RESPIRATORY DISEASES

[Abstract:0161]

A CONFUSED CASE OF PULMONARY TUBERCULOSIS (TB) WITH DEAD BRANCHES SIGN IN CHEST CT MIMICKING BRONCHIOLOALVEOLAR CARCINOMA

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The diagnosis of typical pulmonary tuberculosis relies on the evaluation of typical clinical symptoms, imaging features, and eventually the microbiological confirmation. However, atypical tuberculosis often goes undiagnosed, leading to irreversible damage to the lungs and respiratory tract. Here, we reported on a case of pulmonary TB in a Chinese aged thin woman admitted to our hospital. Her main complaints were recurrent high fever and cough with ineffective broad-spectrum antimicrobial therapy. Repeated smear microscopy and T-SPOT were negative for TB. The pulmonary infection with dead branches sign in chest CT should be differentiated from BAC. However, pulmonary TB was confirmed by acid-fast bacillus (AFB) staining of lung attached preparation obtained by computed tomography-guided percutaneous transthoracic needle biopsies (CT-PTNB) when the patient was in stable condition with effective treatment with linezolid. This study indicates that atypical pulmonary TB should be differentiated from BAC when dead branches sign displayed inside the consolidation on imaging features. And PNTB is valuable for the accurate diagnosis of pulmonary TB or other infective pneumonia. More importantly, attention should be devoted to TB diagnosis when lack of MRSA infected evidence but with effective linezolid treatment.

Keywords: *pulmonary tuberculosis, bronchioloalveolar carcinoma, methicillin-resistant Staphylococcus aureus*

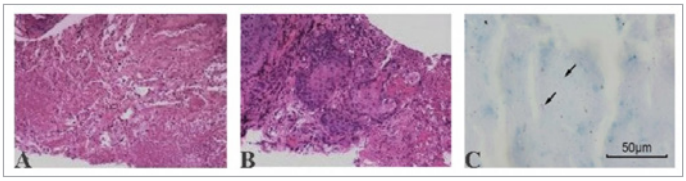

Figure 1. *Histopathologic examination. (A) granulomatous inflammation and (B) necrosis in the focus area. (C) AFB staining of lung attached preparation confirmed acid-fast bacilli (Black arrow)*

glucose	14.1 ↑ mmol/L	CYRA21-1	2.9 ng/mL
T-BIL	9 μmol/L	WBC	4.84×10^9/L
GGT	22 U/L	Neu	94.0 ↑%
ALT	8 U/L	Lym	4.3↓ %
AST	19 U/L	EOS	0.00
BUN	3.3 μmol/L	Hb	112↓ g/L
SCr	27↓ μmol/L	PLT	217×10^9/L
LDH	260↑ U/L	CRP	44.50 ↑mg/L
BNP	19 pg/ML	PCT	0.113 ng/mL
SCC	1.4 ng/mL	Serum CrAg test	(-)
NSE	45.1↑ ng/mL	Serum BG assay	(-)
Pro-GRP	37 ng/L	Serum GM assay	(-)
CEA	4.3 ng/mL	T-SPOT	(-)

Table 1. *Laboratory Findings at First Presentation. T-BIL=bilirubin, GGT=gamma-glutamyl transpeptidase, ALT= Alanine transaminase, AST=Aspartate transaminase, BUN=blood urea nitrogen, SCr=serum creatinine, LDH= lactate dehydrogenase, BNP= brain natriuretic peptide, SCC= squamous cell carcinoma antigen, NSE= neuron specific endase, pro-GRP= Human pro-gastrin-reliasing peptide, CEA= carcinoembryonic antigen, CYRA21-1= cytokeratin 19 fragment, WBC= white blood cell count, Neu= neutrophil count, Lym= lymphocyte count,EOS= eosnophils, Hb= hemoglobin, PLT= platelets,CRP= C-reactive protein, PCT= procalcitonin, CrAg test= cryptococcal capsular polysaccharide antigen test, BG assay= (1→3)-b-D-glucan antigen assay, GM assay= galactomannan antigen assay.*

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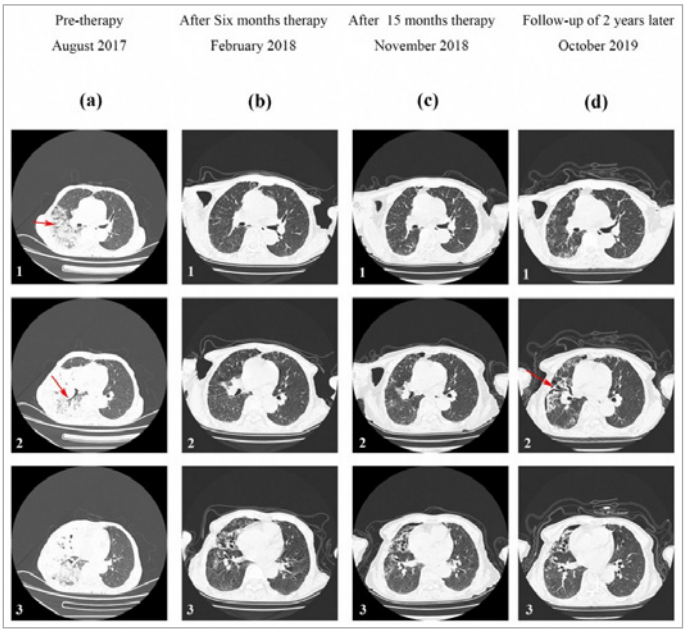

Figure 2. *Pre-and post-therapy CT scan. Honeycomb sign in Fig.a1 (Red arrow). Dead branches sign in Fig.a2 (Red arrow). New residual bronchiectasis in Fig. d2 (Red arrow).*

[Abstract:0225]

RE-EXPANSION PULMONARY EDEMA - A RARE BUT CRITICAL COMPLICATION

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Re-expansion pulmonary oedema (RPE) is an uncommon but potentially life-threatening complication that occurs after drainage for pleural effusion or pneumothorax, with an estimated incidence of less than 1%. This likely underestimates its prevalence, as RPE may manifest solely on radiographic images. Symptoms typically appear within 24 hours, with a significant 64% of patients experiencing them 1-2 hours after lung re-expansion. Clinical signs include chest discomfort, persistent cough, tachypnoea and hypoxemia. The precise pathophysiology remains elusive, but mechanisms causing increased vascular permeability during lung re-expansion are likely contributors.

Diagnosis depends on clinical history, blood gas analysis, and thoracic X-rays. RPE management primarily encompasses oxygen therapy, diuretics, and hemodynamic support, with mechanical ventilation reserved for severe cases. Although rare, RPE is associated with a substantial mortality rate, approximately 20%.

This abstract is followed by a representative Case: a 71-year-old male patient presented with a two-week history of dyspnoea. Radiological evaluation revealed a mediastinal mass and a prominent pleural effusion in the left hemithorax. Thoracocentesis yielded 1500 mL drainage, with subsequent development of respiratory distress and desaturation within an hour. A thoracic X-ray confirmed ipsilateral pulmonary oedema, leading to an RPE diagnosis. Treatment involved diuretics and non-invasive ventilation, but an inadequate response necessitated endotracheal intubation and mechanical ventilation. Regrettably, the patient succumbed to complications shortly thereafter.

Keywords: *re-expansion pulmonary oedema, thoracocentesis, pleural effusion*

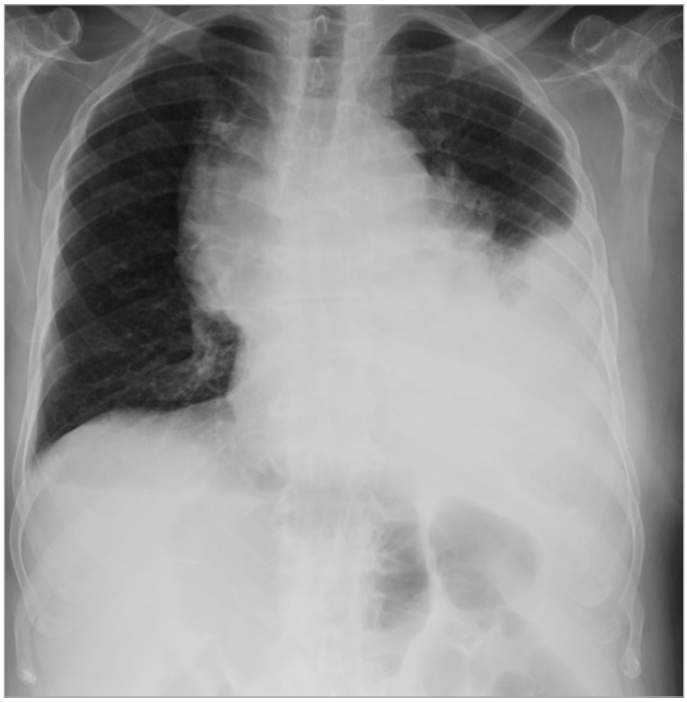

Figure 1. *Pleural effusion.*

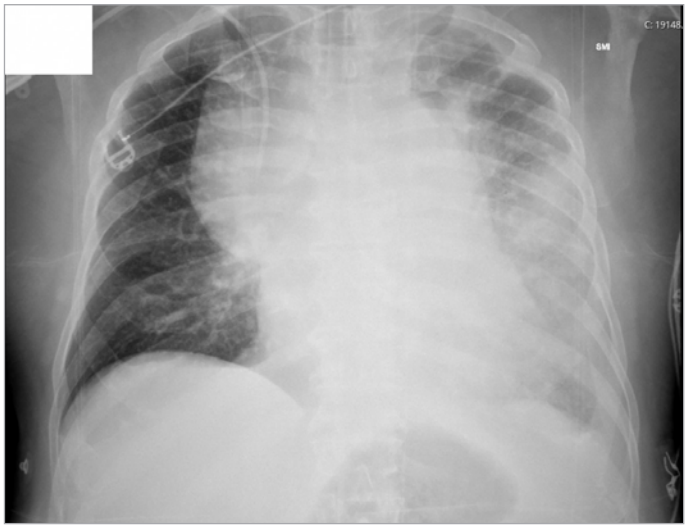

Figure 2. *Re-expansion oedema.*

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[Abstract:0229]

RECLASSIFICATION OF COPD PATIENTS INTO EOSINOPHILIC PHENOTYPE AND THERAPEUTIC IMPLICATIONS

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The objective of this work was to analyse how many patients would be undertreated following the new GesEPOC eosinophilic phenotype classification, and to describe the differences between patients under treatment with inhaled corticosteroids versus those without, in a cohort of COPD patients admitted due to exacerbation of their disease in a third-level hospital.

