380. New insights in the clinical management of lung diseases

P3479
Routine coagulation testing is of little value prior to diagnostic bronchoscopy
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Introduction: Coagulation testing is common prior to bronchoscopy despite guideline recommendations that this is unnecessary in most patients. This audit aimed to determine the frequency and clinical impact of coagulation testing prior to bronchoscopy.

Methods: 217 bronchoscopies were audited. Coagulation testing prior to procedure was recorded. Abnormal prothrombin time (PT) was defined as >13 seconds, abnormal aPTT as >34 seconds and thrombocytopenia as <100,000 cells/mm³.

Results: The mean age was 67.8 years and 53% were male. Bronchoscopy with endobronchial biopsy was performed in 36%, transbronchial in 5%, stent insertion in 2.7% with endobronchial ultrasound guided biopsy in 6.4%. Significant bleeding was reported in 32 cases (14.7%) (no fatalities related to bleeding). There were no significant differences in coagulation values between those with and without bleeding.

Abnormal values of PT (3.1% vs 3.2%, p=1.0), aPTT (9% vs 3.8%, p=0.6) and...
Thrombocytopenia (0% vs 1.6%-1.0%) were rare and were not more frequent in patients with bleeding complications. Of the patients with normal coagulation screens (186) 92 had previously documented normal coagulation. There were a total of 298 coagulation screens performed on 217 patients, costing £2533.

Conclusions: In a population at low risk of coagulation abnormalities, routine coagulation testing appears to have little value and adds significant expense.

P3483
Chest drain fixation: How can we prevent drains from falling out? Lessons from an audit
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Introduction and objectives: Chest drain displacement/falling out is the most common complication of small bore drains inserted by the Seldinger technique. This often necessitates repeat drain insertion, with resulting morbidity, delay in further procedures such as pleurodesis, and prolongs hospital stay. Varying techniques of securing chest drains have been described but limited data is available on which method is optimal. We aim to compare the techniques which are currently in practice at our district general hospital: sutures, and sutureless dressing.

Method: A retrospective case note audit was performed of patients requiring chest drain insertion over a 12-month period in 2010. Seventy one small bore chest drains were evaluated according to the rate of displacement of those secured by sutures versus those with dressing alone. A prospective re-audit was then performed in 2011 over a period of 8 months, following recommendations to change practice to fixation with sutures. Fifty-four drains were evaluated, with sutures as the method of fixation in the majority.

Results: In the 2010 audit, the majority of drains were secured with dressing alone (47 v 24). Accidental displacement was observed in 37 of the total 71 drains (52%). Of those with dressing fixation only, 75% were displaced, compared to 4% of drains which were sutured in place. Twenty one patients required repeat drain insertion. During the 2011 re-audit, sutures were used in 48 out of 54 (89%). Only 6 drains were accidentally displaced (11%).

Conclusion: The results of this audit suggest that securing a chest drain with a suture, as compared to dressing alone, is more effective in preventing accidental displacement.

P3484
Surgical lung biopsy – Gold standard for diagnosis of idiopathic interstitial pneumonia?
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The current classification of idiopathic pulmonary interstitial disease (IPD) is based on the account of the specificities of the clinical picture, radiological and pathological features. This raises the question of how much the necessity of verification of the diagnosis of IPD data pathologic study biopsy or autopsy lung material. To answer this question, we asked three highly-skilled pathologist with considerable experience in pulmonology, to conduct an independent analysis of the same histological lung tissue of patients with various forms of IPD. For the analysis of slides, presented 73 patients with IPD. Material for histological study was obtained during open and videotorakoskopich lung biopsy and at autopsy.According to clinical studies and results of computed tomography high-resolution was found clinical diagnosis of idiopathic fibrosing alveolitis (IFA) for the pathomorphological study,
nonspecific interstitial pneumonia (NSIP), lymphoid interstitial pneumonia (LIP), cryptogenic organizing pneumonia (COP) and respiratory bronchiolitis associated with interstitial lung disease (RB-ILD). Match the clinical diagnosis with the conclusions of three experts were only in 15 cases (20.5%), two experts in 33 (47.9%) and one - in 15 cases (20.5%). In most cases, differences in interpretation of histological data did not go beyond the group of IIP. Differentiated forms of IIP were very difficult. At the same time, identification of each form of IIP is not an end in itself, it is essential if accurate diagnosis determines the treatment tactics. In our opinion, surgical biopsy of the lungs is necessary in the differential diagnosis of IIP with other interstitial lung diseases.

