SPECIAL ARTICLE

The ARCHIVOS Archive, 2005: an Overview of Research Published in ARCHIVOS DE BRONCONEUMOLOGÍA

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Introduction

In 2005, a total of 58 original articles were published in ARCHIVOS DE BRONCONEUMOLOGÍA. The aim of this review is to highlight the most noteworthy results from these articles and to provide the reader with a general overview of the scientific research found in our journal.

Respiratory Insufficiency and Sleep Disorders

Chronic Obstructive Pulmonary Disease

In 2005, chronic obstructive pulmonary disease (COPD) was, once again, the clinical entity that generated the most original articles. Most aspects of this disease were analyzed. It is well-known that nearly two thirds of all costs generated by COPD are due to exacerbations requiring hospitalization. With the aim of reducing the number and duration of hospital admissions for COPD, Diaz Lobato et al[1] studied the effectiveness of a hospital-supervised home hospitalization program for a selected group of patients with COPD exacerbation. Such a program requires the participation of both physicians and home nursing staff; moreover, a certain amount of flexibility is necessary to provide single or multiple home visits. This study showed clearly that there were no differences in therapeutic failure rates between home hospitalization and standard hospitalization groups; this finding demonstrates that domiciliary hospitalization is possible and safe for a certain group of selected COPD patients.

To determine the factors associated with the prescription of drugs to COPD patients, de Miguel Díez et al[2] designed a multicenter Spanish study (IDENTEPOC) of 568 patients. Factors considered included forced expiratory volume in the first second (FEV_1), dyspnea, health-related quality of life, sex, emergency room visits, hospital admissions, age, comorbidity, consultations for COPD, and arterial blood gas analysis. Of these variables, dyspnea and quality of life were the 2 factors associated with more drug prescription.

Quality of life is an important facet of a patient's clinical condition and valid tools should therefore be used to measure it. Martínez García et al[3] analyzed the validity of the Spanish version of the St George's Respiratory Questionnaire for use in clinically stable patients with bronchiectasis. They concluded that it has excellent internal consistency and validity. However, it does have certain structural deficiencies and the content should be reorganized to make it more applicable to patients with bronchiectasis.

Bronchodilators are a first-line treatment for COPD. Baloira Villar and Vilariño Pombo[4] studied, for the first time in Spain, the bronchodilating efficacy of combined salmeterol and tiotropium in patients with moderate-to-severe COPD. This combination was more effective than treatment with either drug alone, at least in terms of lung function improvement. Long-acting bronchodilators are relatively expensive, which is why several cost-effectiveness studies have been carried out. García Ruiz et al[5] compared the cost-effectiveness of tiotropium to salmeterol. Tiotropium was more cost-effective than ipratropium or salmeterol, principally because it reduced the number of hospital admissions.

The main cause of a deteriorating quality of life for COPD patients is limited tolerance for exertion during activities of daily living. Montes de Oca et al[6] studied changes in exercise tolerance, quality of life, and peripheral muscles characteristics after 6 weeks of physical training. They found an increase in the activity of citrate synthase–an oxidative enzyme in the peripheral muscles, together with improvement in the distance covered during the 6-minute walk test; the mean area of muscle fibers was greater, although this increase was not significant. These changes were also associated with improved health-related quality of life, although this improvement could not be explained by the muscle response.

In another study on muscle training, Serón et al[7] evaluated the effect of inspiratory muscle training on muscle strength and quality of life. The experimental group, using a resistive load that was 40% of maximal inspiratory pressure, significantly improved inspiratory

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muscle strength compared to the control group after 1 month. The fact that these differences were not maintained after 2 months suggests that respiratory rehabilitation likely needs to be part of an indefinite program.

Finally, managing a disease as prevalent as COPD requires different types of specialists. Rico-Méndez et al[8] compared the treatment of COPD patients who received specialist care to those under primary care in Mexico. Patients treated by specialists had 57% fewer exacerbations and 39% fewer total days in hospital compared to patients who received primary care.