We used a cohort of 256 patients with COPD, of which 156 were admitted in Internal Medicine throughout 2017. Those patients with 100-300 eosinophils/mL (n=59) and >300 eosinophils/mL (n=21) were selected.

80 patients had eosinophils >100/mL, of which 76.3% were men, the mean age was 76.7 years, with a FEV1 of 58%, and 20% were active smokers.

73.4% of patients with eosinophils >100/mL received treatment with inhaled corticosteroid, as did 76.2% of patients with >300 eosinophils/mL.

Patients with inhaled corticosteroid therapy had higher baseline eosinophil levels (76.2% vs 50.8%, p=0.032). We observed a greater use of inhaled corticosteroid therapy in patients with history of smoking (61.5% vs 28.4%, p=0.047).

We found statistically significant differences in the levels of haemoglobin (13.44 g/dL vs 12.36 g/dL; p=0.021), haematocrit (40.35% vs 37.17%, p=0.013) and platelets (226000/mL vs 188000/mL, p=0.034) in patients with inhaled corticosteroid therapy.

We didn't find differences in terms of hypertension, dyslipidaemia, diabetes, heart failure, liver disease, kidney disease, osteoporosis, thyroid disorders, use of oral corticosteroid therapy, cognitive impairment or in inflammatory parameters, nor in in FEV1 in both groups of patients. We also didn't find differences in terms of number of days of admission or subsequent exacerbations.

Keywords: COPD, eosinophilia, therapeutic implications

[Abstract:0378]

DEVELOPMENT OF THE MULTIDIMENSIONAL ASSESSMENT IN COPD (MAC) SCORE FOR SHORT- AND MEDIUM-TERM PROGNOSIS IN ELDERLY COPD PATIENTS AT HIGH-RISK OF ACUTE EXACERBATION

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Background: Accurately detecting comorbidities is essential for improving COPD outcomes. We hypothesize that Cumulative Illness Rating Scale (CIRS) (see figure 1), could measure the comorbidity burden in COPD-setting. Study objectives were to demonstrate a better predictive performance of CIRS in COPD outcomes compared with the validated prognostic indices in the COPD-setting and to develop a new CIRS-based score ("Multidimensional Assessment in COPD (MAC)) for both the evaluations of comorbidity burden and the COPD severity.

Methods: We enrolled 105 participants with an ascertained COPD diagnosis and at high risk of AE-COPD. For the MAC score development, comorbidity was measured using the CIRS-Severity Index, whereas respiratory variables were calculated according to CODEx thresholds. The primary outcome was a composite of moderate or severe AE-COPD within 52-weeks. The secondary outcomes were severe AE-COPD at 12-weeks and at 52-weeks since the enrolment;

Results: CIRS indices were associated with the primary outcome (see Table 1 and 2). All CIRS c-statistics were superior to those of the established prognostic COPD indices for the primary outcome and were superior for the secondary outcomes except to those of the CODEx Index (see Table 3, 4 and 5). All MAC score (see Figure 6) c-statistics showed a better predictive performance on both the primary and secondary outcomes (see Table 6,7 and 8).

Conclusions: CIRS is a valuable tool for assessing comorbidities, showing superior predictive performance than other established prognostic indices. By combining CIRS with respiratory variables, MAC score significantly improves predictive performance on both short-to-medium-term COPD outcomes.

Keywords: multimorbidity, chronic obstructive pulmonary disease, cumulative illness rating scale, acute exacerbation of COPD, COPD

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The Modified Cumulative Illness Rating Scale (CIRS).					
Body system	Score				
1. Cardiac (heart only)	0	1	2	3	4
2. Hypertension (rating is based on severity; organ damage is rated separately)	0	1	2	3	4
3. Vascular (blood, blood vessels and cells, bone marrow, spleen, lymphatics)	0	1	2	3	4
4. Respiratory (lungs, bronchi, trachea below the larynx)	0	1	2	3	4
5. EENT (eye, ear, nose, throat, larynx)	0	1	2	3	4
6. Upper GI (esophagus, stomach, and duodenum; pancreas; do not include diabetes)	0	1	2	3	4
7. Lower GI (intestines, hernias)	0	1	2	3	4
8. Hepatic (liver and biliary tree)	0	1	2	3	4
9. Renal (kidneys only)	0	1	2	3	4
10. Other GU (ureters, bladder, urethra, prostate, genitals)	0	1	2	3	4
11. Muscolo-skeletal-integumentary (muscle, bone, skin)	0	1	2	3	4
12. Neurological (brain, spinal cord, nerves, do not include dementia)	0	1	2	3	4
13. Endocrine-Metabolic (includes diabetes, thyroid; breast; systemic infections; toxicity)	0	1	2	3	4
14. Psychiatric/Behavioral (includes dementia, depression, anxiety, agitation/delirium, psychosis)	0	1	2	3	4

Table 1. *Cumulative Illness Rating Scale (CIRS).*
Several indices were derived from the CIRS. The total score (TSC) represents the cumulative sum of all 14 individual system scores. The severity index (SV) is determined by averaging the scores of the initial 13 categories, excluding psychiatric assessments. The comorbidity index (CM) was computed as the count of categories with a score of 2 or higher, encompassing psychiatric evaluations as well. [J Am Geriatr Soc 56:1926–1931, 2008.]

	Adjusted Hazard Ratio ± 95% Confidence Interval
CIRS - Total Score	1.17 (1.10-1.24), p<0.0001
CIRS - Severity Index	1.25 (1.14-1.36), p<0.0001
CIRS - Comorbidity Index	1.63 (1.36-1.96), p<0.0001

Table 2. *Results of Cox Regression analysis according CIRS Indices as continuous variables accounting for CAT score, GOLD Class, Age and Gender as confounding variables.*
A one-point increase in the CIRS-Total Score, CIRS-Severity Index, and CIRS-Comorbidity Index resulted in a 17%, 25%, and 63% increase in the risk of moderate or severe exacerbation of COPD in 52 weeks. [CAT: COPD assessment score; CIRS: Cumulative Illness Rating Scale; GOLD: Global Initiative for Chronic Obstructive Lung Disease]

	Adjusted Hazard Ratio (95% Confidence Interval)
Severity Index - Tertile High	4.51 (2.45-8.30)*
Severity Index - Tertile Intermediate	0.51 (0.27-0.97)**
Severity Index - Tertile Low	0.29 (0.12-0.72)*

Table 3. *Probability of moderate to severe exacerbations in 52 weeks according to the tertiles of CIRS Severity Index.*
*Since there were no data in the literature and we wanted to conduct a group analysis, we divided our sample into tertiles, showing that higher complexity in terms of comorbidities was a risk factor for COPD exacerbations, as well as lower complexity was a protective factor. * = p<0.01; ** = p<0.05; [COPD: Chronic obstructive pulmonary disease]*

	Area Under the Curve (AUC)	95% Confidence Interval
CIRS-Total Score	0.786	0.697-0.874
CIRS-Severity Index	0.790	0.710-0.882
CIRS-Comorbidity Index	0.808	0.729-0.882
DOSE Index	0.694	0.595-0.793
CODEx Index	0.727	0.633-0.821
Charlson Comorbidity Index	0.609	0.501-0.717
COMCOLD	0.597	0.494-0.699

Table 4. *Results of c-statistics of CIRS indices for primary outcome.*
CIRS Indices shows a statistically significant better performance in predicting moderate/severe COPD exacerbations in 52 weeks compared with the already validated COPD prognostic indices (DOSE, CODEx, Charlson Comorbidity Index and COMCOLD).

	Area Under the Curve (AUC)	95% Confidence Interval
CIRS-Total Score	0.641	0.500-0.781
CIRS-Severity Index	0.640	0.501-0.778
CIRS-Comorbidity Index	0.661	0.541-0.781
DOSE Index	0.644	0.519-0.772
CODEx Index	0.680	0.561-0.798
Charlson Comorbidity Index	0.626	0.500-0.752
COMCOLD Index	0.606	0.472-0.740

Table 5. *Results of c-statistic analysis of secondary outcome (severe COPD exacerbation in 12 weeks).*
CIRS Indices shows a better performance in predicting severe COPD exacerbations in 12 weeks compared with DOSE, COMCOLD, Charlson Comorbidity Index but not with CODEx Index.

	Area Under the Curve (AUC)	95% Confidence Interval
CIRS-Total Score	0.714	0.500-0.781
CIRS-Severity Index	0.726	0.501-0.778
CIRS-Comorbidity Index	0.708	0.541-0.781
DOSE	0.697	0.519-0.772
CODEx	0.742	0.561-0.798
Charlson Comorbidity Index	0.630	0.500-0.752
COMCOLD Index	0.660	0.472-0.740

Table 6. *Results of c-statistic analysis of secondary outcome (severe COPD exacerbation in 52 weeks).*
CIRS Indices shows a better performance in predicting severe COPD exacerbations in 52 weeks compared with DOSE, COMCOLD, Charlson Comorbidity Index but not with CODEx Index.

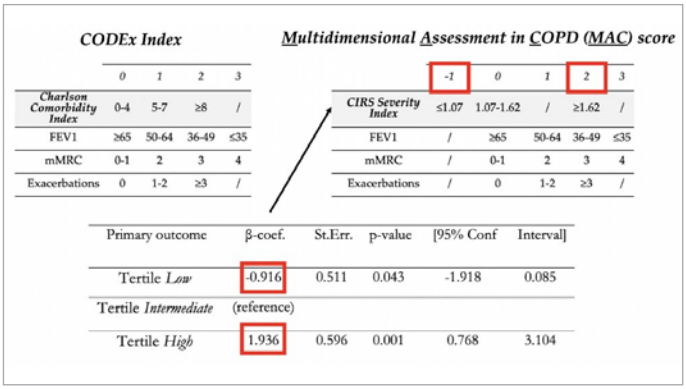

Table 7. *Development of Multidimensional Assessment in COPD (MAC) score.*
Considering the demonstrated consistent predictive superiority of the CIRS indices against the Charlson Comorbidity Index, we constructed the "Multidimensional Assessment in COPD (MAC) score" by substituting the CIRS Severity Index for the Charlson comorbidity index, one of the four domains of the CODEx Index. To calculate the scores to be assigned, we constructed a logistic regression model, calculated the beta coefficients and approximated them to the closest unit value. (-1 for the low tertile and 2 for the high tertile, considering the Intermediate tertile as the reference group).

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	Area Under the Curve (AUC)	95% Confidence Interval
MAC score	0.812	0.731-0.892
DOSE Index	0.694	0.592-0.803
CODEx Index	0.742	0.648-0.836
Charlson Comorbidity Index	0.630	0.513-0.746
COMCOLD Index	0.659	0.552-0.766

Table 8. Results of c-statistic of MAC score for primary outcome (moderate-to-severe AE-COPD at 52-weeks).
MAC score showed a better performance in predicting moderate-to-severe AE-COPD at 52 weeks compared with DOSE, CODEx, Charlson Comorbidity Index and COMCOLD.

