



World Pulmonary Hypertension Day: reflections and planning

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Every year on May 5, there is a worldwide campaign on pulmonary hypertension (PH). The primary goal of this global initiative is to increase awareness and understanding of diseases related to increased pressure in the pulmonary circulation, which remain underdiagnosed and have high morbidity and mortality. Over the last 20 years, there have been notable scientific advances in the field of pulmonary vascular diseases, especially in relation to pulmonary arterial hypertension (PAH) and chronic thromboembolic pulmonary hypertension, with the development of several therapeutic options and strategies. Such advances have resulted in improved quality of life and survival in patients with these serious diseases.

The time is ripe for a critical analysis of the situation in Brazil regarding everything that concerns this group of diseases, from the generation of knowledge in the field to the impact of our initiatives on patient care.

BRAZILIAN THORACIC ASSOCIATION PULMONARY CIRCULATION COMMITTEE

The *Sociedade Brasileira de Pneumologia e Tisiologia* (SBPT, Brazilian Thoracic Association) Pulmonary Circulation Committee was founded in 1996 on the initiative of Professor Sérgio Saldanha Menna-Barreto and has been, over the years, involved in continuing education and in the development of guidelines or recommendations for the management of PAH⁽¹⁾ and chronic thromboembolic pulmonary hypertension.⁽²⁾ An update on the recommendations for the management of PAH is being planned by the current committee.

Our performance in public health policies still faces many challenges, especially in the preparation, together with the Brazilian National Ministry of Health, of *protocolos clínicos e diretrizes terapêuticas* (PCDT, clinical protocols and therapeutic guidelines) for PH. The last PCDT for PH was released in 2014. Such PCDT also depend on the incorporation of new technologies into the *Sistema Único de Saúde* (SUS, Brazilian Unified Health Care System) by the Brazilian National Commission for the Incorporation of Technologies into the SUS. Currently, there are 16 drugs approved for the treatment of PAH in different countries, but only 4 of these drugs are available for use within the SUS in Brazil. Access to combination therapy is heterogeneous in the different states of the country.

REFERRAL CENTERS

The first referral centers for the treatment of PH emerged as a result of lung transplant programs that were being

created in Brazil. Patients with PH began to be referred to these transplant centers, making the organization of specific care for this clinical condition necessary. The evolution towards the construction of dedicated PH treatment centers was natural after that and was certainly encouraged by the emergence of therapeutic options years later.

In 1998, with the establishment of the University of São Paulo (USP) referral center, the first internship in diseases of pulmonary circulation was incorporated into the mandatory curriculum for a pulmonary medicine residency program. Subsequently, specific areas of study on pulmonary circulation were incorporated into graduate programs at both USP and the Federal University of São Paulo, and the training of physicians who would later establish referral centers in other regions of the country began.

In 2004, institutions that already had dedicated PH patient care units held their first meeting: USP *Hospital das Clínicas* and Heart Institute; Federal University of São Paulo *Hospital São Paulo*; State University at Campinas *Hospital de Clínicas*; São Paulo Hospital for State Civil Servants; Dante Pazzanese Hospital; Federal University of Rio de Janeiro *Hospital do Fundão*; Federal University of Rio Grande do Sul *Hospital das Clínicas*; Santa Casa Sisters of Mercy Hospital of Porto Alegre; Júlia Kubitschek Hospital of the Hospital Foundation of the State of Minas Gerais, in Belo Horizonte; and University of Pernambuco PROCAPE. Currently, there is at least one referral center in most Brazilian state capitals and in the Federal District of Brasília. However, lung transplantation, thromboendarterectomy, and pulmonary angioplasty are therapeutic modalities that are performed in a few centers only.

RESEARCH AND INTERNATIONALIZATION

Brazil has gained a prominent position in research on different forms of PH over the last 20 years, both in terms of pathophysiology studies and in terms of clinical and epidemiological studies.

There are several examples of the participation of Brazil in this scenario. Perhaps the most striking example is with regard to schistosomiasis-associated PAH. Most of the existing knowledge about this condition, which is one of the most prevalent causes of PAH in the world, comes from our country. From the studies of Professor Chaves in the 1950s and 1960s to the present day, research in Brazil has characterized this form of PAH from a clinical, functional, hemodynamic, radiological, and

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epidemiological standpoint.⁽³⁻⁷⁾ Groups with different expertise have been created in the country, exploring more specific areas of knowledge about diseases of pulmonary circulation and creating an environment very conducive to collaboration.

In addition, the establishment of different referral centers in various regions of Brazil has made it possible to expand not only access to existing therapeutic alternatives, but also national participation in several clinical studies for the development of such alternatives, including our country in the global clinical research scenario in a very significant way. The first national clinical trial of drugs to treat PAH began in 2002, and participation in international multicenter clinical trials began as early as in 2003. Since then, virtually all new drugs have been developed with the participation of national researchers, not only through the inclusion of a significant number of patients in highly relevant clinical trials,^(8,9) but also through the development of several of the protocols for those. Therefore, our country has objectively contributed to the world having 16 drugs currently approved for the treatment of PAH.

Our country, represented by Professor Rogério Souza, has also had outstanding participation in different world symposiums on PH, initially as a listener in 1998, as

part of the working groups in 2003 and 2008, in the coordination of groups in 2013, and in the general coordination of the 2018 world symposium.⁽¹⁰⁻¹²⁾

CHALLENGES

Brazilian physicians and researchers in the field of pulmonary circulation have contributed markedly in various fronts of action, providing better health care for patients and increasing the available scientific knowledge. Nevertheless, the challenges are great. It is necessary to establish more integrated health care research networks, sharing data and initiatives that make it possible to extend PH patient care to all regions of the country and to carry out a greater number of studies that represent all the existing diversity. To that end, it is urgent that unified databases be created and public policies for diagnosis and treatment be developed on the basis of the latest information on diagnostic strategies and therapeutic options. The SBPT, which has been prominent since the inception of the field of pulmonary circulation in Brazil, plays a fundamental role as a guide and motivator for the joint efforts of all pulmonologists working for the benefit of patients with different forms of PH in this new moment.

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