

## EDITORIAL

## Challenges of maintaining hemodialysis in Brazil

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It is estimated that 10% of the population has some degree of kidney failure. In severe and advanced cases, renal replacement therapy becomes mandatory and may be performed via hemodialysis (HD) or peritoneal dialysis. In Brazil, approximately 160,000 people require this therapy, and 95% of them do so through HD<sup>1</sup>. In HD, blood is filtered through a machine, generally for 4 h straight, three times a week, often for an indeterminate time. To perform this procedure, vascular access is necessary, which can be a fistula with the patient's vein, a graft, or a central venous catheter. These devices become a part of the patient's life until they can be transplanted. However, transplantation is a distant dream for many. It is through the vascular access that blood can be filtered. One of the most significant medical challenges is maintaining this connection between the patient and the machine. It is not easy to maintain a functioning HD access. Approximately 70% of fistulas will be able to perform HD in the best series. Half of these accesses will require some procedures to remain effective in one year. In two years, 40% of these accesses will no longer be in operation<sup>2</sup>.

For these patients, an alternative is the use of central venous catheters. According to the latest Brazilian Dialysis Census, the number of patients using catheters has increased, which is worrying. There was a 5% jump in the use of catheters in 2022, a scenario that tended to decline until 2021. It may seem small in relative numbers, but there are approximately 8,000 people<sup>1</sup>. Patients using catheters have a two times higher risk of death than those using fistulas and a 40% higher risk than grafts<sup>3</sup>. This risk is due to an increase in complications such as infections, thrombosis, and ineffective dialysis. In our country, these complications seem to be even greater<sup>4</sup>.

In recent years, we have observed greater attention to HD access, highlighting specific groups in Brazil to study the topic. The Vascular Forum with Dr. Walter Boim<sup>5</sup> and the Save Group, with doctors Leonardo Harduin, Leonardo

Cortizo, Thiago Barroso, and Márcio Filippo, are the most prominent<sup>6</sup>. These groups have encouraged the discussion of innovative treatments and scientific publications, including national guidelines<sup>6</sup>. All this is so that accesses last longer and patients use fewer catheters. There are already devices with excellent results, such as stent grafts with national technology<sup>7</sup>. Surgical techniques developed or improved in Brazil have been recently published. Using catheter balloons for autogenous fistula maturation, with the consequent early use of fistulas<sup>8</sup> or intra-operative ultrasound<sup>9</sup> are promising and, undoubtedly, bring relief to these patients. However, for most Brazilian patients, these technologies are unavailable. The Public Health System finances 80% of patients undergoing renal replacement therapy in Brazil, and there is an extraordinary gap between the availability of surgical materials, mainly catheters, stents, and thrombus aspiration or collection devices, compared with the private or supplementary health system. More recently, we have also observed a depreciation in medical fees and difficulty using specific devices, even in supplementary healthcare. In addition, there are substantial regional differences in our country. We observed access to the most modern and expensive devices, of the highest technology, in some regions and difficulty in essential items, such as simple X-rays, in others. Unlike other diseases, HD patients sometimes become invisible to the system, with many difficulties in obtaining treatment to maintain access. The path to transplantation is winding and involves many obstacles. Brazil has one of the largest kidney transplant programs in the world in absolute numbers, with 6,283 surgeries in 2019. However, there is a huge disparity in access to this treatment. The South and Southeast regions have access rates similar to those in Spain, and the North and Northeast regions have up to 15 times lower performances. There is also a refusal rate of 42% for organ donation in people with brain death in

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Brazil, perhaps because of cultural reasons or even a lack of understanding about the process<sup>10</sup>.

We have made great progress, but there is still much to be improved. HD should act as a bridge until the patient receives a kidney transplant. During this time, he needs HD access to work properly. It is imperative that not only researchers but also public authorities and the main health financing sources in this country realize the importance of this topic.

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