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### 380. New insights in the clinical management of lung diseases

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**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/mm<sup>3</sup>.

**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 (0% vs 3.8%, p=0.6) and

## Coagulation testing

Coagulation testing	Significant bleeding		No bleeding		p-value
	% performed	Median (IQR)	% performed	Median (IQR)	
PT	93.8%	10.9 (10.5–11.3)	84.3%	10.7 (10.3–11.1)	0.2
aPTT	93.8%	26.2 (25.2–28.7)	84.3%	26.4 (24.6–28.8)	0.9
Platelet Count	96.9%	324 (241–414)	94.6%	289 (236–378)	0.2

IQR = interquartile range.

thrombocytopenia (0% vs 1.6%,  $p=1.0$ ) 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.

## P3480

## Endoscopic features at patients with thermoinhalation a trauma in pulmonology department

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**The purpose:** To estimate features endoscopic pictures at patients with thermoinhalation trauma (TNT) during treatment in pulmonology department.

**Materials and methods:** 96 patients were randomly divided in two groups: the main group 56 patients received treatment in the acute period at the Burn centre (36 received artificial ventilation) and after extubation were transferred to the Pulmonology department; the control group 40 patients continued treatment after extubation at the Burn centre. Volume of research: an estimation of respiratory symptoms, endoscopic. Endoscopic included the characteristic of gleams of a trachea and bronchial tubes, a condition of a mucous membrane and a bronchial secret.

**Results:** Distribution of patients by which it was carried out endoscopic, on a degree of weight TNT: I-14.2%, II- 37.5%, III- IV - 48.2%.

At endoscopic following changes have been revealed: laryngitis - 28.5%, dyskinesia membranous parts of the bottom third of trachea (inspiratory a stenosis) - 5.3%, cicatricial deformation of a trachea - 26.7%, cicatricial stenosis of a trachea - 10.7%, tracheitis - 44.6%, diffuse endobronchitis I degrees of intensity of an inflammation - 48.2%, diffuse endobronchitis II degrees of intensity of an inflammation - 41%, atrophic a bronchitis - 8.9%, erosive a tracheitis - 8.9%/Without a seen pathology - 12.5%

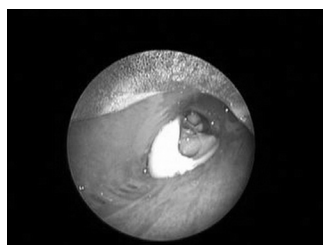
**Conclusion:** Despite of spent treatment in the Burn the center, at the majority sick - 44(78.5%) are revealed inflammatory changes endoscopic a tree and throat which demanded continuation of treatment in conditions pulmonology branch.

## P3481

## Incidental cases of tracheobronchial foreign body aspiration in adults

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Foreign body (FB) aspiration can be a life-threatening problem. Incidental cases can remain undetected for a long time and often are misdiagnosed. The aim of our study to report the incidence of incidentally diagnosed cases and present two cases. None of the patients had aware of foreign body aspiration previously. During the 10 years, 24 FBs have been removed in our clinic by using either FOB or rigid bronchoscope and 2 of whom detected incidentally. 25 years old patient had been misdiagnosed as having unresolved pneumonia due to consolidation of right lower lobe. After the failure of treatment, bronchoscopic evaluation and computerized tomography (CT) have been done. Metallic part of the pencil has been removed by rigid bronchoscopy. Another case was 50 years old and admitted to our hospital with almost same complaint with the first case such as cough, sputum, fever and dyspnea. Consolidation and pleural effusion adjacent to triple dental prosthesis has been detected in radiography.



It was removed by rigid bronchoscopy. None of the cases had any risk factor for aspiration such as older age and altered mental status.

Untreated or unrecognized FB aspiration can result in obstructive pneumonitis, atelectasis, lung abscess, empyema, bronchiectasis, hemoptysis, and pleural effusion. For that reason, patient with chronic cough, recurrent or unresolved lung infections even if no history of aspiration might be detected for FB aspiration.

## P3482

## Scarf pins inhalation: About 26 cases

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Inhalation of foreign bodies is rare in adults. Inhalation of scarf pin is a phenomenon more frequent in the female population in Morocco. The aim of our study was to describe the characteristics of this particular foreign body and illustrate the circumstances and consequences of his inhalation. Twenty-six young patients all veiled, were hospitalized in the service of Respiratory Diseases University Hospital Ibn Rushd of Casablanca between January 2005 and July 2011 for inhaled scarf pin. The mean age was 16 years. Inhalation was accidental in all cases, whereas patients initiated to wear the veil. The penetration syndrome was found in all cases. Clinical examination was normal in all patients. The chest X-ray showed the foreign body as a linear opacity, located right in 18 cases and left in eight cases. Flexible bronchoscopy was able to extract the pin in 21 cases. The pin was released spontaneously in three cases and two patients were operated on. The scarf pin is a foreign body especially more common in women who wear the Islamic veil. Flexible bronchoscopy is an essential means of therapy, but the best preventive treatment is avoiding to put in the mouth sharp objects.