Respiratory Insufficiency

Oxygen therapy is still the most effective treatment for COPD patients experiencing respiratory insufficiency. However, information on indications and dosage levels for oxygen therapy during activities of daily living is scant. A group of researchers from the Hospital de la Santa Creu i Sant Pau in Barcelona evaluated the efficacy of the 6-minute walk test in assessing ambulatory oxygen therapy.[9] The 6-minute walk test was more effective than ambulatory pulse oximetry, measured during activities of daily living, in detecting exercise-induced oxyhemoglobin desaturation. The oxygen flow established in this test adequately corrected the oxyhemoglobin desaturation of these patients during activities of daily living. Thus, the 6-minute walk test is an excellent instrument for determining the oxygen therapy needs of patients with COPD.

Bruhn et al[10] analyzed the limitations of the technique used to determine hydrogen peroxide levels in the exhaled breath condensate of patients with adult respiratory distress syndrome. They found that the technique had important limitations due to the presence of variable background absorbance, which may be related to particles suspended in the condensate or to substances other than hydrogen peroxide–such as chloride ions–that may have reactive properties.

Respiratory Pathophysiology

To determine the types of functional alterations that occur when individuals climb medium altitude mountains, Compte Torrero et al[11] studied 8 unacclimatized subjects during an ascent of a mountain over 3000 m high. They found that these subjects had reduced pulmonary airflow and volumes at altitudes over 3000 m. The mechanism was pulmonary restriction, which failed to respond to bronchodilator treatment but did respond to acclimatization and descent. The degree of lung restriction is associated with a decrease in arterial oxygen saturation, which suggests the presence of a subclinical pulmonary edema.

The 6-minute walk test is an essential instrument in respiratory rehabilitation programs. Tramontini et al[12] analyzed variability in test conditions for the test at 49 pulmonary rehabilitation centers in Latin America and on the Iberian Peninsula. They found that the 6-minute walk test is used in all the health care facilities they surveyed on both sides of the Atlantic, although the way the test is conducted varies greatly. Given that international guidelines are available, the authors suggest that all centers that perform this test should gradually adapt their practice to these guidelines.

Sleep Apnea-Hypopnea Syndrome

Two important articles were published on the diagnostic protocol for sleep apnea-hypopnea syndrome (SAHS). Candela et al[13] analyzed the validity of a cardiorespiratory polygraphy device in the diagnosis of SAHS. They studied 103 patients with suspected SAHS and found an overall agreement of 0.97 between polysomnography and polygraphy (BITMED NGP 140). The highest rates of sensitivity and specificity (both methods were higher than 95%) were observed in patients who registered more than 30 respiratory events per hour on polysomnography. Aguirregomoscorta et al[14] compared the results of applying the 1992 and 2003 versions of the guidelines published by the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) for identifying respiratory events in polysomnography tests.[14] They found significant differences in the sleep apnea-hypopnea index (AHI) (mean variation of AHI values: 11.8 points) depending on which guideline was followed. In that study, patients with mild-to-moderate SAHS showed the largest variation in AHI. They concluded that the most recent guidelines were better at detecting respiratory events on the same polygraph and they favor a discussion on the possibility of changing the diagnostic cutoff point for SAHS in accordance with the new diagnostic criteria. Such changes may have treatment implications in that more SAHS patients would be eligible for continuous positive airway pressure treatment under the new guidelines.

Asthma

The increasing prevalence of asthma in developed countries is causing serious economic and health problems. The health care costs associated with in-hospital asthma treatment were analyzed in an article by Borderías Clau et al.[15] They reported that costs increased in line with the degree of severity of the attack; the mean cost of an asthma attack treated at a hospital emergency department was €1555 (most of which reflected direct costs). One notable finding in this study was the indirect association between the use of long-acting β_2-agonists and the risk of severe exacerbations.

Insufficient asthma knowledge has been associated with inadequate disease management and a consequent increase in morbidity. Rodríguez Martínez et al[16] developed and validated an asthma knowledge questionnaire for use with parents and guardians of asthmatic children. They concluded that the questionnaire was a valid instrument for measuring the

level of asthma knowledge, although a certain selection bias may have been present since the sample was composed of parents referred to an asthma education program.

