

## Evaluation of articles on pulmonology published in Brazilian journals other than the *Brazilian Journal of Pulmonology*\*

Avaliação dos artigos de pneumologia publicados em periódicos brasileiros além do *Jornal Brasileiro de Pneumologia*

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### Abstract

In Brazil, research on pulmonology has become increasingly more visible in recent years. In addition to the *Brazilian Journal of Pulmonology*, other journals have contributed to that by publishing relevant articles in this area. The objective of this article was to briefly report the most relevant studies on pulmonology that were published in other important Brazilian journals between 2009 and 2010. Altogether, there were 56 articles related to the various subareas that compose the field of respiratory diseases.

**Keywords:** Pulmonary medicine; Research; Brazil.

### Resumo

A pesquisa em pneumologia no Brasil tem apresentado progressivo destaque nos últimos anos e, além do *Jornal Brasileiro de Pneumologia*, outros periódicos têm contribuído com a publicação de manuscritos relevantes nessa área. Esse artigo teve por objetivo descrever resumidamente os principais trabalhos publicados no biênio 2009-2010 em pneumologia em outros importantes periódicos nacionais. Foram publicados 56 artigos das diferentes subáreas das doenças respiratórias.

**Descritores:** Pneumologia; Pesquisa; Brasil.

### Introduction

Brazilian clinical and experimental research on pulmonology has increasingly gained greater national and international exposure in recent years. The *Brazilian Journal of Pulmonology* is the major source for the dissemination of the national scientific output in this area.

Brazilian researchers presented approximately 550 studies at the leading international conferences in the field (*American Thoracic Society, American College of Chest Physicians, and European Respiratory Society*) between 2008 and 2009. A large number of studies were also presented at national and regional events in the same period. The *Brazilian Journal of Pulmonology* published 120 articles in 2009 and 82 articles in 2010. Part of the national output was published in journals outside Brazil, but other national journals also disseminated Brazilian research in the field of respiratory diseases in this period.

National journals with high visibility have been indexed in internationally recognized databases, such as SciELO, Medline, and the *Institute for Scientific Information Journal Citation Reports*. Traditional and important journals, such as the *Journal of the Brazilian Medical Association, Clinics* (Sao Paulo), the *Brazilian Archives of Cardiology*, and the *Brazilian Journal of Medical and Biological Research*, have contributed to that by publishing relevant work.

Therefore, the objective of this special article was to briefly report the most relevant studies on pulmonology that were published in Brazilian journals other than the *Brazilian Journal of Pulmonology* between 2009 and 2010 in order to disseminate the research that has been produced in Brazil. Articles focusing on endoscopic or infectious aspects and articles on thoracic surgery were excepted.

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## Methods

We searched the PubMed and SciELO databases for articles on pulmonology published between 2009 and 2010 in the following journals indexed in the *Institute for Scientific Information Journal Citation Reports: Journal of the Brazilian Medical Association, Clinics* (Sao Paulo), *Brazilian Archives of Cardiology*, and *Brazilian Journal of Medical and Biological Research*. Altogether, there were 56 articles, which were divided by content into nine topics (Table 1).

## Asthma

In the *Brazilian Journal of Pulmonology*, 15% of the articles published in the two years evaluated were related to asthma. In the other journals analyzed, there were 6 articles. Saraiva-Romanholo et al. demonstrated that non-asthmatic patients who developed bronchospasm intraoperatively show increased exhaled nitric oxide concentrations.<sup>(1)</sup> Yanic et al. evaluated the influence of obesity on bone mineral density in postmenopausal asthma patients undergoing treatment with inhaled corticosteroids and concluded that obesity was not a protective factor against the development of osteoporosis in this group.<sup>(2)</sup> The presence of associated diseases, such as rhinitis (symptoms are present in 90% of cases), gastroesophageal

reflux disease (symptoms are present in 70% of cases), and bronchiectasis (symptoms are present in 25% of cases), is common in asthma patients, according to Bisaccioni et al., and this often contributes to refractoriness to asthma treatment.<sup>(3)</sup> In a review article, Giavina-Bianchi et al. described the principal characteristics of difficult-to-control asthma and a protocol for its management.<sup>(4)</sup>

Dalcin et al. studied the prevalence of controlled asthma, partially controlled asthma, and uncontrolled asthma (56%, 27%, and 17%, respectively) and found that greater asthma severity, limited availability of medications, and no inhaled corticosteroid use were factors associated with poor disease control.<sup>(5)</sup> In addition, Dalcin & Perin published a review article on the assessment and management of acute asthma in the emergency room.<sup>(6)</sup>