	Area Under the Curve (AUC)	95% Confidence Interval
MAC score	0.778	0.687-0.868
DOSE Index	0.697	0.592-0.803
CODEx Index	0.742	0.648-0.836
Charlson Comorbidity Index	0.630	0.513-0.746
COMCOLD Index	0.659	0.552-0.766

Table 9. Results of c-statistic of MAC score for secondary outcome (severe AE-COPD at 52-weeks).
MAC score showed a better performance in predicting severe AE-COPD at 52 weeks compared with DOSE, CODEx, Charlson Comorbidity Index and COMCOLD.

	Area Under the Curve (AUC)	95% Confidence Interval
MAC Score	0.699	0.583-0.814
DOSE Index	0.644	0.516-0.772
CODEx Index	0.680	0.561-0.798
Charlson Comorbidity Index	0.626	0.500-0.752
COMCOLD Index	0.609	0.472-0.740

Table 10. Results of c-statistic of MAC score for secondary outcome (severe AE-COPD at 12-weeks).
MAC score showed a better performance in predicting severe AE-COPD at 12 weeks compared with DOSE, CODEx, Charlson Comorbidity Index and COMCOLD.

[Abstract:0390]

ORGANIZING PNEUMONIA ASSOCIATED WITH ACUTE MYELOID LEUKEMIA: A CASE REPORT

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Introduction: Organizing pneumonia (OP) is a secondary process in many diseases. The incidence of OP is very low in haematological malignancies, and data are limited.
Purpose: To present a rare case of histologically confirmed OP associated with acute myeloid leukaemia.
Materials and Methods: A male patient, 64 years old, with individual reminders of COPD, lobectomy of the left lung due to small cell lung cancer 7 years ago, dyslipidaemia, and diabetes mellitus II, was admitted to a regional hospital due to fever for a few days with accompanying diarrhoea and weight loss for 6 months. Pancytopenia was found on a blood count and a consolidation in the periphery of the right upper lobe on a chest CT (Figure 1A). The patient underwent a bone marrow biopsy and a biopsy of a lung lesion, given its failure to resolve with moxifloxacin first and then piperacillin-tazobactam and vancomycin.
Results: A bone marrow biopsy revealed marrow infiltration in 40% of cases of acute myeloid leukaemia. The patient was transferred to our clinic for treatment of acute myeloid leukaemia. Histologic examination of the lung biopsy revealed organizing pneumonia lesions without documented acute myeloid leukaemia infiltration. The patient received chemotherapy with aracytin and idarubicin, and a repeat chest CT showed significant regression of the lung lesion without the administration of corticosteroids (Figure 1B).
Conclusions: Acute myeloid leukaemia is a rare cause of OP, and its treatment leads to resolution of OP even without the administration of corticosteroids.

Keywords: *acute lymphoid leukaemia, organizing pneumonia, chemotherapy*

[Abstract:0407]

CHRONIC EOSINOPHILIC PNEUMONIA: REGARDING THE DIAGNOSIS OF A CASE

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A 30-year-old woman with a history of allergic rhino conjunctivitis, and asthma, without bronchodilator treatment, presented with a 4-week exertion dyspnoea, low-grade fever, and non-productive cough. She followed an outpatient empirical treatment with amoxicillin/clavulanic acid and inhaled corticosteroids without improvement. An in-hospital chest x-ray revealed bilateral peripheral lung opacities as well as substantial eosinophilia (>10,000/L). Complementary tests revealed an elevated total IgE, with negative results for all autoantibodies, including ANCAs, as well as blood cultures, virus, parasites, precipitins of Aspergillus, S. pneumoniae, and Legionella antigens. The bronchoalveolar lavage (BAL) cytology revealed acute and chronic inflammation without eosinophils. Despite the BAL result, chronic eosinophilic pneumonia was suspected, and methylprednisolone treatment was initiated, with excellent response within 48 hours.
A lung cryobiopsy was then done, showing results consistent with organizing pneumonia and eosinophils associated with the resolving phase of chronic eosinophilic pneumonia, corroborating the diagnostic suspicion.

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Discussion: Chronic eosinophilic pneumonia is defined by symptoms lasting more than two weeks, an abnormal chest x-ray (negative for pulmonary oedema), eosinophilia of 25% (usually 40%) in BAL, blood (>1000/L), and the exclusion of other pathologies such as parasitic infection and allergic bronchopulmonary aspergillosis. However, if previous corticosteroid treatment (even inhaled) has been initiated, there may be difficulties in the diagnosis due to the absence of eosinophilia in the blood or BAL. Yet, the presence of typical features suggests the condition, and BAL is not required for diagnosis, though a lung biopsy could be done if the presence of alveolar eosinophils is to be proven.

Keywords: *chronic eosinophilic pneumonia, diagnosis, cryobiopsy*

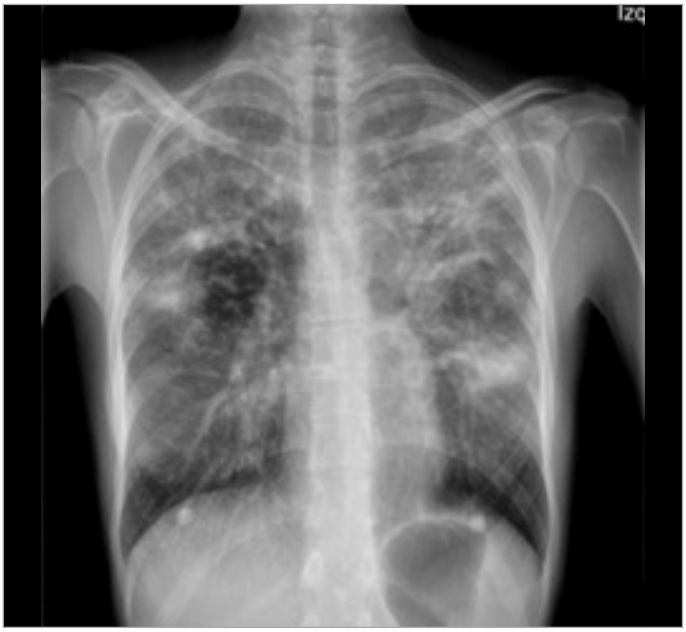

Figure 1. *Chest X-ray at the beginning of the symptoms.*

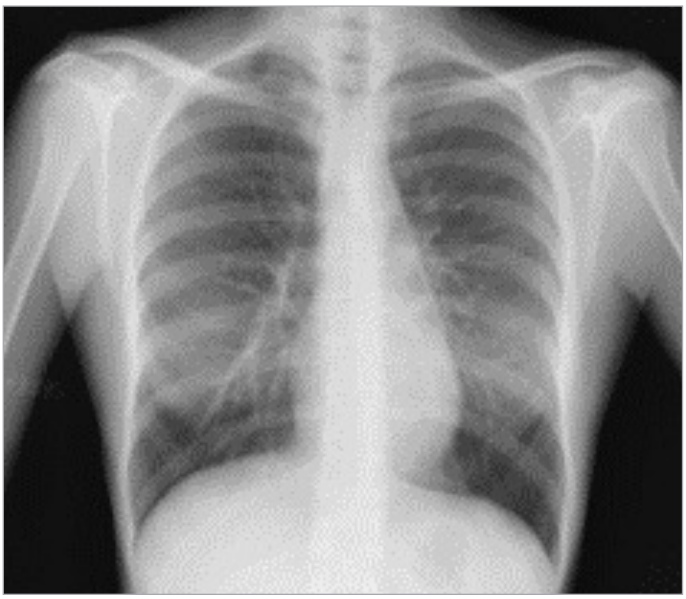

Figure 2. *Chest X-ray three months after starting corticosteroid treatment.*

[Abstract:0414]

LUNG INVOLVEMENT IN PARANEOPLASTIC SCLERODERMA

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Paraneoplastic scleroderma is a rare manifestation of systemic scleroderma that occurs in association with an underlying neoplasm. One of its most worrying manifestations is its potential to affect the respiratory system, particularly with lung involvement. Lung involvement can occur in several ways, and the severity can vary according to the patient and level of involvement. A comprehensive understanding of paraneoplastic scleroderma with pulmonary involvement is crucial to provide a multidisciplinary approach to the patient, with the aim of defining a therapeutic and prognostic strategy.

Case Presentation: 70-year-old woman, personal pathological history of invasive breast carcinoma, micropapillary, Stage IIA, underwent left tumorectomy with axillary dissection in May 2008. At this stage she also underwent chemotherapy and radiotherapy with hormone therapy (she underwent 5 years of tamoxifen). Sent to Internal Medicine Consultation in 2022 to study peripheral asymmetric polyarthritis and sclerodactyly. From the study in consultation, anti-centromere A and B positivity and positive ANA 1/1280 nuclear pattern; capillaroscopy compatible with early scleroderma with exuberant megacapillaries, without microhemorrhages; manometry with normal peristaltic activity of the body, hypotonic lower oesophageal sphincter, with relaxation receptive to normal swallowing. An echocardiogram was also performed with dilation of the left heart cavities but without indirect signs of pulmonary hypertension and respiratory function tests without changes. Associated with interstitial pneumopathy with radiotherapy sequelae on High Resolution Chest CT with several traction bronchiectasis in the left apical region, with some ground glass densifications, which is related to probable post-radiotherapy fibrosis.

Keywords: *paraneoplastic scleroderma, lung involvement, multidisciplinary approach to the patient*

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[Abstract:0415]

TAPSE/SPAP RATIO STRATIFIES MORTALITY RISK IN MILD-TO-MODERATE IDIOPATHIC PULMONARY FIBROSIS

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Background: Due to paucity of literature data, we aimed at evaluating the prognostic role of tricuspid annular plane systolic excursion (TAPSE)/systolic pulmonary artery pressure (SPAP) ratio in idiopathic pulmonary fibrosis (IPF) patients without severe pulmonary hypertension and at assessing its correlation with effective arterial elastance index (EaI).

Methods: Multi-instrumental data obtained in 60 IPF patients (73.2 ± 6.8 years) and 60 matched controls were retrospectively analysed. Primary endpoint was all-cause mortality, while secondary endpoint was the composite of all-cause mortality and rehospitalizations for all-causes, over medium-term follow-up.