P3485
Non-traumatic chylothorax – A retrospective analysis
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Introduction: Chylothorax (CL) is the presence of lymph in the pleural space. Diagnosis is based on lipoprotein profile of the pleural fluid (PF). The etiology is variable.

Aims: To characterize presentation and causes of non-traumatic CL.

Methods: Retrospective analysis of adults with CL (triglycerides ≥ 110 mg/dl) hospitalized in a central hospital between Jan/04 and Jun/11. A review, after computer supported search of hospital files of patients diagnosed with CL was made. Clinical, laboratory and image presentation, as well as treatment and outcome were analyzed.

Results: We identified 27 (43.5%) patients (pts) with non-traumatic CL: 19 (70.4%) were women. The median age was 62 years (33 – 96 years old). Dyspnea was present in 22 (81.5%), cough in 7 (25.9%) and chest pain in 6 (22.2%). Effusion was unilateral in 22 (81.5%), with milky appearance in 16 (59.3%); exudate in 26 (96.3%), and transudate in 1 (3.7%). Mean ± sd of the triglycerides was 477 ± 458 mg/dl. Etiologies: lymphoma in 14 (51.8%), metastatic cancer in 4 (14.8%), pulmonary tuberculosis in 2 (7.4%), liver cirrhosis in 2 (7.4%), lymphangioleiomyomatosis in 2 (7.4%), inconclusive in 3 (11.1%). Chest drain was needed in 11 (40.7%) pts, pleurodesis in 3 (11.1%). Infectious complications were seen in 10 (37.0%) pts: Pulmonary tuberculosis in 2 (7.4%), liver cirrhosis in 2 (7.4%), lymphan-

-477.4

giology in 2 (7.4%), bacterial pneumonia in 2 (7.4%), viral pneumonia in 2 (7.4%), and others 10/11 (90.9%).

P3486
Utility of closed pleural biopsy in a teaching hospital in Singapore
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Introduction: The yield of closed pleural biopsy is quoted in most studies to be around 90% for pleural TB and 70% for malignancy.

Objective: To determine the yield of closed pleural biopsy in our institution and the possible factors affecting the yield.

Methods: This was a retrospective study. All pleural biopsies done from 1/6/10 till 31/7/11 were included. Inclusion criteria were subjects with lymphocytic exudative pleural fluid who underwent closed pleural biopsy. All closed pleural biopsies were done under ultrasound guidance either by a respiratory trainee or an interventional radiologist.

Results: A total of 50 subjects underwent closed pleural biopsy. The positive yield of closed pleural biopsy in the cohort was 33/50(66%). Out of the 33 positive yield, 17 (51.5%) were pleural TB, 6 (18.2%) were malignancy and 10 (30.3%) were others. The positive yield of pleural TB was 17/26(65.4%), malignancy 6/14(42.9%) and others 10/10(100.0%). 32/50(64%) pleural biopsies were done by respiratory trainees and 18/50(36%) by interventional radiologists. The positive yield of pleural biopsies done by respiratory trainees was 18/32(56.3%) and by interventional radiologists 15/18(83.3%). No difference in the yield of closed pleural biopsy across the ages from 22 to 94 years old (p=0.85), male versus female (p=0.76), race (p=0.26), respiratory trainees versus interventional radiologist (p=0.067), TB versus malignancy (p=0.312).

Conclusion: The yield of closed pleural biopsy was lower compared to most studies in other centers. Age, gender, race, operator experience, TB versus malignancy did not show any significant difference in the yield.

P3487
Comparison of serum & pleural levels of NT-ProBNP in patients with acute dyspnea and pleural fluid referred to emergency department
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Background: Etiologic diagnosis of Pleural effusion is very important. Light criteria are sensitive for identifying exudates, but they misclassify 15% to 25% of transudates as exudates. N-terminal B-type natriuretic peptide is a cardiac neuro-
hormone specifically secreted from the ventricles in response to volume expansion and pressure overload. This study compares serum and pleural levels of NT-ProBNP in patients with acute dyspnea and pleural fluid for diagnosis of heart failure.