## Pleura

In the only published article on this subject, Vaz et al. highlighted the important role that the coagulation system plays in the development of pleural diseases and demonstrated that coagulation tests make it possible to separate exudates from transudates, although they are unsuccessful in differentiating exudates.<sup>(7)</sup>

## Intensive care

The area of intensive care and mechanical ventilation was addressed in 5% of the articles published between 2009 and 2010 by the *Brazilian Journal of Pulmonology*. In the four journals evaluated, there were 9 articles in the period. Most studies focused on the role of positive end-expiratory pressure (PEEP) during ventilatory support. Torquato et al. evaluated the interaction between intra-abdominal pressure and PEEP in patients on mechanical ventilation and demonstrated that increased intra-abdominal pressure increases PEEP.<sup>(8)</sup> A randomized experimental study in rats, published by Aikawa et al., investigated the effects of different PEEP levels on mesenteric microcirculation and concluded that higher PEEP levels ( $\geq 10$  cmH<sub>2</sub>O) cause impaired mesenteric flow.<sup>(9)</sup> Rieder et al. compared the use of a T-tube with the use of a PEEP of 7 cmH<sub>2</sub>O in weaning patients from mechanical ventilation and concluded that the use of the latter caused

**Table 1** - Distribution by subject of the major articles on pulmonology published between 2009 and 2010 in Brazilian journals other than the Brazilian Journal of Pulmonology.

Subject	Number of articles	References
Asthma	6	1-6
Pleura	1	7
Intensive care	9	8-15
Sleep	5	16-20
Physiology, exercise, and rehabilitation	12	21-32
COPD	8	33-40
Pathology	3	41-43
CT	2	44-45
Occupational medicine	1	46
Pulmonary thromboembolism	2	47-48
Pulmonary hypertension	3	49-51
Lung cancer	3	52-54
Smoking	2	55-56

an increase in the work of breathing, but no changes in other cardiorespiratory variables.<sup>(10)</sup> In the article published by Sena et al., in which postoperative cardiac patients were evaluated, the use of PEEP (10 cmH<sub>2</sub>O), applied with a face mask, was well tolerated by the patients, there being an increase in right and left ventricular filling pressure, as well as in mean arterial pressure.<sup>(11)</sup> Lanza et al. conducted an experimental study in dogs with oleic acid-induced acute respiratory distress syndrome and found that the use of intermittent PEEP, when combined with recruitment maneuvers, could maintain oxygenation, similarly to the use of constant PEEP.<sup>(12)</sup>

In their study, Camargo et al. described an innovative portable noninvasive method that can be used at the bedside in order to evaluate respiratory-swallowing interactions after orotracheal intubation.<sup>(13)</sup> The review article published by Moro & Módolo evaluated the methods used for reducing the risk of aspiration of gastric contents during orotracheal intubation.<sup>(14)</sup> Souza & Carvalho evaluated the frequency and major types of complications of orotracheal intubation in pediatrics, as well as their causes. The major complications were trauma, hypoxemia, and bradycardia, which were mostly due to inappropriate tube size and to lack of experience and training of the professional.<sup>(15)</sup>

## Sleep

There were 5 published articles related to sleep-disordered breathing, most of which investigated the association between sleep-disordered breathing and heart diseases. The study by Araújo et al. concluded that the presence of concomitant obstructive sleep apnea syndrome (OSAS) did not increase the number of ischemic episodes or arrhythmias in patients with stable coronary artery disease.<sup>(16)</sup> Ykeda et al. demonstrated that children with congenital heart disease have frequent episodes of apnea and hypopnea, as well as desaturation during sleep.<sup>(17)</sup> In their study, Jesus et al. concluded that the clinical diagnosis of OSAS (as determined by the Berlin questionnaire) in patients with acute coronary syndrome was associated with a higher incidence of cardiovascular events during hospitalization.<sup>(18)</sup>

In their study involving patients with severe OSAS, Neves et al. found that the use of sildenafil worsens OSAS, as well as causing deleterious cardiovascular effects because of the increased parasympathetic tone and affecting the HR variability.<sup>(19)</sup> Pires et al., in a study of drivers engaged in night shift work, contradicted the notion that the sleep pattern of older individuals is more negatively affected than that of younger individuals.<sup>(20)</sup>