Results: At baseline, TAPSE/SPAP was significantly lower in IPF patients than controls (0.36 ± 0.25 vs 0.77 ± 0.18 mm/mmHg, P<0.001). TAPSE/SPAP was inversely correlated with EaI (r = -0.96) in IPF patients. During follow-up (3.5 ± 1.5 yrs), 21 patients died and 25 were re-hospitalized due to cardio-pulmonary causes. TAPSE/SPAP was independently associated with both primary (HR 0.79, 95%CI 0.65 - 0.97) and secondary (HR 0.94, 95%CI 0.92 - 0.97) endpoints. A TAPSE/SPAP ratio <0.20 and <0.44 mm/mmHg showed the greatest sensitivity and specificity for predicting primary (AUC = 0.98) and secondary (AUC = 0.99) endpoint, respectively.

Conclusions: TAPSE/SPAP is a strong predictor of adverse outcome in mild-to-moderate IPF. The strong correlation between TAPSE/SPAP and EaI might be expression of a systemic fibrotic process which involves heart, lung, and circulation.

Keywords: *interstitial lung disease, cardiovascular disease, TAPSE/SPAP, effective arterial elastance, outcome*

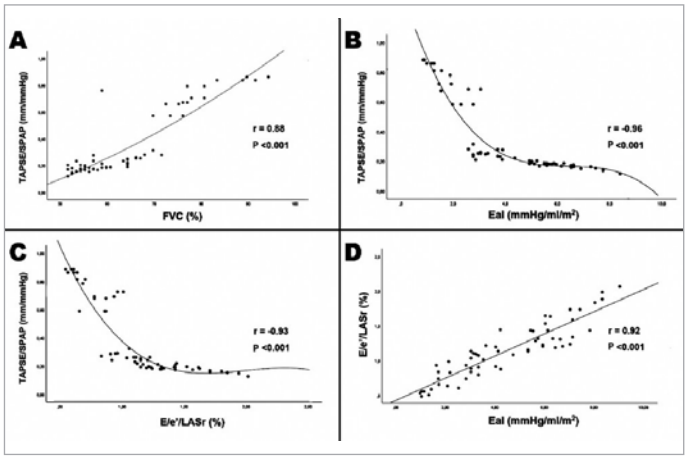

Figure 1. Correlation and best fitting-lines for describing the relationship between TAPSE/SPAP ratio and each of the following: FVC (Panel A), arterial elastance (Panel B), left atrial stiffness, expressed by the E/e'/LASr ratio (Panel C); and finally between arterial elastance and left atrial stiffness (Panel D), in IPF patients, at basal evaluation. FVC, forced vital capacity; IPF, idiopathic pulmonary fibrosis; LASr, left atrial reservoir strain; SPAP systolic pulmonary artery pressure, TAPSE tricuspid annular plane systolic excursion.

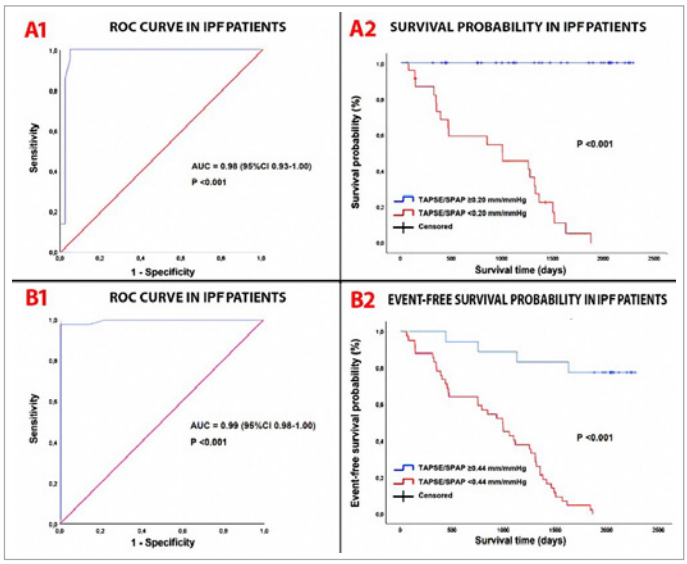

Figure 2. Prognostic ROC curves and Kaplan-Meier survival curves drawn to compare the rates of the endpoint "all-cause mortality" (Panels A1 and A2) and the endpoint "all-cause mortality plus rehospitalizations for all causes" (Panels B1 and B2) in IPF patients, categorized according to TAPSE/SPAP value < 0.20 and ≥ 0.20 mm/mmHg for the primary endpoint and < 0.44 and ≥ 0.44 mm/mmHg for the secondary endpoint. AUC, area under the curve; IPF, idiopathic pulmonar fibrosis; ROC, receiver operating characteristics; SPAP systolic pulmonary artery pressure, TAPSE tricuspid annular plane systolic excursion.

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[Abstract:0533]

GOOD PASTEUR SYNDROME (ANTI-GBM DISEASE) WITHOUT RENAL MANIFESTATION: A CASE REPORT

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Good Pasteur Syndrome is an autoimmune disorder of type 4 collagen that affects both kidneys and lungs by the formation of autoantibodies that attacks their basement membranes. Pulmonary involvement is seen in 25-60% of patients and is usually manifested as diffuse alveolar haemorrhage.

We report a non-typical case of anti-GBM; 29 yr old lady who had multiple admission with symptoms of haemoptysis and acute respiratory distress requiring 15L Oxygen. Initial impression was of pneumonia but based on imaging but later on diagnosed as Good Pasteur syndrome with detectable GBM titres. Patient continued to deteriorate even after a course of IV steroids and eventually responded to plasmapheresis and IV cyclophosphamide in intensive care unit (CT and Chest X-rays showed worsening ground glass appearance and pulmonary haemorrhages). Throughout her hospital stay and outpatient review her renal function remained stable and there was no evidence of proteinuria/haematuria. Relevant imaging has also been attached with this abstract.

The diagnosis of Isolated Pulmonary Good Pasteur is made through testing anti GBM antibodies in serum whilst also obtaining kidney biopsy. Imaging is mostly in keeping with diffuse ground-glass changes in keeping with pulmonary disease and in our case went to have pulmonary haemorrhages.

Prognosis of Good Pasteur syndrome is poor without proper treatment in 90%of cases leading to early death or lifelong dialysis. However, with combines therapies the 5-year survival rate is around 80% with 30% of patients requiring long term dialysis.

Keywords: *pulmonary haemorrhage, anti-GBM, good pasteur syndrome*

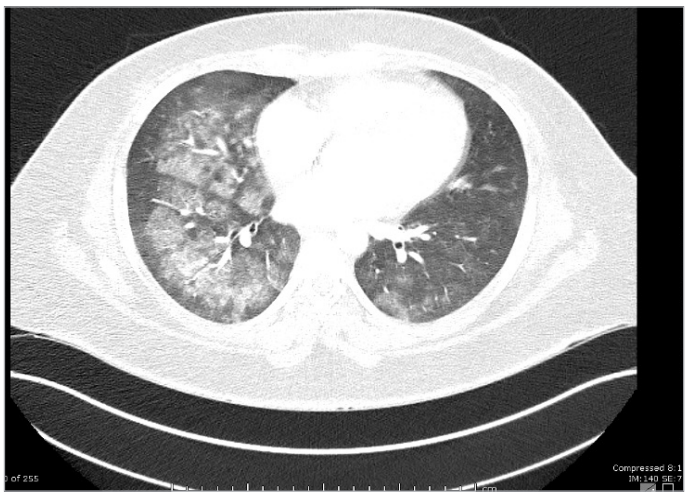

Figure 1. *CTPA 26/11.*
Initial CTPA completed showing extensive consolidation seen in the right lung on the chest x-ray is seen to involve all 3 right lung lobes. Treated with IV antibiotic therapy.

Figure 2. *Chest X-Ray 5/12.*
Patient's x-ray on 2nd admission when came with worsening haemoptysis. Shows right sided consolidation unchanged and now further patchy consolidation on the left mid to lower zone. At this point patient was treated with IV steroids

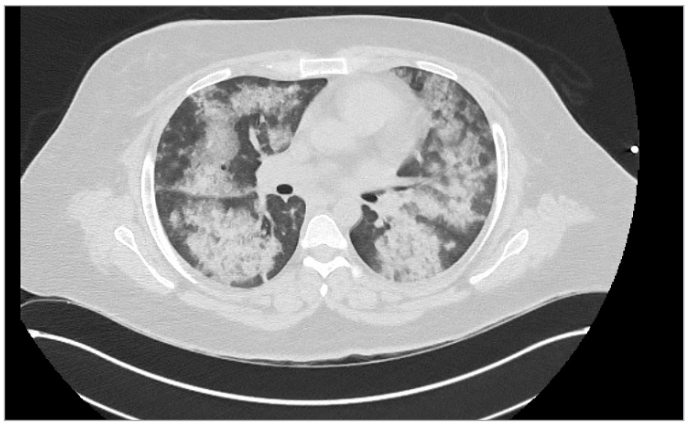

Figure 3. *CT Thorax 18/12.*
CT Thorax on 3rd Admission. Patient re-presented with worsening haemoptysis and hypoxia. CT showed Progressive pulmonary opacities, likely representing haemorrhage, in comparison to 26/11/2022. Now also much more prominent on the present on the left side. Patient was transferred to ITU for plasmapheresis.

Figure 4. *Chest X-ray 19/12.*
Pre-plasmapheresis and IV cyclophosphamide Chest x-ray.

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Figure 5. Chest X-ray 22/12.
Post-plasmapheresis and IV cyclophosphamide Chest x-ray reported as improving bilateral mid and lower zone consolidation, most pronounced in the right lower zone. Patient discharged from hospital and remained stable on subsequent outpatient reviews.

⚠ *The authors did not provide the missing figures upon requests from the event organizer*

[Abstract:0664]

A 73-YEAR-OLD WOMAN WITH DAYTIME SLEEPINESS AND MORNING HYPERTENSION: IS IT JUST OBSTRUCTIVE SLEEP APNEA?

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A 73-year-old woman was admitted to hospital complaining of elevated blood pressure, more intense in the morning, restless sleep, and daytime sleepiness. Hypertension for the last 4 years with poor medical compliance. She reported a combined polytrauma after a fall in 2021, which led to limited shoulder movement. Recently she underwent a replacement of the right hip joint due severe osteoarthritis. BMI: 31.3 kg/m^2. BP 160/90 P 70 RR 16. SpO_2 96%. Blood and urine samples are within normal ranges. Polysomnography revealed severe obstructive sleep apnoea (AHI 31.6 events/h) and signs of sleep related hypoventilation. Sleep latency was increased, and sleep efficiency was reduced. Sleep structure was altered by multiple microarousals, awaking and delta sleep deficiency.

X-ray examination of the chest showed cardiodiaphragmatic lipoma and partial relaxation of the right dome of the diaphragm. There were no focal or infiltrative changes in the lungs.