The ability to perceive the severity of an asthma exacerbation is important for proper self-management of the disease. To assess dyspnea perception in a group of asthmatic patients in stable situation after acute bronchoconstriction, Martínez-Moragón et al[17] studied 93 patients with moderate asthma. When airway constriction was provoked, 13% of these patients had poor perception of the dyspnea, while 24% over-perceived the dyspnea. Perception of dyspnea during periods of stability and after bronchoconstriction were independent phenomena. Patients who perceived dyspnea consistently in both acute and chronic situations used emergency services less often. No association was found between consistent perception of dyspnea and anxiety-depression or health-related quality of life. In a related study, this same group assessed the prevalence of hyperventilation syndrome in patients treated for asthma in a respiratory medicine outpatient clinic.[18] Of these patients, 36% had both asthma and hyperventilation syndrome. Hyperventilation syndrome was associated with high levels of basal dyspnea and anxiety, but not with more severe asthma. Given these findings, the significance of the presence of hyperventilation syndrome is unclear and further long-term studies are needed to clarify its importance.

Belda et al[19] studied the protein characteristics of mucosal secretions during asthma attacks. They compared the degree of protein extravasation in the bronchial lumen of 3 different groups of subjects: patients with stable asthma, patients with exacerbated asthma, and a control group. Their conclusion was that altered vascular permeability in the lungs during the acute phase can be measured through albumin levels in induced sputum. Protein extravasation was significantly greater during the acute phase of asthma compared to the stable phase and was also associated with the degree of bronchial obstruction. These findings open up new possibilities for improving the diagnosis of asthma.

In 2005, results from the Spanish arm of the now-classic European study, the International Study of Asthma and Allergies in Childhood (ISAACS) Phase III, were published in Archivos de Bronconeumología in an article that evaluated geographical variations in the prevalence of asthma symptoms in Spanish children and adolescents.[20] Geographic variation is established mainly during early childhood, with a greater prevalence of symptoms on Spain's northern Atlantic coast compared to the central or eastern regions.

Smoking

Last year, Archivos de Bronconeumología continued to publish original articles on various aspects of smoking addiction. Both physical and psychological dependence needs to be considered in the diagnosis of smoking addiction. Nerín et al[21] used the Glover-Nilsson test to evaluate the psychological aspects of quitting in a large series of smokers at a smoking cessation clinic. They found an inverse relation between age and Glover-Nilsson score; that is, younger patients had higher scores. Lower success rates on treatment completion were associated with greater psychological dependence, as measured by the Glover-Nilsson test. This same team of researchers presented results from a novel comprehensive program to prevent and treat smoking addiction in the workplace.[22] The program prohibited smoking in the workplace but, at the same time, also provided optional smoking cessation treatment. Prevalence was reduced by 4% and 80% of patients showed good adherence to the therapy.

The veracity of the responses given by smokers undergoing tobacco cessation treatment is a highly debated topic in terms of diagnosis and follow up. In a multicenter study of 904 smokers who underwent smoking cessation treatment, Barrueco et al[23] confirmed that the reliability of the responses given by smokers trying to quit is high and, as a consequence, while measurement of carbon monoxide to verify abstinence is advisable, it is not essential.

Determining which factors are associated with smoking addiction in adolescents is a high priority area of research. Soria-Esojo et al[24] assessed a smoking cessation intervention in secondary school students in the Spanish province of Malaga. They found that, among 13 to 18 year olds, the smoking prevalence for girls was double that of boys. They also reported that health education was useful for improving awareness of the problems related to tobacco use because it caused a change in attitude among adolescent smokers with regard to their plans to use tobacco in the future.

Oncology

Two articles were published last year on the epidemiological characteristics of lung cancer in Spain. Santos-Martinez et al[25] described the clinical and histological characteristics of patients treated for lung cancer at a university hospital over a 5-year period and compared them to a historical control group. They reported that squamous cell carcinoma is still the most common type of lung cancer, followed by adenocarcinoma. For women, adenocarcinoma continues to be the most common histologic subtype and it has also shown the greatest percentage increase among the different subtypes. One notable aspect of this study was the continued association between squamous cell lung carcinoma and laryngeal cancer.

A group of researchers from the Spanish region of Asturias carried out a retrospective multicenter study of the characteristics and natural history of a large series of lung cancer patients.[26] They reported that the real incidence of lung cancer in their study may have been underestimated. The prevalence of lung cancer was highest in male smokers. The most common subtype in this series was squamous cell carcinoma. However, the prevalence of adenocarcinoma–the most prevalent subtype in women–was still increasing. At diagnosis,

most patients were at advanced stages of disease (IIIB and IV). TNM stage and the type of treatment received were still the variables most closely associated with survival.