Methods & materials: In an analytic-descriptive cross-sectional study, 43 pa-
tients with acute dyspnea and pleural fluid in two groups (15 patients with CHF and 28 patients with other pathology) were analyzed. NT-ProBNP measurement were performed by electrochemiluminescence immunonassay method on admission. All other biochemical analysis (albumin, total protein, cholesterol, triglyceride, amylase, LDH) were performed and gradient and ratio of this markers were accounted.

Results: The Means±SD serum NT-ProBNP levels in CHF and nonCHF pa-
tients were 15423±3351 pg/ml and 4751±616 pg/ml, respectively, and pleural NT-ProBNP levels in CHF and nonCHF patients were 14822±3249 pg/ml and 3569±1231 pg/ml, respectively. Using a cut-off value of 2350 pg/ml, for serum and 1750 pg/ml for pleural samples, the accuracy of NT-ProBNP for identifying pleural effusions from cardiac causes was 76%, the sensitivity and specificity was 93.7% and 76.9%, respectively. The definitive and negative likelihood ratio was 3 and 0.10, respectively.

Conclusion: NT-proBNP is a sensitive marker for the diagnosis of pleural effusions from heart failure.

P3488
Conservative pneumothorax management: How big is too big?
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Guidelines on primary spontaneous pneumothorax (PSP) management differ but commonly recommend intervention especially for larger PSPs. Evidence for recom-
dending intervention over conservative management, even for large PSPs, appears scarce. We believe intervention is rarely required, that complications can and do ensue, and that conservative management of PSP has good outcomes without the risks associated with guideline-mandated intervention. Conservative management of large PSPs is outside current guidelines, despite a long interna-
tional and local history of large PSPs being successfully managed in this way. We present data to examine the evidence base for compelling reasons to change our current conservative practice. We are conducting a Cochrane Review of management of PSP; this is ongoing. We have performed a retrospective review of PSP patients admitted to our hospital and mostly managed conservatively, with good outcomes, no complications, and no increased need for pleurodesis. Finally, here, we de-
scribe six consecutive PSP cases, all large, treated conservatively outside current guidelines but with no complications and good outcomes. Patient satisfaction with this treatment was high. Pain scores, hospital stays, subsequent need for surgery, and complication rates were low in this small series, although there were more outpatient follow up appointments during the recovery phase. Our review has found that current clinical guidelines on interventional PSP management have a limited evidence base. Our observations suggest that conservative management may be as safe and effective in many PSPs, regardless of size. We continue to study PSP cases prospectively.

P3489
The influence of the patients’ participation in trials on the adherence to treatment in future
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The aim of the study was to estimate the influence of participation in trials on the adherence of the patients to the treatment of chronic obstructive pulmonary disease (COPD) and concomitant arterial hypertension (AH) after the trial finishing. 43 patients (average age 51.5±6.5 years) with severe and very severe COPD and concomitant moderate AH were enrolled. On the each visit patients received in-
formation about the necessity of the regular taking of the basis therapy of the main and concomitant disease. The duration of the trial visits were 160±32 minutes instead of 21±5 minutes in case of routine ambulatory visits. Patients filled diaries concerning their knowledge about COPD and AH, taking of the basis therapy of COPD and AH for 6 months after the trial finishing. The patients had 1,1±0.2 COPD exacerbations (p=0.041). Perhaps, the improvement of the patients’ adherence to the treatment of COPD and AH connected with better cooperation between the patient and investigator or than it was in routine clinical practice.

Conclusions: The participation in trial due to COPD improves the adherence of patients to the treatment of COPD on 37% and AH on 44% after the trial completion.
P3490
Comparison of patients’ exercise capacity according to the MRC classification and 6-minute walking test
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Background: Since the description of dyspnea varies from patients to patient and also varies in various cultures, the aim of this study was evaluation of Persian version of MRC dyspnea scale and comparison of it with results of an objective test, 6-minute walking test (6mwt).

Methods: In this cross-sectional study, 150 consecutive patients with chief complaint of dyspnea who referred to the physiotherapy department of Dr Masih Daneshvari hospital, Tehran, Iran for performing 6mwt were selected. The severity of dyspnea was assessed by MRC dyspnea scale.