Daytime pCO_2: 40 mmHg. Spirometry demonstrated no deviations. The relaxation of the right dome of the diaphragm and sleep hypoxia, which cannot be explained only by obstructive apnoea, may be due to compression of the right diaphragmatic nerve. Possible causes are traumatic injury and cardiodiaphragmatic lipoma.

Thus, diaphragmatic dysfunction may have unusual clinical manifestations – from subclinical respiratory disorders to severe alterations in sleep. The identification of its origin and optimal management of the symptoms are the main internist's goals.

Keywords: sleep disorders, diaphragmatic dysfunction, obstructive sleep apnoea

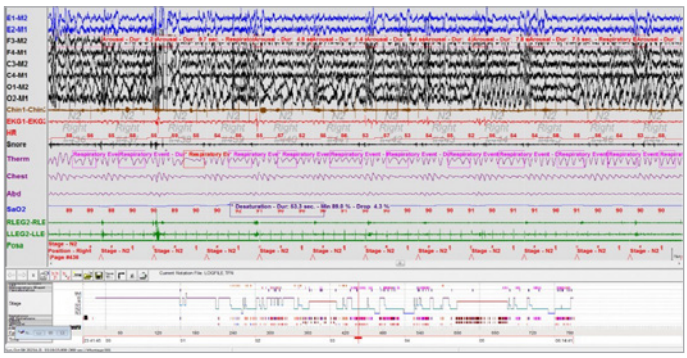

Figure 1. Polysomnography results: obstructive apnoea/hypopnea events.

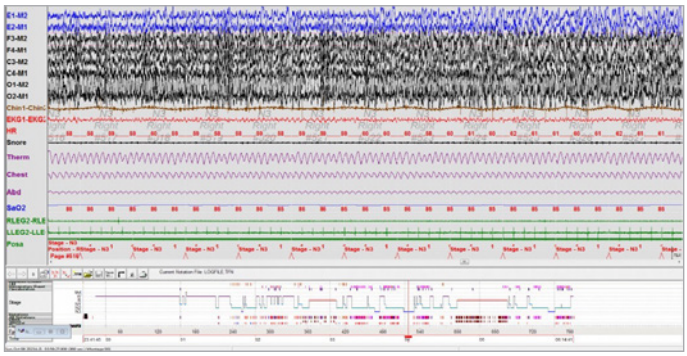

Figure 2. Polysomnography results: sleep related hypoventilation.

[Abstract:0738]

UNEXPLAINED DYSPNEA AND SYSTEMIC LUPUS ERYTHEMATOSUS "SHRINKING LUNG SYNDROME"

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Introduction: Respiratory pulmonary crying during LES is common; while diaphragmatic impairment called "shrinking lung syndrome" (SLS) remains rare; but must be evoked before any unexplained dyspnoea in a lupic.

Materials and Methods: We report the case of a lupic patient whose diagnosis of SLS was brought before such a table. A 19-year-old woman; single; known for LES for 02 years; who has stopped treatment for 06.which consults for dyspnoea and chest pains.

Results: The patient is hospitalized for febrile, dyspnoea stage III of NYHA with desaturation which worsens in orthostatism, chest pain and palpitation at 130 btt/min. Biology has shown inflammatory syndrome with C3 and C4 lows. The chest X-ray noted a fine bilateral pleural liquid spreading blade with ascent of the two diaphragmatic hemi-cupolas. The thoracic angiosanner returning in favour of a pericardial weeping effusion of low abundance; atelectasia under segmentary band of the two bases and in particular on the left without signs of pulmonary embolism. The EFR recovered a restrictive syndrome (CVF to 23% of the theory) the picture improved rapidly to the increase of corticosteroids to 01 mg/kg/D.

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Conclusions: The SLS is mentioned systematically in the presence of an unexplained dyspnoea during the LES.

Keywords: *systemic lupus erythematosus, shrinking lung syndrome, dyspnoea*

[Abstract:0813]

EXOGENOUS LIPOID PNEUMONIA SECONDARY TO USE OIL TO LUBRICATE TRACHEOSTOMY TUBES - CASE REPORT

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Case Description: A 60-year-old Caucasian male presented with increased temperature and severe dyspnoea. His medical history included larynx cancer that was operated on 17 years ago with additional radiation therapy and a tracheostomy. Clinical worsening was noticed one month ago, and a chest X-ray was performed showing bilateral infiltrative shadows. Antibacterial therapy was prescribed without effect. Additional data in medical history showed that during the last two years, the patient has used sterile peach oil to lubricate tracheostomy tubes. Before the symptom presentation, there was a violation of the temperature storage conditions of the vial with peach oil at home. It was found that the patient had risk factors for exogenous lipoid pneumonia and aspiration pneumonia.

Clinical Hypothesis: Exogenous lipoid pneumonia.

Diagnostic Pathways: Chest computed tomography was performed showing massive consolidation foci with different-sized areas of fat density in the right middle lobe and both lower lobes of the lungs (Figure 1). On the periphery of the areas of consolidation, there were large areas of ground-glass opacity and centrilobular and acinar foci of low density. Prednisolone 20 mg daily treatment was initiated. Additional therapy included acetylcysteine, metronidazole, and cefditoren. Two weeks later, we observed symptom relief.

Discussion and Learning Points: Exogenous lipoid pneumonia should be considered a possible diagnosis in case of any non-resolving pneumonia. Patients after tracheostomy with pneumonia should be asked about the medical history of using oil to lubricate tracheostomy tubes.

Keywords: *pneumonia, lipoid pneumonia, tracheostomy, larynx cancer*

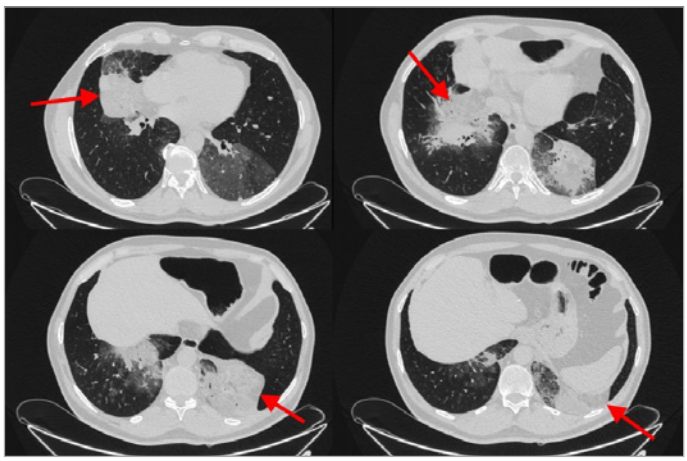

Figure 1. *Chest computed tomography. Areas of fat-density in lungs marked by arrows.*

[Abstract:0845]

CLINICAL VALUE OF ADMA, L-ARGININE, AND ARGINASE-1 IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Department of Faculty Therapy named after prof. V.Ya. Garmash, Ryazan State Medical University, Ryazan, Russia

Introduction: In the development of obstructive diseases there is the role of nitric oxide (NO). There is interest in studying the clinical value of L-arginine, asymmetric dimethylarginine (ADMA), and arginase-1 which can modulate NO synthesis in patients with COPD.

Aim: To study ADMA, L-arginine, and arginase-1 levels in plasma patients with COPD.

Materials and Methods: The I stage of the study included 82 people with a median age of 56 [52; 60] years who were divided into two groups – 61 patients with COPD and 21 healthy volunteers. The II stage of the study included 108 patients with COPD with a median age of 61 [57; 68] years who were divided into groups by the GOLD ABCD classifications. The groups were non-different by gender, age, and smoking status. The level of L-arginine, ADMA, and arginase-1 in plasma was measured by ELISA using Cloud-Clone Corp. (China) laboratory kits.

Results: At the I stage there is no difference between the main and control group by plasma level of ADMA, L-arginine, and arginase-1 ($p=0.861$, $p=0.174$, $p=0.064$ respectively). At the II stage was found that the severity of airflow obstruction in COPD patients was associated with plasma level of ADMA and arginase-1 ($p=0.002$ and $p<0.001$ respectively) (Table 1). Also was found that the clinical group by GOLD classification in COPD patients was associated with the plasma level of ADMA, L-arginine, and arginase-1 ($p<0.001$, $p<0.001$, and $p<0.001$ respectively) (Table 2).

Conclusions: Level of ADMA, L-arginine, and arginase-1 associated with clinical features in COPD patients.

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Keywords: *chronic obstructive pulmonary disease, nitric oxide, l-arginine, arginase, biomarkers*

Severity of airflow obstruction	GOLD 1	GOLD 2	GOLD 3	GOLD 4	p
ADMA, ng/ml	79.65 [42.63; 122.97]	101.35 [94.08; 106.90]	18.30 [10.90; 117.00]	11.65 [10.58; 13.07]	0.002
L-arginine, μg/ml	9.35 [8.22; 9.88]	10.30 [7.55; 15.02]	7.60 [6.20; 10.80]	7.10 [5.63; 25.80	0.107
Arginase-1, ng/ml	1.34 [0.93; 3.35]	1.40 [0.98; 2.21]	3.90 [1.10; 9.70	16.90 [10.45; 24.85]	<0.001

Table 1. *Level of biomarkers by severity of airflow obstruction.*

ABCD clinical group	A	B	C	D	p
ADMA, ng/ml	102.80 [98.10; 110.80]	103.85 [95.02; 126.75	15.25 [10.67; 104.05]	12.05 [9.70; 99.70]	<0.001
L-arginine, μg/ml	10.80 [9.50; 14.80]	11.40 [8.03; 16.28]	6.80 [5.13; 9.47]	7.45 [6.23; 11.25]	<0.001
Arginase-1, ng/ml	1.20 [0.80; 2.00]	1.11 [0.98; 1.48]	5.65 [1.33; 9.20]	9.60 [2.61; 23.65]	<0.001

Table 2. *Level of biomarkers by GOLD ABCD classification.*

[Abstract:0941]

THE CAPNOVOLUMETRIC METHOD IN ASSESSING THE FUNCTIONAL RESPIRATORY STATUS OF A PATIENT WITH COPD

Irina Borisovna Ponomareva[1], *Oleg Mikhailovich Uryasev*[1], *Ilya Vladimirovich Panin*[2]

[1] Department of faculty therapy named after V. Ya Garmash,Ryazan State Medical University, Ryazan, Russia

[2] X-ray department of Emergency hospital, Ryazan, Russia

Spirometry is a key method in the diagnostics of COPD. However, measuring of the degree of bronchial obstruction is insufficient for a full assess of the patient's functional respiratory status. Capnovolumetry can detect carbon dioxide concentration dependence on the volume of exhaled air. The purpose of this work is to identify additional opportunities of volumetric capnography method in the study of pulmonary functions in patients with COPD.

