

Letter to Editor

## Platelet transfusion: from empiricism to scientific evidence

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Dear Editor,

The progress in diagnosis and treatment of onco-hematological diseases has been amply demonstrated. The transfusions of packed red blood cells (CH) and platelet concentrates have important roles in ensuring increased survival and cure rates in these patients. At the same time, there is a consensus about the development of Brazilian hemotherapy, in particular, highlighted by increased and improved scientific production.

Even with the advances in this area, the study of immunohematology of erythrocytes, fundamental to transfusion safety, remains one of the most sensitive and vulnerable links in the blood transfusion system as the tests are performed at the end of the system in transfusion agencies (TA) that are often isolated in small hospitals or towns. Despite knowledge on erythrocyte immunohematology being available for more than 100 years and being duly regulated by Brazilian transfusion legislation,<sup>(1)</sup> we still see today nonconformities in the implementation of pre-transfusion testing that can affect the transfusional safety of packed red blood cells. This was observed in a soon-to-be-released study designed to evaluate the effectiveness of TA in the state of Minas Gerais (Moraes-Souza H, personal communication).

Thus, the mandatory employment of easy-to-use immunohistochemical techniques to test erythrocytes<sup>(1)</sup> has resulted in marked reductions in rates of alloimmunization in patients submitted to multiple transfusions of packed red blood cells.<sup>(2)</sup> On the other hand, Brazilian legislation does not rule in regards to the effectiveness of platelet concentrate transfusions and platelet immunohematology. And, while the international literature reports high refractoriness and alloimmunization rates in platelet transfusions,<sup>(3)</sup> little has been published in Brazil on this subject,<sup>(4,5)</sup> with the use of platelet transfusions being surrounded by empiricism.

The emphasis given this subject at the last Brazilian Hematology Congress (HEMO 2009) – through pre-congress courses, conferences and round tables – was significantly higher than in previous years. However, there was not the same reverberation in the scientific production; of the 1216 abstracts submitted, only five (0.41%) were related to this topic: quality control of platelet concentrates, platelet refractoriness, clinical indication, alloimmunization and HPA (Human Platelet Antigen) genotyping.<sup>(6)</sup> One study, undertaken in our service, found a poor platelet increment of 50% and platelet refractoriness in 20% of cases (Ferreira, AA, personal communication).

In light of current knowledge and taking into account the successful experience of America and European countries,<sup>(7)</sup> we believe that a little more commitment of the scientific community, blood transfusion services and Brazilian health authorities will be sufficient to change this disturbing scene. There are more than one million Brazilians registered in the National Registry of Bone Marrow Donors (Radome), many of whom are loyal blood donors. With the consent of these blood and bone marrow donors, why are their HLA (Human Leukocyte Antigen) typing results not available to blood transfusion services? Surely this would further validate public investments in HLA typing of blood donors, who are also candidates for bone marrow donation, as a tiny portion of these actually result in marrow donation.

Whereas approximately 80% of platelet alloimmunizations are due to HLA class I antigens, Brazil will have one of the largest genotyped platelet donor banks. In pursuit of excellence in transfusion medicine and, above all, efficiency, it is also essential to standardize techniques of HPA genotyping and immunophenotyping. The training of regional reference centers is essential.

Therefore protocols for the proper identification of platelet refractoriness and selection of donors should be proposed and implemented urgently to guide the physician in the most appropriate clinical conduct with effective treatment aimed at validating the use of platelet concentrates. Attaining this goal will not only increase the safety of platelet transfusions, but will place Brazil on the same level of the so-called developed countries with regards to transfusion medicine.

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