Clinical Research

Pulmonary Circulation

Information on lung function in various types of pulmonary arterial hypertension (PAH) is scant and there is no information at all on individuals with toxic oil syndrome who develop PAH. Martín Escribano et al[27] studied lung function in a large series of 120 patients with idiopathic PAH or hypertension associated with human immunodeficiency virus (HIV), cardiac shunt, chronic pulmonary embolism, or portal hypertension. No significant associations were found between lung function and hemodynamic variables in the different types of patients, except for those with toxic oil syndrome. This subset had a lower mean age and a positive association was found between the degree of pulmonary vascular resistance and the highest functional class on the New York Heart Association scale.

Syncope is considered to be an indicator of poor prognosis in pulmonary embolism. Jiménez et al[28] evaluated the incidence of syncope in the presentation of pulmonary embolism and its influence on prognosis in a prospective series of patients who came to the emergency department with suspected pulmonary embolism. Syncope was the initial manifestation of pulmonary embolism in 22% of patients in that series. The presence of syncope did not, however, imply an increased risk of death or recurrence. Type of treatment and duration of common secondary prophylactic therapy were not associated with a worse prognosis in patients whose first symptom for pulmonary embolism was syncope. These findings are significant and seem to partially contradict previously published articles.

Early confirmation or exclusion of pulmonary embolism in acute patients in the emergency department has important implications for prognosis; in this context, Friera-Reyes et al[29] undertook a study of the usefulness of determining D-dimer levels by fast enzyme-linked immunoabsorbent assay (ELISA). They concluded that pulmonary embolism can be ruled out when D-dimer levels measured by fast ELISA are less than 0.5 µg/mL. Nevertheless, the authors recommend that each hospital validate and establish its own diagnostic cutoff points before accepting these conclusions.

Occupational Diseases

Exposure to industrial and environmental contaminants continues to be a significant cause of lung morbidity and mortality. Galán Dávila et al[30] carried out a study in a region with a high proportion of the population working in shoe manufacturing to determine whether working in this sector is a risk factor for lung cancer. They also evaluated possible differences in histological distribution by degree of exposure. Their findings showed that working in this sector was not a risk factor for developing lung cancer. Moreover, they found no differences in the distribution of histological patterns according to the degree of exposure to products related to shoe manufacturing.

Tuberculosis and Respiratory Infections

Cystic Fibrosis

Given the increased survival rate for patients with cystic fibrosis, pneumologists are becoming increasingly involved in their treatment, and this involvement is reflected in research activity. Gutiérrez et al[31] studied the inter- and intraobserver agreement for the Brasfield and Chrispin-Norman Chest Radiography Scoring Systems and their correlation with the clinical data and results of spirometry in a series of patients with cystic fibrosis. They found that inter- and intraobserver agreement between the 2 scoring systems was excellent when applied to the chest x-rays of adult cystic fibrosis patients. The scores for certain lung function variables (FEV_1 and forced vital capacity) also showed good correlation.

Girón et al[32] studied bacterial colonization in patients with cystic fibrosis. That study analyzed the nontuberculous mycobacterial content in the sputum of patients during stable phase and compared the characteristics of patients with and without colonization to establish the clinical implications. Nontuberculous mycobacteria were isolated in 25% of the adults. The authors proposed establishing more concrete criteria for the diagnosis of nontuberculous mycobacterial infection than those published by the American Thoracic Society (ATS). Specifically, in their study, the diagnosis of infection was confirmed by multiple positive stains or cultures, pulmonary symptoms, evidence of progression of lesions on chest x-rays, or a lack of clinical response to antibiotic treatment against colonizing bacteria. They observed no significant differences in Brasfield or Shwachman scores and lung function parameters between patients with nontuberculous mycobacteria isolations and those without such isolations. Because the differential clinical expression of these bacteria is scant, the authors recommend active testing for subclinical infection.

Pneumonia

Little is known about the natural history of pneumonia in COPD patients. Merino-Sáchez et al[33] emphasized prognosis in their assessment of pneumonia in this setting. The overall incidence of pneumonia in their patients was 55 cases per 1000 person-years, and the incidence was higher in patients with severe airflow obstruction (FEV_1<40% of predicted). The risk of developing pneumonia was associated with the presence of heart disease and a low body mass index. More than half of the COPD patients with community-acquired

pneumonia were classified in groups IV and V on the Fine risk scale. Given the elevated mortality rate (35%) for patients in group V, these types of patients should probably be admitted to intensive or intermediate care.

