## **REVIEW**

# A REVIEW OF CARDIOPULMONARY RESEARCH IN BRAZILIAN MEDICAL JOURNALS: CLINICAL, SURGICAL AND EPIDEMIOLOGICAL DATA

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Research in the field of cardiopulmonary disease in Brazil has been very active in recent decades. The combination of PUBMED, SCieLO, open access and online searching has provided a significant increase in the visibility of Brazilian journals. This newly acquired international visibility has in turn resulted in the appearance of more original research reports in the Brazilian scientific press. This review is intended to highlight part of this work for the benefit of the readers of "Clinics." We searched through PUBMED for noteworthy articles published in Brazilian medical journals included in the Journal of Citation Reports of the Institute of Scientific Information to better expose them to our readership. The following journals were examined: "Arquivos Brasileiros de Cardiologia," "Arquivos Brasileiros de Endocrinologia e Metabologia," "Brazilian Journal of Medical and Biological Reviews," "Jornal Brasileiro de Pneumologia," "Jornal de Pediatria," "Revista Brasileira de Cirurgia Cardiovascular," "Revista da Associação Médica Brasileira," Revista da Escola de Enfermagem U.S.P." and "São Paulo Medical Journal." These journals publish original investigations in the field of cardiopulmonary disease. The search produced 71 references, which are briefly examined.

KEYWORDS: Cardiology; Pneumology; Clinical research; Surgery; Epidemiology.

#### INTRODUCTION

Research in the field of cardiopulmonary disease in Brazil has been very dynamic over recent decades. The combination of PUBMED, SCieLO, open access and internet searching has led to an increase in the visibility of Brazilian scientific journals. This in turn has produced a significant proportion of original research reports into the Brazilian scientific press with this newly acquired international visibility.

This review is intended to highlight some of these studies for the benefit of the readers of CLINICS. We have therefore searched through PUBMED for significant articles in the field of cardiopulmonary disease published in Brazilian journals and included in the Journal of Citation Reports of the Institute of Scientific Information to better expose them to our readers.

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#### **METHODS**

An online search was conducted through PUBMED for articles published in Brazilian journals on cardiopulmonary research that are indexed in the Journal of Citation Reports of the Institute for Scientific Information. The following journals were examined: "Arquivos Brasileiros de Cardiologia," "Arquivos Brasileiros de Endocrinologia e Metabologia," "Brazilian Journal of Medical and Biological Reviews," "Jornal Brasileiro de Pneumologia," "Jornal de Pediatria," "Revista Brasileira de Cirurgia Cardiovascular," "Revista da Associação Médica Brasileira," Revista da Escola de Enfermagem U.S.P." and "São Paulo Medical Journal." Most of the articles reviewed were published in 2009. This search produced a total of 71 articles, which were divided into four categories: clinical cardiology, cardiac surgery, pneumology and epidemiology. The articles are summarized under these headings.

Clinical cardiology. The importance of exercise for cardiac function was addressed by investigators who reported on the safety of the six-minute walk-test for heart transplantation candidates (Cipriano et al)<sup>1</sup> and on left ventricular systolic function (Berisha et al.).<sup>2</sup> The circulatory response to a 50-meter walk in acute coronary syndrome was presented by Dias et al.<sup>3</sup> Furtado et al. reported on blood pressure measurements during aerobic exercise in cardiac rehabilitation,<sup>4</sup> whereas Oliveira et al. reported on the effect of the walk test on the length of hospital stay for cardiac surgery patients.<sup>5</sup> The relationships between fitness, waist circumference and hypertension in elderly Brazilian women were investigated by Krause et al.<sup>6</sup> Pelegrino et al. studied the influence of lean body mass on cardiopulmonary repercussions during the six-minute walk test in patients with chronic obstructive pulmonary disease (COPD).<sup>7</sup>

Coronary disease was covered in four reports. Silvério et al. conducted a gender-specific evaluation of coronary disease patients' self-esteem and social support. Barbirato studied the use of resting myocardial scintigraphy during chest pain to exclude the diagnosis of acute myocardial infarction. Pesaro et al. investigated the effects of leukocytes and glycemia on the prognosis of patients with acute myocardial infarction. Finally, Santos et al. evaluated a new risk score for non-ST-segment elevation acute coronary syndrome.

Heart failure was discussed in five different papers. Del Carlo et al. described the relevance of cardiac troponin T for risk stratification. <sup>12</sup> Santos analyzed the quality of life in this group of patients. <sup>13</sup> Savioli et al. examined the importance of angiotensin-converting enzyme inhibitors and plasma B-type natriuretic peptide levels in elderly patients with heart failure, <sup>14</sup> while Munhoz correlated microneurography and venous occlusion plethysmography with prognosis. <sup>15</sup> Margoto et al. examined the clinical and psychosocial features of heart failure patients admitted for clinical decompensation. <sup>16</sup>

The use of echocardiography as a diagnostic tool was discussed in two papers. Cury et al. addressed its safety,<sup>17</sup> and Vieira et al. assessed its utility for measuring left ventricular ejection fraction.<sup>18</sup>