## 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 compared two common types of drain fixation 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 interstitial pneumonia (IIP) 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 IIP 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 IIP. For the analysis of slides, presented 73 patients with IIP. Material for histological study was obtained during open and videotorakoscopic 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,

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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 35 (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 in practice pulmonology 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  $\geq 110$  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 analysed.

**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  $\pm$  sd of the triglycerides was  $477.4 \pm 456.7$  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 13 (48,1%). Effusions solved in 6 (22,2%), persisted in 16 (59,3%) and 5 pts (18,5%) died. After discharge 6 (22,2%) remained without recurrence, 1 (6,3%) resolved, 12 (75%) persisted and the evolution is unknown in 3 (18,7%). Median follow up was 2,4 years (1,2–7,4 years).

**Conclusion:** Our findings mirror those in the literature - CL may have no classic milky appearance, can be transudate, infectious complications are common and the most frequent cause was lymphoma.

**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 effusion 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 6/13(46.2%) and others 10/11(90.9%). 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 patients 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 immunoassay method on admission. Also other biochemical analysis (albumin, total protein, cholesterol, triglyceride, amylase, LDH) were performed and gradient and ratio of this markers were accounted.

**Results:** The Mean $\pm$ SD serum NT-proBNP levels in CHF and nonCHF patients were  $15423 \pm 3351$  pg/ml and  $4751 \pm 1616$  pg/ml, respectively; and pleural NT-ProBNP levels in CHF and nonCHF patients were  $14822 \pm 3249$  pg/ml and  $3569 \pm 1231$  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 93.3% and 76.9%, respectively; The positive 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 recommending 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 international and local history of large PSPs being successfully managed in this way. We sought 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 describe 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  $51.5 \pm 6.5$  years) with severe and very severe COPD and concomitant moderate AH were enrolled. On the each visit patients received information about the necessity of the regular taking of the basis therapy of the main and concomitant disease. The duration of the trial visits were  $160 \pm 32$  minutes instead of  $21 \pm 5$  minutes in case of routine ambulatory visits. Patients filled diaries concerning their knowledge about COPD and AH, taking of the basis therapy of both diseases. The statistical program SPSS 16.0 used for working with the data of study.

It was revealed that before the trial only 22 (51%) of the patients had basis therapy due to COPD and only 18 (42%) of them took antihypertensive therapy regularly. In the 6 months after the trial completing these data were 38 (88%) and 37 (86%) respectively. Patients answered that their knowledge about COPD and AH grows on  $75 \pm 9\%$ . The patients had  $1.1 \pm 0.2$  COPD exacerbations during the 6 months before the trial and during the next 6 months after the trial completing they had  $0.7 \pm 0.1$  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 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.

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**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 (6mw).

**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 6mw 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 347±117 m, 8±8% and 2±2, respectively. Levels of MRC dyspnea scale were negatively correlated with distance ( $r=-0.500$ ,  $P<0.001$ ) and positively correlate with decrease in oxygen saturation ( $r=0.209$ ,  $P=0.010$ ) and increase in Borg dyspnea ( $r=0.387$ ,  $P<0.001$ ).

**Conclusion:** Findings of our study showed that there are good correlation between MRC dyspnea scale and 6mw test. Since the assessment of level of function of patients with dyspnea is necessary for evaluating progression of the disease and 6mw 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 analyzed. All patients had active medical management and those suitable for surgery underwent elective or emergent surgery otherwise 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%;  $p=0.048$ ). Hemoptysis was mild in 35%, moderate in 40.58% and massive in 24.13%, with 5.3%, 11.7% and 18.6% mortality respectively.

Hemoptysis was due to tuberculosis (active/old) in 54.6%, Pneumonia 20.4%, Bronchiectasis 15.9%, fungi 14.6% with mortality 8.73%, 20.8%, 10%, 16.4% respectively. Lung cancer seen in 5.6% cases only. Bleeding site was identified on CT chest in 47.9% and in 43.1% by fiber optic bronchoscopy (FOB) and combined localize bleeding in 89.4%. Patients who had medical management carried highest mortality and BAE group required further interventions in 68.4%.

Types of management vs mortality in hemoptysis

	N	Percentage
Medical (n=163)	16	9.8
Bronchoscopic Intervention (n=136)	15	11
BAE (n=30)	1	3.3
Surgery (n=48)	10	20.8
Multiple interventions (n=36)	4	11.1

**Conclusions:** All cause mortality in hemoptysis was 11.1%. Pulmonary embolism, lung cancer, necrotizing pneumonia carried higher mortality. Active tuberculosis had lowest mortality. Surgery had acceptable mortality and is definitive treatment of choice.