## Physiology, exercise, and rehabilitation

In the two years surveyed, approximately 10% of the studies published in the *Brazilian Journal of Pulmonology* addressed physiology, exercise, and rehabilitation. In the four journals evaluated, there were 12 articles related to these subjects. Veiga et al. used the forced oscillation technique in asthma patients, and this allowed the identification of increased respiratory impedance in such patients.<sup>(21)</sup> Using the forced oscillation technique, Tramont et al. demonstrated that, with ageing, there is a reduction in the homogeneity of the respiratory system, especially in individuals over 70 years of age.<sup>(22)</sup> Measurement of PEF by five different meters was compared by Takara et al., who observed that there was no agreement among the devices.<sup>(23)</sup>

Pimenta et al. proposed, on the basis of the use of holter oximetry during the six-minute walk test, a new composite index (designated desaturation-distance ratio) for the assessment of patients with interstitial disease. The desaturation-distance ratio index is obtained by the ratio between the hemoglobin oxygen desaturation area and the six-minute walk distance, being a promising method for the functional assessment of lung diseases.<sup>(24)</sup> By analyzing the six-minute walk distance and the body weight-walk distance product in healthy Brazilians, Iwama et al. developed a reference equation for the assessment of exercise capacity in Brazilians with chronic diseases.<sup>(25)</sup>

There were 3 articles related to the respiratory muscles. In their study, Costa et al. investigated the correlation of anthropometric data with respiratory muscle strength in normal-weight and obese women and demonstrated that bioimpedance and obesity have a direct relationship with respiratory muscle strength.<sup>(26)</sup> Fonseca et al. compared two respiratory

muscle training programs for institutionalized elderly individuals and concluded that the groups trained did not show satisfactory levels of functional autonomy.<sup>(27)</sup> In their article, Ferreira et al. confirmed that preoperative inspiratory muscle training reduced respiratory distress after cardiac surgery, with improvement in FVC and in maximal voluntary ventilation.<sup>(28)</sup>

Silva et al. investigated the relationship of preoperative clinical data and pulmonary function test results with the occurrence of postoperative pulmonary complications.<sup>(29)</sup> Guizilini et al. assessed pulmonary function in the early postoperative period of myocardial revascularization without extracorporeal circulation, comparing conventional median sternotomy and mini-sternotomy. The patients who underwent the less invasive procedure showed better preservation and better recovery of pulmonary function in the postoperative period, as well as a smaller reduction in oxygenation.<sup>(30)</sup> In their study, Ferreira et al. found that the use of incentive spirometry in combination with expiratory positive airway pressure after myocardial revascularization surgery decreases dyspnea and improves quality of life.<sup>(31)</sup>

Malbouisson et al. demonstrated, in a very interesting physiological study, that, even in healthy individuals, there is increased release of inflammatory cytokines after lung hyperinflation maneuvers with the use of continuous positive airway pressure.<sup>(32)</sup>

## COPD

There were 8 articles on COPD. In their review, Costa et al. described the major inflammatory cells, as well as their mediators, involved in the pathogenesis of COPD and also the structural changes triggered.<sup>(33)</sup> Pereira et al. administered immunoglobulin to patients with common variable immunodeficiency and observed significantly reduced airway inflammation and more effective mucus transport by cough.<sup>(34)</sup> In their preliminary study, Dogan et al. demonstrated that the detection of *mdr-1* C>T gene polymorphism correlated with the presence of COPD.<sup>(35)</sup>

Regueiro et al. found that the Body mass index, airway Obstruction, Dyspnea, and Exercise capacity index correlated with treadmill six-minute walk test variables and with reduced upper and lower limb muscle strength in patients

with moderate or severe COPD.<sup>(36)</sup> Aidar et al. observed increased arterial systolic and diastolic pressure in the group of COPD patients with sleep desaturation not induced by apnea, when compared with the control group.<sup>(37)</sup>

In their article, Reis et al. demonstrated that patients with COPD show changes in sympathovagal balance at rest and that autonomic control of HR is associated with inspiratory muscle weakness.<sup>(38)</sup> Sabino et al. concluded that patients with severe COPD who are obese or overweight have increased exercise capacity and increased muscle strength when compared with individuals with the same degree of obstruction who are within or below the normal weight range.<sup>(39)</sup> Dourado et al. analyzed the effects of three different exercise programs (submaximal, low-intensity, and combined training) on patients with COPD and found similar results in terms of muscle strength, degree of dyspnea, and quality of life.<sup>(40)</sup>