Materials and Methods: The study involved 87 males, of which 44 patients are with COPD. Spirometry and volumetric capnography using an ultrasound computer spirograph SpiroScout (Ganshorn, Germany) are performed in each patient. Parameters of spirometry and volumetric capnography were analysed.

Results: The obtained results showed significant differences between patients with COPD and control group in the parameters reflecting the shape of the capnography curve: in patients with COPD, there was an increase in dMM / dV3-the slope of phase III (0.39 ± 0.17) in comparison with the control group (0.24 ± 0.18) P <0.001, as well as a decrease in dMM / dV2- with COPD, this indicator was 2.5 ± 0.59, while in the control group 3.79 ± 0.62 P <0.001.

Conclusions: The volumetric capnography is an additional diagnostic tool for the evaluation of pulmonary functions in patients with COPD.

Keywords: *COPD, volumetric capnography, pulmonary functions*

[Abstract:0959]

INTRAPULMONARY ELECTRONIC AUSCULTATION IN CHRONIC OBSTRUCTIVE PULMONARY DISEASES

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Asthma and chronic obstructive pulmonary disease (COPD) are the most common obstructive respiratory diseases worldwide. Auscultative picture of bronchial obstruction: hard breathing, wheezing ("wheezes"), sometimes wheezing ("wheeze") on exhalation.

Aim: The objective of the study is to create and implement a method of intrapulmonary auscultation, to obtain and analyse audio and video recordings at various levels of the tracheobronchial tree.

The study included 35 patients with asthma and 31 patients with COPD. During traditional bronchoscopy, video recording was carried out with simultaneous recording of sounds using a specially designed microphone. In parallel, recording of wheezing from the surface of the chest with an electronic stethoscope (3M Littmann Electronic Stethscope 3200.

Results: Breathing sounds were assessed in the following ways: assessment of the visual spectrum, Fourier spectral analysis, analysis of the amplitude-frequency characteristics (AFC) of wheezing. The AFC and duration of wheezing during intrapulmonary auscultation are exceeds the traditional one ($p<0.01$) (frequency range up to 600 Hz and duration up to 200 mc), no significant differences in the AFC of wheezing in bronchial asthma and COPD were obtained ($p>0.05$). Video recording registered flutter at the level of the 3rd and 4th orders of the bronchi. The flutter produced low frequency amplitudes - up to 400 Hz.

Conclusions: Intrapulmonary auscultation allows you to objectively identify wheezing in adult patients with chronic obstructive pulmonary diseases, to evaluate wheezing, mechanisms and levels of its occurrence, and ultimately allows you to adjust therapy

Keywords: *asthma, COPD, wheezing, intrapulmonary auscultation*

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[Abstract:0973]

THE EFFECT OF NICOTINE ON THE CELLULAR IMMUNE SYSTEM IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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One of the common lung diseases associated with tobacco smoking is COPD. There are many unclear questions regarding the involvement of the immune system in the development of the disease. The effect of nicotine on cellular immunity in COPD has practically not been studied.

Objective: To study the effect of nicotine on the proliferative activity of peripheral blood lymphocytes in response to phytohemagglutinin (PHA) in patients with COPD.

Materials and Methods: 52 patients with COPD were examined. The control group included 32 patients. All patients filled in CAT questionnaires, mMRC dyspnoea scales, and they also underwent spirometry, a study of the proliferative activity of lymphocytes in response to phytohemagglutinin and the functional activity of cells synthesizing cyclooxygenase.

Results: A decrease in the proliferative activity of lymphocytes in response to PHA was found out in patients with COPD, compared with similar indicators in patients without COPD (50.4 ± 10.2% vs. 55.0 ± 10.2%, $p<0.05$), as well as an increase in the activity of cells synthesizing cyclooxygenase (1.2 ± 0.3 vs. 1.0 ± 0.2 $p<0.001$). The combined addition of nicotine to cell culture in the majority of patients led to a decrease in the proliferative activity of cells in response to the mitogen, and in a third - to an increase.

Conclusions: Patients with COPD experience suppression of cellular immune responses against the background of inflammation. Nicotine in vitro suppresses the lymphocyte response to mitogen in most patients, but in some patients it causes stimulation, the cause of which remains unclear.

Keywords: *COPD, cellular immunity, nicotine, tobacco smoking*

[Abstract:1110]

FEATURES AND ASSESSMENT OF THE SEVERITY OF DIGESTIVE INVOLVEMENT IN ADULT RHEUMATOID PURPURA

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Introduction: Rheumatoid purpura (RP) is a systemic immune complex vasculitis affecting small vessels several organs are affected. Digestive manifestations are frequent and have a short-term prognostic impact.

Methods: We conducted a single-centre descriptive retrospective study over 8 years, including patients with a diagnosis of RA based on clinical, histological and EULAR/PRINTO/HSP PRES 2008 classification data.

Results: Thirty patients were included, sex ratio M/F 0.87, with a mean age of 45.6 years. Digestive involvement was present in 20 patients. Digestive bleeding occurred in 50% of cases. The haemorrhage was melena in 4 cases, rectal bleeding in 3 cases and haematemesis in 2 cases. Associated melena and haematemesis in one case. Using the CT severity score for adult RA, digestive involvement was considered severe in 7 cases.

Fibroscopy revealed congestive gastropathy in 84.2%, petechial purpura in 31.57%, and erosive gastropathy in 21.05%. Colonoscopy was performed for 40% of the patients, showing diffuse petechial lesions in 2 patients, erosive rectitis in one and congestive rectosigmoiditis in another. Seventeen patients with digestive involvement were treated with corticosteroids. Relapse or persistence of the disease was observed in 5 patients, indicating a switch to second-line treatment with Cyclophosphamide (digestive disease associated with renal disease) or Azathioprine. Spontaneous remission was observed in 3 patients.

Conclusions: Digestive involvement in RP is crucial to short-term survival. In the absence of a clear consensus on the indications for treatment, clinicians can rely on severity scores, which identify patients for whom systemic immunosuppressive treatment is indicated.

Keywords: *rheumatoid purpura, digestive, severity score, haematology, rare diseases*

[Abstract:1122]

THE ROLE OF THE INTERNAL MEDICINE PHYSICIAN IN DYSPNEA IN THE MEDICAL-SURGICAL SERVICES

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Hospital Universitario Clínico San Cecilio, Internal Medicine Department, Granada, Spain

Purpose: To assess the benefit of the Internal Medicine Consultation Unit (IMCU) in the management of dyspnoea in patients hospitalized in the different services of the hospital.

Methods: Descriptive study of all interconsultations made to our service, from January 15 to April 15 of 2023.

Findings: Dyspnoea accounted for 21% of the consultations made to Internal Medicine (27 patients out of a total of 130, excluding Traumatology), the majority of which came from surgical services (66%). Almost all interconsultations (26) were carried out on a preferential way and attended to in less than 24 hours.

The 63% of patients underwent some type of surgery; highlighting that 88% of them presented dyspnoea as a complication after

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the intervention. The most common cause of dyspnoea was decompensation of heart failure (44%), followed by respiratory infection (37%). Only 40% of the patients had a previous diagnosis of heart disease (mainly valvular disease) and/or lung disease (mainly COPD). In more than 70% of cases, dyspnoea caused a delay in hospital discharge.

Conclusions: Dyspnoea is a frequent reason for consultation with Internal Medicine, mainly from surgical services. The importance of the IMCU lies in his capacity for correct diagnostic and treatment in this kind of patients (sometimes without any known medical history), thus achieving a reduction in both the hospital stay and their morbidity and mortality.

Keywords: *interconsultation, dyspnoea, surgery*

[Abstract:1168]

MARBLE EAR AND PERSISTENT DYSPNEA

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Keutel Syndrome (KS), a rare genetic disorder, is characterized by extensive cartilage calcification, brachytelephalangia, pulmonary stenosis, midline anomalies, punctate epiphyses in infancy, hearing impairment, and recurrent respiratory infections, often mimicking asthma. We report the case of a 23-year-old female with a history of asthma-like symptoms since childhood, who presented with dyspnoea and wheezing. Initial treatments targeting asthma proved ineffective. Diagnostic investigations, including a sinus CT scan, pulmonary function test, and fiberoptic bronchoscopy, indicated tracheal stenosis and revealed calcifications in the respiratory tract. Histopathological analysis of biopsy samples showed squamous metaplasia and calcifications beneath the surface epithelium, alongside a mild to moderate lymphoplasmacytic inflammatory reaction. A transthoracic echocardiogram indicated Stage 1 diastolic dysfunction. The patient's ear cartilage appeared firm and inflexible upon physical examination. The diagnosis of Keutel Syndrome was confirmed through genetic analysis, which identified a homozygous *c.43delG* mutation in exon 1 of the MGP gene. This case represents the 43rd documented instance of Keutel Syndrome in scientific literature and the fifth associated with the *c.43delG* mutation. Our findings underscore the importance of considering KS in differential diagnosis for patients presenting with resistant asthma-like symptoms and calcifications in cartilaginous structures.