Results: 51% were male and the mean age of patients was 47 yr. 87 (58%) had pulmonary diseases, 39 (26%) had cardiac diseases and 24 (16%) had dyspnea with unknown origin. The mean of disease duration was 8 yr and 23 (15%) used oxygen at home. Overall, 14% of patients were in level 1 MRC, 41% in level 2, 20% in level 3, 21% in level 4 and 4% in level 5. The mean (SD) of distance, decrease in oxygen saturation and increase in Borg dyspnea scale were 474±117 m, 8±8% and 2±2, respectively. Levels of MRC dyspnea scale were negatively correlated with distance (∙=0.500, P<0.001) and positively correlate with decrease in oxygen saturation (∙=0.209, P=0.010) and increase in Borg dyspnea (∙=0.387, P<0.001).

Conclusion: Findings of our study showed that there is good correlation between MRC dyspnea scale and 6mwt. Since the assessment of level of function of patients with dyspnea is necessary for evaluating progression of the disease and 6mwt test needs skilled personnel and appropriate place, MRC dyspnea scale could be a good alternate.

P3491
Hemoptysis: Causes, interventions and outcomes – Indian single centre experience
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Introduction: Hemoptysis, requires multidisciplinary management & is lacking in tuberculosis hospitals. We evaluated profile of patients admitted with hemoptysis in tertiary care respiratory center.

Methods: Retrospective analysis of 377 patients admitted with hemoptysis in Metro Centre for Respiratory Diseases between 2006–2011 done and results ana- lyzed. All patients had active medical management and those suitable for surgery underwent elective or emergent surgery ot herwise bronchial artery embolization (BAE) or bronchoscopic interventions (BI) done.

Results: Mean age of patients was 49.5±16.52 years with 76.59% (n=287) being male. Mortality in male patients was significantly (59.6%Vs 40.4%; (BAE) or bronchoscopic interventions (BI) done.

Types of management vs mortality in hemoptysis

<table>
<thead>
<tr>
<th>Type of Management</th>
<th>N</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Before After 5min After 30min After 60min After 120min EBT [°C, mean ±SD]</td>
<td>33,0±0,27</td>
<td>33,4±0,27</td>
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Conclusions: Food ingestion affects the level of EBT in healthy subjects over 60 minutes. The failure to establish a dose response relationship between EBT and the different caloric regimens may indicate that they both happen to be on a plateau of the dose-response slope.

P3493
Nutritional risk screening 2002 – Application in pneumology
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Background: Malnutrition has a prevalence of ca. 20.5% of all inpatients and is recognized as a relevant risk factor concerning morbidity and mortality. In a German multicenter study (Pirlich et al., 2006) malnutrition was found in 27% of patients, affecting significantly more women. Malnutrition according to the WHO (BMI <18.5 kg/m²) was found in 4%. Especially in those over 65 years age was the most important factor for malnutrition. The aim of the current study was to assess the prevalence of malnutrition in pneumologic patients using the Nutritional Risk Screening 2002 (NRS) and to analyze possible relations to age, sex, disease or length of stay.

Methods: 705 consecutive patients in our clinic specialized in pneumology were analyzed in respect of age, sex, BMI, disease, malnutrition risk (NRS) and length of stay.

Results: Risk of malnutrition (MN risk) according to NRS was found in 14.3% of patients, while according to WHO also 2.5% were malnourished. In those older than 65 years, these values were 19.6% and 1.5% respectively. There was no relevant difference between sexes. Age significantly contributed to MN risk (OR 1.054, p<0.001). A tumorous disease markedly increased MN risk (OR 2.33, p<0.001), while it was highly reduced in sleep-related breathing disorders (OR 0.04, p<0.001). MN risk was also associated with a significantly longer length of stay (10.2±9.5 vs 5.4±6.0 days).

Conclusion: The application of a validated screening tool significantly contributes to detected patients at risk for malnutrition. Especially patients older than 65 as well as those with specific diseases need increased attention regarding MN risk. An early intervention could help to reduce length of stay.

P3494
Non-CF bronchiectasis: Correlation between body mass composition, lung function, inflammatory syndrome, gender and quality of life
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Background: The impact of bronchiectasis on health care’s costs and quality of life is important due to prolonged and repeated periods of hospitalization.

Methods: To assess the situation of hospitalized persons diagnosed with non-CF bronchiecta- tis by studying the relationship between body mass composition, lung function and gender:to study how these parameters correlate with the inflammatory profile associated with acute recurrent respiratory infections.