Capelastegui et al[34] studied possible variability in the treatment of patients hospitalized for community-acquired pneumonia as a function of the medical specialty of the attending physicians at 4 hospitals in the Spanish province of Vizcaya. They found that length of stay was shorter for patients treated by respiratory medicine or infectious diseases departments and there were significant differences in hospital mortality rates at 30 days between patients treated by those specialists compared to those treated by internal medicine or other departments. According to the authors, some of the observed variation may be due to differences in the use of antibiotics.

In Chile, Díaz et al[35] evaluated the clinical characteristics, course, and treatment of a series of adult patients with severe community-acquired pneumonia. In addition, variables potentially predictive of mortality were analyzed. In that series of 113 cases, 1 of every 4 patients hospitalized for community-acquired pneumonia was admitted to the intensive care unit (ICU). This subset of patients had advanced age and multiple concomitant diseases. That study confirmed that the specificity of the Fine scale was low for predicting the need for ICU admission. Univariate analysis showed that shock and the need for mechanical ventilation were associated with higher risk of death. Acute renal failure and glycemia above 300 mg/dL were associated with higher mortality in the logistic regression model. In summary, this study showed that advanced age, comorbidity, and complications are predictors of death in community-acquired pneumonia.

Tuberculosis

To evaluate possible changes in the presentation and clinical characteristics of tuberculosis over time, Calpe et al[36] analyzed changes in the epidemiological characteristics of tuberculosis in a public health area in the Spanish autonomous community of Valencia from 1987 through 2001. In spite of the HIV pandemic, the incidence of tuberculosis decreased over this period. However, the hospitalization rate for tuberculosis was high and changes in the location of pulmonary infiltrates–probably due to the HIV pandemic–were observed. The authors of that study stressed that, at least during the period studied, immigration had no significant effect on the tuberculosis rate.

Researchers at the Hospital de Basurto in the Spanish province of Vizcaya have extensive experience in treating patients with atypical mycobacteria. In a clinical and epidemiological study of disease caused by *Mycobacterium kansasii* in the metropolitan area of Bilbao, Spain, Leal Arranz et al[37] reported that 98% of isolated strains in the 220 subjects studied were genotype 1. The disease was more common in males and HIV negative individuals. The most common radiographic findings were cavitation, the presence of pulmonary infiltrates, and right upper lobe involvement. The clinical and radiographic characteristics were similar to those seen in pulmonary tuberculosis. Based on criteria established by the ATS, 59% of the infected subjects in this series had the disease.

To analyze the efficacy of a program for the study and follow up of tuberculosis contacts, Martínez Sanchís et al[38] studied, from 1997 to 2002, a group of 458 contacts of 79 active cases. They completed contact investigations for 64% of the patients diagnosed with tuberculosis in their public health care area. Compliance with treatment was quite high (79%) in this study. Immigrant status was among the factors with a negative impact on adherence to treatment. Elevated transaminase levels, indicative of isoniazid-related liver toxicity, were observed in 22% of cases, although treatment had to be suspended in only 3 cases. These findings support the need to improve control programs to establish contact tracing as the standard procedure after detection of tuberculosis infection.

The importance of the effect of HIV status and other variables on the outcome of tuberculosis treatment was evaluated in a cohort study in 6 autonomous communities of Spain.[39] Because 21% of HIV-positive patients had an unsatisfactory treatment outcome, the authors suggested specific interventions to remedy this situation, especially for drug users. Mortality in HIV-positive tuberculosis patients was associated with the presence of a neoplasm and drug use through nonparenteral routes.

Techniques and Transplants

Transplants

The number of therapeutic indications for lung transplantation continues to increase and more thoracic surgery teams in Spain are performing transplant operations. Several important articles on this topic were published in Archivos de Bronconeumología last year. Padilla et al[40] studied perioperative mortality and risk factors in a group of patients with cystic fibrosis who underwent lung transplantation. The perioperative mortality and survival rates observed in their study were within the range reported by the Registry of the International Society for Heart and Lung Transplantation. Among the many potential predictors of perioperative mortality evaluated in the study, the only variable significantly related to mortality was the ratio of PaO_2 to a fraction of inspired oxygen of less than 200 mm Hg in the first few hours after transplantation.