Keywords: *Keutel syndrome, tracheal stenosis, dyspnea, asthma*

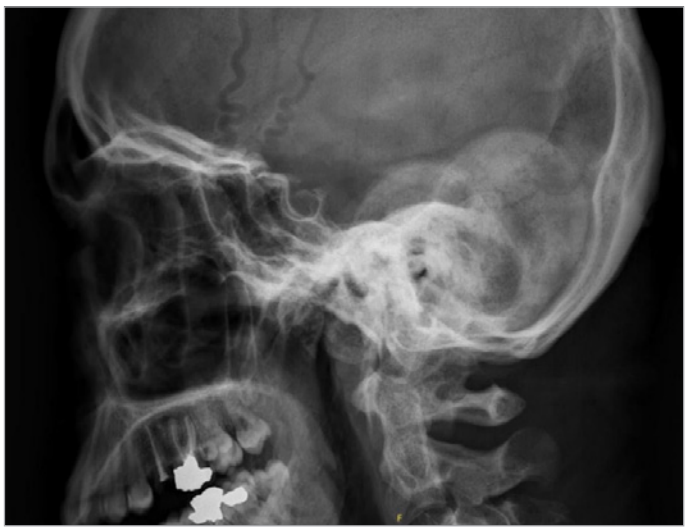

Figure 1. *The ear cartilages are pronouncedly visible in the head X-ray.*

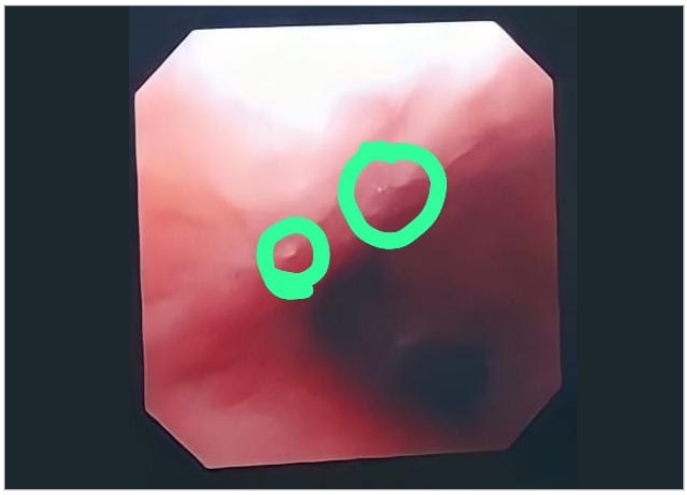

Figure 2. *Cified focus observed during fiberoptic bronchoscopy. The area marked with a green circle indicates calcification foci.*

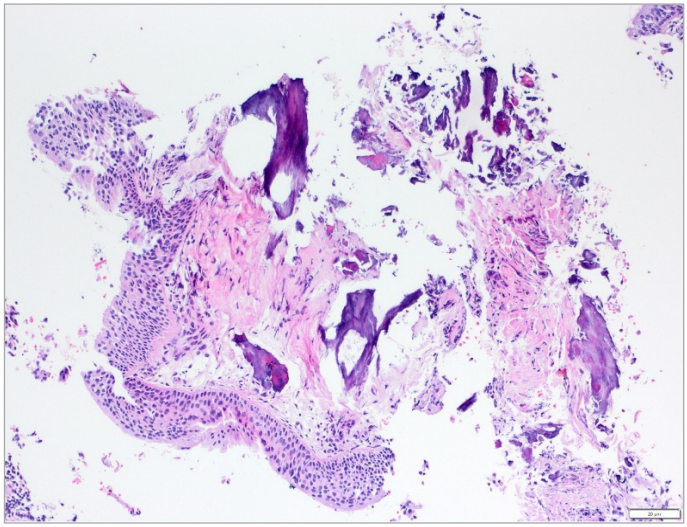

Figure 3. *Psy specimen obtained from the bronchial mucosa of the patient.*

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[Abstract:1287]

SUDDEN HYPOXEMIA: DIFFERENTIAL DIAGNOSIS OF ORTHODEOXIA

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Case Description: A 93-year-old woman was brought to the emergency department due to disorientation, suggesting undiagnosed chronic cognitive impairment. Blood and urine tests, as well as, a chest X-ray were performed, but the results were unremarkable. While in the emergency department, she suffered several episodes of sudden desaturation up to 70% which did not correct with high-flow oxygen therapy. Arterial blood gas analysis confirmed partial respiratory failure.

Clinical Hypothesis: Sudden partial respiratory failure.

Diagnostic Pathway: In order to complete the study, a blood test was carried out which showed an elevated D-dimer, so a computed tomography angiography was requested. This ruled out pulmonary thromboembolism (PTE) but showed overload of the right cavities. It was therefore decided to perform a ventilation perfusion scintigraphy, which confirmed the absence of PTE. While re-evaluation, it was observed that the desaturation was associated with the upright position, but it corrected in decubitus position, which means that the patient had platypnea-orthodeoxia syndrome. To determine the aetiology of this syndrome, a liver ultrasound and a transthoracic echocardiogram (TTE) with agitated saline were performed. The ultrasound was normal, ruling out hepatopulmonary syndrome. The TTE confirmed the passage of bubbles in Valsalva, diagnosing the presence of a patent foramen ovale (PFO).

Discussion and Learning Points: Orthodeoxia-platypnea syndrome is a condition that must be taken into account for a correct diagnosis of sudden hypoxemia. If this syndrome is suspected, it is essential to rule out PFO, hepatopulmonary syndrome and pulmonary arteriovenous malformations.

Keywords: *hypoxemia, platypnea-orthodeoxia syndrome, patent foramen ovale*

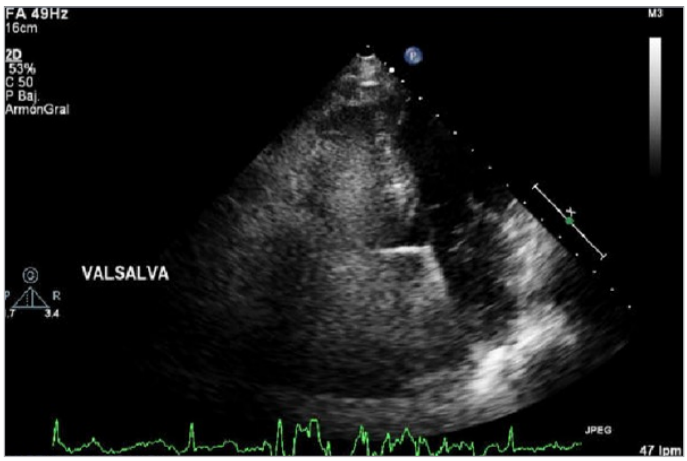

Figure 1. *Transthoracic echocardiogram (TTE).*
Patient TTE which shows an abnormal passage of bubbles in Valsalva, confirming the diagnosis of patent foramen ovale.

[Abstract:1293]

LUNG ABSCESS: A CASE STUDY

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An 83-year-old woman with arterial hypertension, diabetes mellitus type 2, dyslipidaemia and hypothyroidism presented to the emergency room with a 2-week history of non-quantified weight loss, fatigue, swelling of the lower limbs. There was no reference to fever, chest pain or cough.

On admission, she was febrile 39ºC, had a blood pressure of 107/64 mmHg, pulse rate of 76 beats per minute, respiratory rate of 19 per minute and an oxygen saturation under room air of 95%. Lung auscultation on the right revealed diminished breath sounds in the inferior half and there was visible oedema of the lower limbs. Blood work showed anaemia with haemoglobin of 10,4 g/dL, high leucocyte count (13.2 x10^9/L) with neutrophilia, high C reactive protein (26.58 mg/dL) and erythrocyte sedimentation rate (121 mm/h), and NT-proBNP was 1053 pg/mL.

A chest radiogram showed a right pleural effusion that was later better characterized by chest CT scan that revealed a fluid collection on the right lung with a longitudinal diameter of 14.6 cm that could represent a pulmonary abscess.

The patient was admitted with the diagnosis of lung abscess and acute heart failure. She started antibiotics, a chest drain was inserted, and a pleural decortication was performed. The blood cultures and the microbiologic exam of the pleural liquid did not identify any bacteria.

To this day she has taken antibiotics for 11 days, she is afebrile, the inflammatory parameters keep lowering and she is clinically feeling better.

Keywords: *abscess, lung, drain*

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[Abstract:1414]

MAC INFECTION IN THE ELDERLY: TO TREAT OR NOT TO TREAT?

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Mycobacterium avium complex (MAC) is a non-tuberculous mycobacterium that usually causes lung disease in patients with structural changes. Although rare, pleural involvement does occur and not all cases require treatment.

We present an 88-year-old ex-smoker with chronic lung disease (bronchiectasis and emphysema), who was submitted to a chest tomography showing a micronodular pattern and whose bronchial lavage and sputum isolated *Mycobacterium intracellulare*. Treatment was postponed, given his asymptomatic state, age, low cure rates, and uncertain impact on quality of life. A few years later, he was hospitalized for recurrent right pleural effusion: exudative pleural fluid, predominantly mononuclear, with increased ADA, negative mycobacteriology, pleural biopsy without granulomas but MAC identification in sputum. Chest tomography showed right middle and upper lobe consolidations and middle lobe cavitation. Treatment with rifampicin, ethambutol and azithromycin was started because of the suspicion of *Mycobacterium intracellulare* infection, the recurrent nature of the pleural effusion and the patient's good condition. Treatment was tolerated without side effects, leading to improvement of pleural effusion and negative sputum culture at 4 months. Unfortunately, neoplastic complications led to the patient's death 10 months later.

Identifying MAC does not mean treating it. The need for treatment is determined by an individual assessment of benefits and potential risks. With this case, we would like to highlight the good tolerability of MAC treatment in an elderly patient, which is usually an important consideration in the decision to start treatment.

Keywords: *MAC infection, pleural effusion, treatment*

[Abstract:1444]

THERAPEUTIC MANAGEMENT OF COPD EXACERBATION IN INTERNAL MEDICINE

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Objectives: Evaluating the appropriate use of inhaled therapy, corticosteroids, and antibiotics are crucial aspects of patient care with COPD. This study aims to understand the management of therapies for COPD patients in internal medicine.

Materials and Methods: We conducted a retrospective observational study, including all patients whose primary discharge diagnosis was "COPD exacerbation" in 2022.

Results: 112 patients were included, with 83.9% being males and 89.3% current or former smokers. According to GESEPOC classification, 58.9% were non-exacerbators, 29.5% non-eosinophilic exacerbators, and 11.6% eosinophilic exacerbators. Based on GOLD classification, 47.3% were in group A, 17.0% in group B, and 35.7% in group E. Analytically, eosinophil counts were < 100 in 23.2%. During hospitalization, all patients received inhaled therapy. 90.2% received systemic corticosteroids. Antibiotic therapy was administered to 90.2%. Sputum culture was performed in 58 patients. The most isolated bacterial strain was MRSA and E. Coli, while SARS-CoV-2 and influenza A and RSV were predominant at the viral level. Colonies of *C. albicans* were isolated.

Discussion: Regarding pre-admission treatment, corticosteroid use influenced the length of hospitalization, although not significantly. A notable relationship was observed between *C. albicans* colonization and corticosteroid use. However, this use did not align with guidelines:

- GESEPOC: 23.21% due to eosinopenia < 100, 16.07% due to being non-exacerbators.
- GOLD: 23.21% due to eosinopenia < 100, with 14.29% in group A and 6.25% in group B.

Conclusions: 1. Prior corticosteroid use influenced hospitalization duration without statistical significance.

2. A significant relationship was found between *C. albicans* colonization and corticosteroid use.

Keywords: *exacerbation, COPD, corticosteroid*

[Abstract:1505]

E-VALI: THE RISK OF FOLLOWING TRENDS

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A 20-year-old male, with no previous medical history, made his fourth visit to the emergency room, reporting odynophagia, cough, nausea, vomiting, and recent haemoptysis. His earlier visits were prompted by right upper quadrant pain, with inconclusive ultrasound results. Among the patient's history, he had participated in marijuana harvesting (denying consumption), admitting only to being a daily "vaper" and an occasional hookah user.