Aidar et al. analyzed the effect of sleep apnea on the heart rates of COPD patients. <sup>19</sup> Arteaga analyzed the prognostic value of the collagen volume fraction in hypertrophic cardiomyopathy. <sup>20</sup> Atik described the clinical progress of patients with small ventricular septal defects. <sup>21</sup> Costa et al. showed that body mass index has a good correlation with proatherosclerotic profile in children and adolescents. <sup>22</sup> Sa et al. described the effects of conventional ventricular stimulation on patients with normal ventricular function. <sup>23</sup> Barbaro and Silva discussed the cardiovascular complications in acquired immunodeficiency syndrome. <sup>24</sup>

The interaction of diabetes and hypertension was the subject of Silva et al., who examined the relevance of

abdominal fat and insulin resistance to arterial hypertension in non-obese patients,<sup>25</sup> of Cobas et al., who described the development of type 1 diabetes into hypertension,<sup>26</sup> and of Rosa et al., who analyzed the effects of antihypertensive drugs in obese women.<sup>27</sup>

Cardiac surgery. This topic was the subject of 16 original publications. Sadala et al. described their experience with heart transplantation in patients with Chagas' disease.<sup>28</sup> Rocha and Silva et al. analyzed the outcome of surgical mitral valve repair in children with rheumatic fever.<sup>29</sup> Santana Filho evaluated patients undergoing mitral valve replacement with crossed papillopexy with echocardiography.<sup>30</sup> Salerno et al. described the results of beating heart mitral valve surgery via the trans-septal approach.<sup>31</sup> Dalva et al. described initial results of intermittent annular reduction with Alfieri's repair for the treatment of mitral insufficiency in children.<sup>32</sup> A midterm follow up of patients undergoing mitral and aortic valve replacement with the St. Jude Medical valve was the subject of a study by Rodrigues et al.,33 while De Bacco et al. discussed risk factors for hospital mortality in valve replacement with a mechanical prosthesis.34

Coronary artery bypass surgery was the topic of four separate studies: Atik et al. described indications for and results of the use of the axillary artery for cardiopulmonary bypass.<sup>35</sup> Brito et al. surveyed risk factors for the development of acute renal failure following cardiopulmonary bypass.<sup>36</sup> Silva et al. examined late angiographic grafting patency in patients with recurrent symptoms,<sup>37</sup> while Piegas et al. described the results of myocardial revascularization surgery (MRS) in the national health system.<sup>38</sup> We also tracked an interesting study by Avila et al. on maternal and fetal prognosis as well as outcome of cardiac surgery during pregnancy.<sup>39</sup> Geovanni analyzed the use of chemoprophylaxis for atrial fibrillation following cardiac surgery. 40 Helito et al. discussed quality of life in heart transplant candidates.<sup>41</sup> Tirapelli et al. described the occurrence of apoptosis in human saphenous vein grafts in the restoration of blood flow through coronary bypass surgery.<sup>42</sup> Vieira et al. analyzed the hydrodynamic profiles of different roller pumps models used for cardiopulmonary bypass.<sup>43</sup>

**Pneumology.** This field was covered in 16 original research articles. Exercise was again the most frequent theme. Ferreira et al. analyzed respiratory rehabilitation in COPD in the transition from exercise training to real life. <sup>44</sup> Pelegrino et al. examined the influence of lean body mass on cardiopulmonary repercussions during the six-minute walk test in patients with COPD. <sup>7</sup> Ziegler et al. looked at predictors of oxygen desaturation during the six-minute

walk test in patients with cystic fibrosis.<sup>45</sup> Oliveira et al. reviewed the relationships between the walk test, pulmonary function tests and length of hospitalization in cardiac surgery patients.<sup>5</sup> Bertolace et al. studied the association between obesity and asthma among teenagers.<sup>46</sup> Simões et al. assessed the prevalence of reduced respiratory muscle strength in institutionalized elderly people.<sup>47</sup> Sleep desaturation and its influence on arterial pressure in COPD patients were the subjects of a study by Aidar et al.<sup>19</sup> Malbouisson et al. showed that lung hyperinflation stimulates the release of inflammatory mediators in spontaneously breathing subjects.<sup>48</sup>

The association between nutritional status measurements and pulmonary function in children and adolescents with cystic fibrosis was analyzed by Chavez et al.<sup>49</sup> Bandeira et al. demonstrated the prevalence of gastro-esophageal reflux disease in patients with idiopathic pulmonary fibrosis.<sup>50</sup> Costa et al. described the role of inflammatory cells and their mediators in COPD pathogenesis.<sup>51</sup> Perrechi and Ribeiro surveyed the effort to integrate tuberculosis

treatment between hospitals and public health care clinics in the city of Sao Paulo, Brazil.<sup>52</sup> Cataneo et al. described the occurrence of active tuberculosis in surgical patients with negative preoperative sputum smear results.<sup>53</sup> Parra et al. studied the occurrence of systemic sclerosis, idiopathic interstitial pneumonia and histomorphometric differences in lung biopsies.<sup>54</sup>

**Epidemiological studies.** The incidence of metabolic syndrome has been examined in multiple Brazilian studies. <sup>55-60</sup> The prevalence of congenital heart disease in patients with Down's syndrome was reported. <sup>61</sup> Two different studies evaluated cardiovascular mortality in different parts of Brazil. <sup>62, 63</sup> The profile of newborns who underwent cardiac surgery in a private hospital in the city of Sao Paulo was described. <sup>64</sup> Other studies examined diseases of the circulatory system, asthma, tuberculosis, hypertension and smoking in specific geographic settings. <sup>65-71</sup>

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