Rare donor program at the Hospital Sírio Libanês, São Paulo, Brazil

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The rare donor program at the Hospital Sírio Libanês began in 1990, with the encouragement of Delores Mallory, John Moulds, and Marcela Contreras, because at that time no such strategy was available in Brazil. In addition, an important contribution of rare sera was supplied by the international Serum, Cells and Rare Fluids (SCARF) program. Although managed by local funds and having a modest capacity for screening rare donors, all inventory units are available for any transfusion service either from Brazil or overseas.

Since the inception of our rare donor program, 84,426 donors have been screened by serologic methods for several antigens, rendering a total of 161 rare donors, according to different blood group systems (Table 1). Furthermore, since 2012, we have found 36 new rare donors who currently actively contribute with regular donations whenever needed.

Table 1 depicts our results through December 2014. In addition to testing all 84,426 donor samples for the main Rh antigens (D, C, c, E, e), we also tested for the presence of Go^a (RH30) in 20,344 donors to potentially find DIVa donors.

Table 1. Phenotypes of rare blood donors identified at the Hospital Sírio Libanês as of 2014

Phenotype	Tested donors*	Total	2012–2014†
k–	84,656	118	24
Di(b–)	40,551	13	4
r'r'	84,426	6	3
r''r''	84,426	5	1
Kp(b–)	50,232	5	1
R_zR_z	84,426	3	1
r^yr^y	84,426	2	0
Vel–	9,477	2	0
Kx– (McLeod)	50,232	2	0
O_h (Bombay)	84,426	2	1
K_0	50,232	1	1
U–	17,163	1	0
PP1P^k–	23,050	1	0
Jk(a–b–)	32,915	0	0
Total		161	36

*Since 1990.

†New donors added to our rolls between January 2012 and December 2014.

A total of 186 rare units (26 from 2012–2014) were made available to 75 Brazilian patients, not only in our hospital, but in 13 additional hospitals or blood services facilities across the country. In addition, because storage of rare units in the frozen state is not widely available in Brazil, Hospital Sírio Libanês served as a facilitator for storage, thawing, and shipping of 34 rare units that included k– (*N* = 1), K_0 (*N* = 2), Kp(b–) (*N* = 7), Yt(a–) (*N* = 10), Vel– (*N* = 12), and Di(b–) (*N* = 2), which were supplied either by national or international agencies (American Red Cross, New York Blood Center, Canadian Red Cross, and Osaka Red Cross) to seven blood services in the country during this period. There were two requests not filled during this period (one for a U– patient and one for an Rh_{null} patient).

We have not yet identified any Rh_{null} donors; this phenotype is recognized as the rarest in the world. Nevertheless, we understand that identifying such a donor, where high rates of failure are expected, can only be accomplished by an ongoing Rh antigen screening of all new donors, which we carry out in our service.

We were aware of one incompatible transfusion case: the serum from a previously transfused patient was sent to our laboratory for investigation and anti-Di^b was identified. This patient was subsequently transfused with two Di(b–) units through our rare donor program with no further hemolysis.

We have very strong support from voluntary non-remunerated donors in our service. We provide no special incentives for either rare donors already in the program or for those who are enrolling through screening procedures. In other words, although rare donors are quite unique, they receive the same care provided to any regular voluntary donor. So far, we have not perceived any untoward effect by applying this policy.

In summary, a rare donor program requires perseverance, patience, and long-term commitment, given that one cannot predict when rare blood will be needed. Being part of a global program under the aegis of several agencies (International Society of Blood Transfusion, AABB, American Red Cross, EFS [Etablissement Français du Sang], Canadian Red Cross, Japanese Red Cross, Sanquin, etc.) with active cooperation

and mutual support increases the chances of finding a rare unit for a rare patient.

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