Conclusions: 30 consecutive patients (15 male, 15 women) enrolled in 2011,evaluated through HRCT,biompedence,spirometry,inflammatory profile and Saint George Questionnaire.

Results: We observed that 70% of the patients(12 male and 9 women) had high percent of fat,theproportion of water was low at 50% of the patients(9 male,6 women);also,thefat percentage was low at 28 patients(equal for both sexes). Regarding the pulmonary function and the inflammatory syndrome we observed that 90%(27 patients) had abnormal values for CRP and ESR, and all patients had obstructive dysfunction syndrome(FEV1 between 34-85% from predicted values). 80% of the answers from Saint George Questionnaire indicated that the quality of life was medium to poor.We correlate this to low percent of lean and water, the presence of inflammatory syndrome and obstructive respiratory syndrome.

Conclusions: Body mass composition in patients with non-CF bronchiectasis is important, probably due to chronic lung disease and recurrent infections associated with the inflammatory syndrome.Obstructive lung

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syndrome is present at almost all the patients and with the rest of parameters can be correlated with the decrease of the quality of life.

**P3495**
**Effects of inhaled saline and oxygen on noninvasive markers of airway and lung function**  
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**Introduction:** Inhalation challenges have been shown to induce pulmonary effects, e.g., an increase in 8-isoprostanate levels in exhaled breath condensate (EBC) by hyperoxic air. The current study examined the sensitivity of noninvasive measures such as bronchial (FeNO) and alveolar (NOxal) nitric oxide, diffusing capacity for nitric oxide (DLNO) and carbon monoxide (DLCO), and hydrogen peroxide (H2O2) in EBC to detect alterations induced by oxidative or osmotic inflammatory stress.

**Methods:** 20 healthy nonsmoking subjects aged 19-50y inhaled nebulised 3% hypertonic saline solution (HSS) over 20 min and 100% O2 at a flow of 5l/min over 30 min on two days. Before and after inhalation spirometry, multiform exhaled NO, DLCO and DLNO were measured and EBC was collected and analysed for H2O2 using an optimised procedure with inhalation filter.

**Results:** HSS inhalation induced a median decrease in FEV1 of 3% (P<0.001) and in DLNO of 1.5% (P<0.05): no changes occurred for DLCO, alveolar volume, FeNO and H2O2. Results for NOxal were ambiguous in both inhalation groups. Hyperoxic air did not cause significant changes in any other parameter.

**Conclusion:** These results suggest that HSS inhalation not only causes slight airway obstruction but also induces alterations of fluid balance in the lung parenchyma that can be detected via DLNO but not DLCO. DLNO could thus be of clinical value in the diagnosis of mild pulmonary edema, e.g. related to cardiac dysfunction.

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**P3496**
**Cytokine response in the lungs, pleural fluid and serum in children after thoracic surgery using one-lung ventilation**  
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Thoracic surgery mandates usually a one-lung ventilation (OLV) strategy with the collapse of the operated lung and ventilation of the non-operated lung. These procedures trigger a substantial inflammatory response. The aim of this study was to analyze the cytokine reaction in both lungs, pleural space and blood in patients undergoing lung resection with OLV.

**Methods:** Broncho-alveolar lavage (BAL) fluid of both the collapsed, operated and the ventilated, non-operated lung, respectively, pleural space and blood was collected and analysed for cytokines in the BAL fluid, pleural space and blood.

**Results:** Substantial inter-individual differences in the BAL fluid between patients in cytokine levels occurred. In the pleural fluid and the blood these inter-individual differences were less pronounced. Both sides of the lung were affected and showed a significant increase in IL-6 (14.2±2.6 pg/mL) and IL-1RA (23.2±1.7 pg/mL) in the collapsed lung, operated and the ventilated, non-operated lung and blood was collected and the concentrations of interleukin (IL)-6, IL-1RA were determined with enzyme-linked immunosorbent assays in 24 patients.

**Conclusion:** The inflammatory response of cytokines affects both the collapsed, operated and the ventilated, non-operated lungs. The difference in extent of response underlines the complexity of the inflammatory processes during OLV in contrast to the cytokines.