## Pathology

There were 3 articles related to pathology. Mascaretti et al. concluded that rabbits exposed to hyperoxia develop fiber network disorganization in the lung parenchyma.<sup>(41)</sup> In their article, Capelozzi et al. demonstrated that the major changes identified in the histopathological analysis of material obtained by lung biopsy from patients with severe acute respiratory distress syndrome secondary to confirmed infection with the influenza A (H1N1) virus were necrotizing bronchiolitis and diffuse alveolar damage.<sup>(42)</sup> Oliveira et al. analyzed histomorphometric and respiratory changes in a rat model of sepsis-induced lung injury in which one study group was treated with pentoxifylline and found that the drug, in combination with mechanical ventilation with low tidal volumes, restored oxygenation and reduced the deleterious effects of the septic process.<sup>(43)</sup>

## CT

There were 2 articles addressing CT-guided fine-needle aspiration biopsy of pulmonary lesions. Guimarães et al. concluded that this approach yields better results in lesions suspected of malignancy, in lesions located in the upper lobes, and in those larger than 40 mm.<sup>(44)</sup> It was also demonstrated that this procedure has a low

risk of complications, pneumothorax being the most common.<sup>(45)</sup>

## Occupational medicine

There was only one study on occupational lung diseases. Boskabady et al. found an increased prevalence of respiratory symptoms and decreased pulmonary function values in Iranian carpenters, when compared with controls.<sup>(46)</sup>

## Pulmonary thromboembolism

There were 2 articles addressing pulmonary thromboembolism (PTE). Terra-Filho et al. reported clinical and hemodynamic characteristics of patients with chronic PTE who were evaluated for thromboendarterectomy. Most patients had significant functional limitation and severely compromised hemodynamic status, with increased levels of brain natriuretic peptide.<sup>(47)</sup> The other article, published by Volschan et al., described a model for stratifying the risk of in-hospital mortality in hemodynamically stable patients with PTE, with good specificity and sensitivity.<sup>(48)</sup>

## Pulmonary hypertension

There were 3 published articles related to pulmonary hypertension. Freitas Jr et al. evaluated the pulmonary and systemic hemodynamic effects of sildenafil as a vasodilator in testing for pulmonary hypertension reversibility in heart transplant candidates and concluded that the drug was effective and safe.<sup>(49)</sup> In addition, Franchi et al. reported the two-year follow-up of pulmonary arterial hypertension patients undergoing sildenafil monotherapy, which led to a decrease in dyspnea and an increase in the six-minute walk distance.<sup>(50)</sup>

In the article published by Machado et al., the most common causes of pulmonary hypertension were idiopathic etiologies, schistosomiasis, congenital heart disease, and chronic PTE. Patients with schistosomiasis were in a better functional class.<sup>(51)</sup>

## Lung cancer

There were 3 published articles in the field of lung cancer. Juliana et al. concluded that the Brazilian Portuguese version of the Functional

Assessment of Cancer Therapy-Lung (FACT-L) and the FACT-L Symptom Index are reliable, as well as being easily and rapidly administered, and can therefore be used for assessing quality of life in lung cancer patients in Brazil.<sup>(52)</sup> In their article, de Meis et al. reported poor survival in lung adenocarcinoma patients with tumor expression of tissue factor and protease-activated receptor-1.<sup>(53)</sup> Santos et al. evaluated the in vitro use of anti-*BCL2* RNA sequences against this protein and mRNA levels of small cell lung cancer cells, as well their effects on cytotoxicity and chemosensitization.<sup>(54)</sup>

## Smoking

There were only 2 articles addressing the subject of smoking. In their study, Souza et al. demonstrated that the Brazilian Portuguese version of the Modified Reasons for Smoking Scale shows a satisfactory factor structure and satisfactory psychometric properties.<sup>(55)</sup> Azevedo et al. described the treatment and follow-up results, including clinical characterization and therapeutic success, in outpatient smokers.<sup>(56)</sup>

## Final considerations

Various articles on pulmonology were published in other important indexed Brazilian journals between 2009 and 2010, contributing to the dissemination of the research related to respiratory diseases published in Brazil. With the exception of infection, the most frequently addressed topics were physiology, exercise and rehabilitation, intensive care, COPD, asthma, and sleep.

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