. The 92 million km² is home to approximately 610 million people, and it is known for its cultural diversity. There are huge economic and developmental asymmetries between and within countries, leading to large differences in health care provision and investment.¹

Despite the lack of resources in most of the public health systems, liver transplant started relatively early in Latin America: in 1968 in Brazil and 1969 in Chile.² Other countries started their programs only a few years later, at a time when liver transplant was still considered an experimental procedure, the survival rate was poor, and it had many complications related to the technique, rejection, and drug side effects.

The increasing numbers and the consolidation of the transplant programs took a long time, not only because of the lack of good immunosuppressants but also because of economic aspects and the organization of transplant systems. Some countries have not developed liver transplant programs yet (Table 1).

ACCESS TO LIVER TRANSPLANTATION

The biggest barrier to access is the lack of any liver transplantation program in many parts of the region. None of the Latin American countries classified as lower middle income (Honduras, Nicaragua, Guatemala, and Bolivia) by the World Bank are able to maintain liver transplantation programs, and the rate of liver transplantations carried out per million people is closely correlated with the gross domestic product per capita of each country. The lack of economic development in Central America and parts of South America is a major hurdle to access to liver transplantation.³

Even in countries with established liver transplantation programs, the numbers are modest in most. In some of them, where programs have been implemented, they are frequently interrupted because of financial difficulties and also for the changing political circumstances, combined

Abbreviations: N, number; pmp, per million population.
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with the absence of organ procurement organizations, meaning that for a majority of Latin American countries, it remains difficult to develop solid liver transplant programs.

For the few countries with established programs, there are still significant barriers to access, such as low deceased donation rates, with 20.4 per million population (pmp) in Uruguay, 16.6 pmp in Brazil, and 8.5 pmp in Argentina, which are the highest numbers in the region; Nicaragua and Guatemala report just 0.2. All are inferior to the rates in developed countries, such as 46.9 in Spain and 34.0 in Portugal. As Table 2 shows, all of the countries also have the problem of low rate of conversion from multiple organ donors into effective liver transplantations. Some reasons for this include a lack of trained retrieval teams, difficulty in maintaining the viability of donors because of human resources and logistic bottlenecks related to availability of equipment and expertise, and insufficient intensive care unit beds. Countries with a large number of liver transplantations per year, such as Brazil and Argentina, with around 2000 and 400, respectively, still have problems of regional disparity because of a big geographic area. Mexico faces similar challenges. The waiting list in Argentina is more than 1200 and in Brazil 1300. Those countries have areas and states thousands of kilometers from metropolitan centers, where they do not have access to transplantation. For example, in Brazil, liver transplantation is available in just 12 of the 26 states.6

### Discussion

Increasing the access to liver transplantation in Latin America will require sustained commitment from countries and their governments. We know that incremental increases in economic conditions take time, as do their impact on public health. For this reason, it is difficult to imagine a dramatic change of fortunes for the region in terms of these barriers. Nevertheless, there are two strategies that would help to ameliorate some of these challenges in the medium term.

The most effective option to increase availability of liver transplantation would be the expansion of the living donor programs. Living donors depend less on the provision of public health care infrastructure all over the country and much more on the presence of a single well-equipped hospital with a well-trained team. Turkey, for example, has greatly increased the number of living donors, whereas India has been increasing the number of living donors compared with deceased donors. At present, less than 10% of all transplantations are from living donors in Latin America, and the majority are only for pediatric recipients. The transplantation community can help to train living donor transplantation teams.

Although liver transplantation is well established in some parts of the region, there are stark geographical asymmetries in access. Some countries would require international cooperation mechanisms to open access to their populations because they lack both the financing
and expertise to establish and run centers individually. Countries could establish consortiums in strategic geographic areas: one in Central America and one in South America, where economic support can be shared between countries involved, and international foundation financing can be sought. The international transplantation community would have a strong role to play in training and support for these ventures, ensuring greater continuity and good results.

In summary, Latin America faces significant organizational, geographical, and financial challenges, but the situation could be improved by cooperation between countries and regions and with the help of the international transplantation community.

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