De Pablo et al[41] described their experience with lung transplantation in patients with suppurative diseases and compared the outcomes between patients with cystic fibrosis and those with bronchiectasis caused by other processes. The incidence of bacterial infection as a cause of early mortality in this series was lower than in other series, probably because a combination of 3 antibiotics was used to treat bacterial colonization. The authors concluded that surgical intervention offers good 5-year survival (49% of cases) and patients with

suppurative disease are good candidates for lung transplantation.

Gámez et al[42] reported improvements in lung preservation after using a low potassium dextran solution over a 3-year period. In comparison with a historical control group, this new solution improved the outcome of treatment, leading to a 50% lower incidence of severe ischemia-reperfusion injury.

Diffuse Interstitial Lung Disease

The histological diagnosis of diffuse interstitial lung disease requires training and experience. Sánchez-Varilla et al[43] studied differences in the histopathological diagnostic findings among pathologists who evaluated diffuse interstitial lung disease. In that study, biopsy samples from 33 patients with the disease were analyzed. The histological findings of pathologists specializing in interstitial diseases differed from those made by nonspecialist pathologists in 30% of the cases evaluated. Consequently, it seems advisable that the study of diffuse intersitial lung disease be performed by specialized pathologists.

Surgery

To assess agreement between planned lung resections and the type subsequently performed on patients with lung cancer, Varela et al[44] undertook a prospective study of a series of 199 patients who underwent thoracotomy. In 13% of cases, the resections actually performed did not correspond with the initial plan. Most of the discrepancies occurred in central tumors, in which a pneumonectomy–rather than lobectomy or segmentectomy–was performed because of direct invasion of anatomic structures.

Surgeons at the thoracic surgery department of the Hospital Universitari de Bellvitge in the province of Barcelona, Spain have extensive experience in the treatment of hyperhidrosis. In a large series of patients, Ramos et al[45] described the anatomic location of the hyperhidrosis, the accompanying signs and symptoms, and the self-reported degree of anxiety and perception of its effects on daily life. They found that the palms, soles, and armpits were the body areas most affected by hyperhidrosis. The authors developed a specific questionnaire that clearly reflected the degree of patient-reported anxiety; the traditionally-applied State-Trait Anxiety Inventory, on the other hand, was unable to measure this anxiety.

Padilla et al[46] evaluated long-term survival after curative surgery for nonsmall cell lung cancer (NSCLC) in a series of 216 patients at stage T2 N1 M0. The survival rate was 40% at 5 years and 30% at 10 years. The main variables associated with a negative prognosis for survival were tumor size and histological type; patients with squamous cell carcinoma had a higher survival rate compared to those with other subtypes.

In a related study, Padilla et al[47] evaluated the cause of death in patients who underwent surgical treatment for NSCLC in stage 1A. Of the patients studied, 39% died of causes other than NSCLC. When death was secondary to the primary tumor, the authors observed 2 patterns: the cause of death was either due to metastasis or to a new tumor. The number of lymph nodes resected had no impact on survival in that series.

Although noniatrogenic traumatic tracheobronchial injuries are relatively rare, Gómez-Caro et al[48] were able to evaluate the medical and surgical management of 15 cases. Even though most patients in their series required initial surgery due to cardiorespiratory instability or associated complications, the authors support conservative treatment, rather than surgery, for these types of injuries.

Finally, in terms of surgical mortality associated with thoracotomy, Peñalver et al[49] studied the influence of the use of blood products on survival. In their series of 856 patients who underwent thoracotomy for stage 1 lung cancer, no difference in survival was found between patients who required perioperative blood transfusion and those who did not, despite the fact that transfusions were more common in cases with larger tumors and for pneumonectomies.

Techniques

A group of lung cancer researchers in Madrid, Spain recorded the diagnostic procedures and staging of a series of 2172 patients; Martín de Nicolás et al[50] studied a subset of that series to assess the diagnostic yield of techniques used in the routine staging of mediastinal involvement in women with NSCLC. The authors found mediastinal node involvement after a negative computed tomography (CT) scan in 13% of cases at stage T1 N0. Given the results of this study, the authors believe that the systematic use of prognostic mediastinoscopy in women is justified, even for early stages of the disease. The next step, nevertheless, is to evaluate the combined diagnostic yield of positron emission tomography and CT compared to mediastinoscopy in this subset of female lung cancer patients.