**P3492****Effect of energy food intake on exhaled breath temperature in healthy subjects**

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**Background:** Evaluation of the exhaled breath temperature (EBT) is a non-invasive approach to assess airway inflammation. Measuring it by a portable handheld device (PHD) has made it applicable for field studies and as an individual device for monitoring. Different activities and ambient influences may act as potential

confounders. The aim of this study was to assess the effect of eating easily utilized energy food on the level and time course of EBT.

**Methods:** Eleven non-smoking healthy subjects (3 men) at a mean age of 23 years volunteered for the study. They were trained to measure EBT with a portable handheld device (X-halo, Delmedica, Singapore). They measured their EBT and axillary temperature (AxT) in the morning before and 5, 30, 60 and 120 minutes after eating one bar of Snickers characterized by high energy content (382 kilocalories). On the next day they repeated the measurement after eating 2 bars of Snickers.

**Results:** As opposed to AxT, EBT was affected by eating one bar of Snickers:

	Before	After 5min	After 30min	After 60min	After 120min
EBT [°C, mean±s.e.m.]	33.04±0.27	33.52±0.27*	33.48±0.27	33.49±0.27*	33.23±0.28
AxT [°C, mean±s.e.m.]	35.65±0.13	35.77±0.24	35.70±0.18	35.58±0.21	35.61±0.25

\*Significant change from baseline.

The same pattern was repeated on the day when the subjects had two bars of Snickers. We did not find significant dose-response relationship between EBT and the single or double dose of the energy food intake.

**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. 20-50% 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 detected in 27% of patients, affecting significantly more women. Malnutrition according to the WHO (BMI <18.5 kg/m<sup>2</sup>) was found in 4.1%. 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 only 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.

**Aim:** Assess the situation of hospitalized persons diagnosed with non-CF bronchiectasis by studying the relationship between body mass composition, pulmonary function and gender; to study how these parameters correlate with the inflammatory profile associated with acute recurrent respiratory infections.

**Methods:** 30 consecutive patients (15 male, 15 women) enrolled in 2011, evaluated through HRCT, bioimpedance, 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, the percentage of water was low at 50% of the patients (9 male; 6 women); also, the lean percentage was low at 28 patients (equal for both sex).

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 modified, more in male than in women, probably due to chronic lung disease and recurrent infections associated with the inflammatory syndrome. Obstructive lung



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-isoprostane levels in exhaled breath condensate (EBC) by hyperoxic air. The current study examined the sensitivity of noninvasive measures such as bronchial (FeNO) and alveolar (NO<sub>alv</sub>) nitric oxide, diffusing capacity for nitric oxide (DLNO) and carbon monoxide (DLCO), and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) in EBC to detect alterations induced by oxidative or osmotic inhalative stress.

**Methods:** 20 healthy nonsmoking subjects aged 19-50y inhaled nebulised 3% hypertonic saline solution (HSS) over 20 min and 100% O<sub>2</sub> at a flow of 5l/min over 30 min on two days. Before and after inhalation spirometry, multiframe exhaled NO, DLCO and DLNO were measured and EBC was collected and analysed for H<sub>2</sub>O<sub>2</sub> using an optimised procedure with inhalation filter.

**Results:** HSS inhalation induced a median decrease in FEV<sub>1</sub> of 3% (P<0.001) and in DLNO of 1.5% (P<0.05); no changes occurred for DLCO, alveolar volume, FeNO and H<sub>2</sub>O<sub>2</sub>. Results for NO<sub>alv</sub> 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 periphery 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 drainage fluid and blood was collected and the concentrations of interleukin (IL)-6, IL-1RA were determined with enzyme-linked immunosorbent assays in 24 patients.

**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±2.2 and 1.8±0.7 pg/mL (mean ± se) and IL-1RA (23.2±1.7 and 4.2±2.6 pg/mL (mean ± se) concentrations over time in the children with one-lung ventilation (OLV) and non one-lung ventilation (p<0.001). Except for IL-6, which increased more in the collapsed, operated lung, no difference between the collapsed, operated and the ventilated, non-operated lung occurred. In the blood, IL-6 and IL-1RA increased early, already at the end of surgery.

**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)

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**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). FEV<sub>1</sub> was shown in percents out of standard indications.

**Results:** We found that the use of combined bronchodilators 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%. FEV<sub>1</sub> increased from 63.3% to 85.4% during one month of inhaled bronchodilator combined with IGCS use.

**Conclusion:** IPBT combined with IGCS significantly prompts dyspnea decrease and respiratory symptoms expression and, at the same time, it prompts FEV<sub>1</sub> increase.

### P3498

#### Transbronchial lung biopsy, our results in 1197 patients

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**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 sarcoidosis 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.

**Conclusion:** We recommend TBLB for diagnosing focal pulmonary lesions and morphologic confirmation of sarcoidosis. For its safety TBLB is a convenient method even in other diseases mainly because numerous patients can avoid surgical lung biopsy.