**P3497**
**Treatment effect of inhaled prolonged bronchodilator therapy (IPBT) combined with inhaled glucocorticosteroids (IGCS) on respiratory symptoms and external respiratory function in MDR pulmonary TB patients with broncho-obstructive syndrome (BOS)**  
Galina Kokina1, Vladimir Romanov2, 1Department of Granulomatous Lung Disease, Central TB Research Institute, Moscow, Russian Federation; 2Department of Granulomatous Lung Disease, Central TB Research Institute, Moscow, Russian Federation

**Aim:** To study treatment effect of IPBT combined with IGCS on respiratory symptoms and external respiratory function in MDR pulmonary TB patients with BOS.

**Methods:** We studied treatment effect of IPBT combined with IGCS on respiratory symptoms of 44 MDR pulmonary TB patients with BOS: fibrotico-cavernous tuberculosis 16 patients, disseminated tuberculosis 8 patients, caseous pneumonia 6 patients, infiltrative pulmonary tuberculosis with cavities 14 patients. All patients were treated by standard TB chemotherapy on the base of WHO recommendations. All patients were treated by one dose of 50/500 mcg of combined IGCS (including prolonged beta2-agonist-salmeterol and fluticasone propionate) twice a day during one month. Then this drug was not used during 5 months. Treatment effect was evaluated, first, at the beginning of the treatment and then at the end of treatment by this drug and, last, in 6 months, at the end of study. Respiratory symptoms were evaluated by 5-mark grading system and cumulative index (CI). FEV1 was shown in percents out of standard indications.

**Results:** We found that the use of combined bronchdilators CI decreased per 24.3% and dyspnea decreased per 37.5% during one month. And during the next 5 months CI decreased only per 10.3% and dyspnea per 13.3%. FEV1 increased from 63.3% to 85.4% during one month of inhaled broncholitc combined with IGCS use.

**Conclusion:** IPBT combined with IGCS significantly prompts dyspnea decrease and respiratory symptoms expression and, at the same time, it prompts FEV1 increase.

**P3498**
**Transbronchial lung biopsy, our results in 1197 patients**
Luděk Siehl1, Sarka Lefnerova1, Pavla Zuckova1, Radoslav Matyáš2, Martina Vasakova1, 1Department of Respiratory Medicine, First Medical School of Charles University and Thomayer Hospital, Prague, Czech Republic; 2Department of Pathology and Molecular Medicine, Thomayer Hospital, Prague, Czech Republic

**Background:** Transbronchial lung biopsy (TBLB) is routinely performed by pulmonologist to diagnose focal and diffuse lung diseases. Compared with open lung biopsy, TBLB has lower morbidity and mortality. The authors summarize the results of 1197 patients who underwent TBLB.

**Objective:** To evaluate the diagnostic yield of TBLB performed without any guidance during the procedure in various pulmonary affections.

**Methods:** Retrospective analysis of 1197 patients who underwent TBLB within the years 2008 to 2011. Patients were selected in groups according to a disease: focal lesion, suspected sarcoidosis, interstitial lung disease (ILD) other than sarcoidosis, pneumonia and bronchial asthma. No method of guidance during the bronchoscopy was used. The site for TBLB was chosen by a physician after revision of chest CT or chest radiograph. Results fulfilling the requested morphologic criteria of specific disease and leading to the final clinical diagnosis were judged to be true positive.

**Results:** The overall diagnostic yield of TBLB was 26.6%. Highest sensitivity was observed in sarcoidosis - 60.2%. In the subgroup of 302 patients with lung cancer, TBLB confirmed the disease in 142 (47.0%) cases. In the ILD excluding sarcoïdosis group sensitivity, specificity, positive-predictive and negative-predictive value was: 12.4%; 92.9%; 91.4% and 14.8%, respectively. In 18 persons (1.5%) pneumothorax developed, major bleeding was observed in 7 patients (0.6%). There was no mortality.

**Results:** All patients were treated by one dose of 50/500 mcg of combined IGCS (including prolonged beta2-agonist-salmeterol and fluticasone propionate) twice a day during one month. Then this drug was not used during 5 months. Treatment effect was evaluated, first, at the beginning of the treatment and then at the end of treatment by this drug and, last, in 6 months, at the end of study. Respiratory symptoms were evaluated by 5-mark grading system and cumulative index (CI). FEV1 was shown in percents out of standard indications.

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