Transbronchial needle aspiration has been performed as an alternative to mediastinoscopy for 2 decades. In a series of 207 subjects, Fernández-Villar et al[51] assessed potential predictors of positive findings of transbronchial needle aspiration for patients with diseased mediastinal lymph nodes. The only factor that was independently associated with obtaining diagnostic samples was the diameter of the short axis of the diseased lymph node (>20 mm) measured by a chest CT scan. Therefore, in the hands of trained bronchoscopists, transbronchial needle aspiration may provide a good diagnostic yield in staging lung cancer, especially for diseased nodes of this size.

Another endoscopic technique that is becoming increasingly sophisticated is endoscopic treatment of central airway stenosis. Cosano Povedano et al[52] described their experience with 136 patients over a 5-year period. Central airway patency was achieved in 92% of the tumor-related stenoses. The most common

complications were stent migration (8%) and granuloma formation after stent insertion (12%). It is clear, therefore, that interventional bronchoscopy is effective for resolving central airway stenosis, with low mortality rates and minor complications.

Pleura

There continues to be great interest in evaluating the diagnostic yield of different biochemical and clinical markers in the management of pleural effusion. Haro-Estarriol et al[53] assessed changes in the acid-base equilibrium of pleural fluid during the first 2 hours after thoracentesis. No significant changes were observed in the pH or the partial pressure of carbon dioxide of pleural fluid kept at room temperature or on ice during this 2-hour period. Multivariate analysis revealed that the number of red blood cells in the effusion and neoplastic etiology had a significant effect on pH changes. Therefore, it is not necessary to keep the pleural fluid on ice if the sample is analyzed within this 2-hour period.

The prognostic value of carcinoembryonic antigen (CEA) in the pleural lavage fluid of patients with pulmonary carcinoma was evaluated by Galbis Carvaja et al[54] in a study of 142 cases. They concluded that it is possible to detect CEA in the pleural lavage fluid in patients with lung cancer and that the values so obtained are significantly higher than those found in fluid from subjects without lung neoplasms. The best cutoff point for suspected malignancy would be a CEA level of 0.30 ng/mL.

Kaya et al[55] studied vascular endothelial growth factor (VEGF) in benign and malignant pleural effusion. They found that VEGF levels in pleural fluid differ according to etiology of the effusion. Differences in VEGF levels were found between exudative and transudative effusions. Although mean VEGF levels were higher in malignant pleural fluids than in nonmalignant exudates, the difference was not significant. Likewise, no significant differences were found in pleural VEGF levels in malignant effusions of different etiology. Given these findings, it is still not possible to recommend measuring VEGF levels to determine the etiology of pleural effusions.

Other Areas

To assess whether there is a characteristic pattern for sarcoidosis in bronchoalveolar lavage (BAL) cell counts and to evaluate whether BAL offers information on disease course, Vidal Serrano et al[56] studied a group of 34 patients with sarcoidosis at different stages of disease. No differences in cytology or lymphocyte populations in the BAL fluid were found, regardless of radiographic stage. BAL provided no information on disease activity nor was it predictive of the course of disease over the 12 months following diagnosis.

Armengol Carceler et al[57] studied mucociliary transport and ciliary ultrastructure in patients with Kartagener's syndrome. They concluded that the presence of chronic upper and lower airway infections from birth, combined with situs inversus and nasal mucociliary stasis, should be considered a definitive diagnosis for this syndrome, even if the ciliary ultrastructure is normal, which was the case in 30% of patients in their series.

De Granda Orive et al[58] analyzed the key words that authors of original articles include to facilitate bibliographic searches for various respiratory system knowledge areas in ARCHIVOS DE BRONCONEUMOLOGÍA. They found that key words were used correctly only 50% of the time. Failing to use key words correctly may make it difficult for members of the scientific community to locate the research article. Therefore, to assure that the scientific research of our journal is widely visible, authors should make an effort to use key words that correspond to those published in the list of medical subject headings used in the Index Medicus database.

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