Upon arrival, the patient exhibited severe respiratory distress, with oxygen saturation at 75% and a respiratory rate of 40 breaths per minute. He was admitted to the ICU for oxygen support and underwent a contrast-enhanced chest CT angiography, revealing bilateral diffuse alveolar haemorrhage without active bleeding or signs of pulmonary embolism.

Laboratory results indicated C-reactive protein at 263.4 mg/L, negative procalcitonin, B-type natriuretic peptide at 1,600 pg/mL, troponins at 589pg/mL, haemoglobin level of 11 mg/dL and

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leukocytosis with neutrophilia. Viral respiratory panel, serologies, cultures and autoimmune analysis were negative.
The patient showed excellent progress, with complete cessation of haemoptysis and gradual reduction in oxygen support until its withdrawal within 4 days. He only received empiric antibiotic therapy (ceftriaxone and azithromycin) for 5 days, without corticosteroids. Electronic-cigarette or vaping-associated lung injury (E-VALI) was first described in 2019. According to CDC guidelines, the patient met the criteria for a "confirmed case", including e-cigarette use in the previous 90 days, pulmonary infiltrates on CT, exclusion of infection, and the absence of autoimmune or cardiac causes. Regarding the treatment, there is not currently consensus, but intravenous corticosteroids appear to have demonstrated an acceleration in recovery.

Keywords: *diffuse alveolar haemorrhage, e-cigarette, haemoptysis*

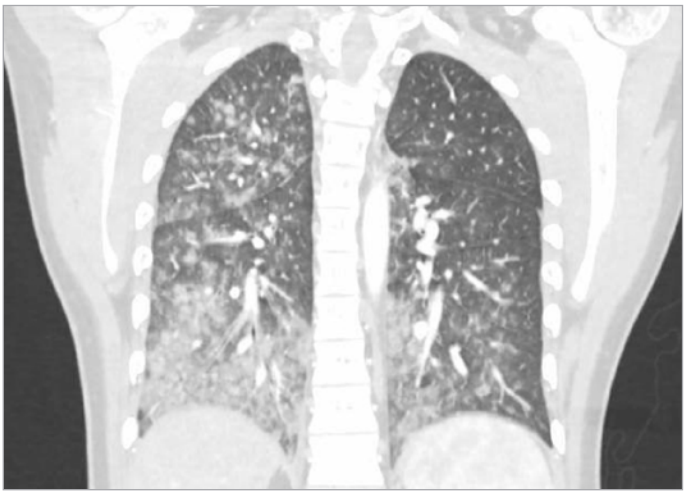

Figure 1. *CT showing bilateral diffuse alveolar haemorrhage.*

[Abstract:1630]

INFLUENCE OF STATIN THERAPY ON PULMONARY AND SYSTEMIC INFLAMMATON, ENDOTHELIAL DYSFUNCTION, AND OXIDANT-ANTIOXIDANT BALANCE IN COPD PATIENTS

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Purpose: To analyse effects of rosuvastatin on pulmonary and systemic inflammation, oxidative stress, antioxidants, endothelial dysfunction, and clinical status in chronic obstructive pulmonary disease (COPD) patients.
Methods: 180 patients with stable COPD Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2-3 were recruited. All patients were without cardiovascular diseases, had no history of statin use, and had a high or a very high cardiovascular (CV) risk according to SCORE (Systematic Coronary Risk Estimation) and SCORE 2. To correct the CV risk, we prescribed rosuvastatin to 90 COPD patients for 12 months. The other 90 patients were in the control group.
Findings: After rosuvastatin treatment, there was a decrease of inflammatory cytokines (tumour necrosis factor-alpha (TNF-α) (26.7%, p=0.001), interleukin-8 (IL-8) (32.6%, p=0.001)), and anti-inflammatory cytokines (IL-4 (15.4%, p=0.001), IL-10 (16.5%, p=0.001)) in the blood. We found a statistically significant decrease of TNF-α (26.0%), interleukin-8 (48.0%), IL-4 (67.0%), IL-10 (37.0%) in bronchoalveolar lavage BAL fluid. In the control group, blood TNF-α and IL-4 as well as BAL fluid TNF-α, IL-8, IL-4, and IL-10 increased (p=0.001). After rosuvastatin treatment, the following parameters showed a decrease: high-sensitivity C-reactive protein (CRP) (21.5%, p=0.001); soluble vascular cell adhesion molecule 1 (sVCAM-1) (28.9%, p=0.003); COPD exacerbations (25%, p<0.001); COPD Assessment Test score (21.4%, p<0.001); activity of COPD symptoms according to the St. George's Respiratory Questionnaire (20%, p<0.001). Exercise tolerance increased (13.2%, p<0.001).
Conclusions: Rosuvastatin reduces pulmonary and systemic inflammation in COPD patients, demonstrates endothelium-correcting and antioxidant effects, and reduces COPD symptoms and exacerbations.

Keywords: *COPD, statins, inflammation*

[Abstract:1688]

MEPOLIZUMAB EFFICACY IN SEVERE EOSINOPHILIC ASTHMA: A CASE SERIES ANALYSIS

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Summary: This abstract details a case series exploring the effectiveness of Mepolizumab, an anti-IL-5 monoclonal antibody, in treating severe eosinophilic asthma. Traditional treatments like inhaled and oral corticosteroids often prove inadequate, necessitating alternative therapies.
Purpose: Mepolizumab is approved for treating severe eosinophilic asthma but still under clinical trials in India, we present an experience of case series treating adults with mepolizumb and to evaluate the efficacy and safety of Mepolizumab in adult patients with long-standing, severe eosinophilic asthma inadequately controlled by high-dose inhaled corticosteroids.
Methods: Three patients (a 40-year-old man, a 32-year-old man, and a 55-year-old woman) with a history of severe asthma having symptoms of dyspnoea, tightness of chest, wheezing, cough and phlegm and using high-dose inhaled corticosteroid and of poorly-

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controlled asthma are presented. They have blood eosinophil counts ≥150 cells/μL (or ≥300 cells/μL in the prior year) and also elevated eosinophil counts in sputum were administered with Mepolizumab were monitored for prognosis.

Findings: Post-treatment, all patients demonstrated notable improvements in asthma control, health status, and a reduction in exacerbation rates. Additionally, there was a decrease in the reliance on oral corticosteroids.

Conclusions: Mepolizumab proves to be an effective and tolerable treatment for adults with uncontrolled severe eosinophilic asthma, presenting a viable alternative to traditional corticosteroid therapies.

Keywords: *eosinophilic asthma, mepolizumab, inhaled corticosteroids, asthma exacerbation, asthma control, anti-IL-5 monoclonal antibody*

[Abstract:1692]

IS ANAEMIA A PROGNOSTIC FACTOR IN COPD PATIENTS?

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The objective was to analyse differences between COPD patients with and without anaemia, in a cohort of patients admitted due to exacerbation of their disease in a tertiary hospital.

We used a cohort of 213 patients with COPD admitted to Internal Medicine in 2017. 165 of 213 patients were men (77.5%), of which 57 had anaemia (Hb <13 g/dL). 26 of 48 women included had anaemia (Hb <12 g/dL). Mean haemoglobin was 12.9 g/dL.

We found a higher percentage of patients with anaemia in women compared to men (54% vs 34%, p=0.01). Likewise, in patients with anaemia we found a higher rate of heart failure (60% vs 50%, p=0.04) and hypertension (90% vs 70% p=0.03), with no differences found in the presence of diabetes, dyslipidaemia, use of corticosteroids, cognitive impairment, smoking habit, nor in cardiovascular events. We also found a higher rate of death (30% vs 20% p=0.08) and exacerbations after previous admission in patients who had anaemia compared to those who did not (75.9% vs 63.8%, p=0.06). We found no differences in mortality in patients with anaemia or in the presence of cardiovascular events in the 3 months after admission, neither in the need for readmission.

In patients with COPD, anaemia has been associated with age, female sex, comorbidities, thinness, emphysema, home oxygen therapy and number of admissions in the previous year. Lung parenchyma and airway inflammation increases systemic cytokine production that causes anaemia of chronic disease. Other conditions such as iron deficiency, malnutrition, and chronic kidney disease contribute to anaemia in COPD patients.

Keywords: *anaemia, COPD, prognostic*

[Abstract:1960]

FACTORS RELATED TO MORTALITY IN PATIENTS WITH NON-CF BRONCHIECTASIS

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Aim: To evaluate the mortality rate and the factors associated with it in a cohort of patients with non-CF bronchiectasis (NCFB).

Methods: Aetiology, clinical data, paraclinical features and disease severity scores were analysed in a prospective cohort of 448 patients with NCFB (57% men, 41% smokers). The Kaplan-Meier method was used for survival analysis. After univariate analysis, Cox proportional hazards regression model and multivariate analysis were used to identify independent predictors of death.

Results: A mortality rate of 27% (121 cases) was reported after 36 months of follow-up. Descriptive statistics revealed significant differences between the characteristics of patients who died and those who survived. Cox regression identified age (RR 1.02; 95%CI: 1.02-1.04; p<0.0001), dyspnoea (RR 2.72; 95%CI: 2.12-3.51; p<0.0001), smoking (RR 1.52; 95%CI: 1.12-2.05; p=0.006), *P. aeruginosa* colonization (RR 1.45; 95%CI: 1.02-2.04; p=0.03), history of pneumonic exacerbation (RR 1.44; 95%CI: 1.01-2.08; p=0.04) as risk factors for death. Among imaging features, the presence of segmental/lobar collapse (RR 1.44; 95%CI: 1.16-1.8; p=0.0009), emphysema (RR 1.34; 95%CI: 1.06-1.69; p<0.01) and cystic bronchiectasis (RR 1.28; 95%CI: 1.08-1.5; p=0.003) were related to mortality. Among the clinical and paraclinical features, advanced age, severe dyspnoea (mMRC), P. aeruginosa colonization, history of pneumonic exacerbations, decreased DLCO, and reduced SaO_2 were found to be independent predictors of death. Cox analysis showed a predictive capacity for death for all multidimensional grading scales (BSI, FACED, E-FACED) and BACI comorbidity index.

Conclusions: Multiple factors contribute to unfavourable outcomes in patients with NCFB, and identifying these early may help to improve care.

Keywords: *bronchiectasis, mortality, risk factors*

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[Abstract:2100]

COMORBIDITIES IN PATIENTS WITH NON-CYSTIC FIBROSIS BRONCHIECTASIS AND THEIR IMPACT ON MORTALITY

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Aim: To evaluate comorbidities in patients with bronchiectasis and to determine their prognostic value for disease severity and mortality.

Methods: Aetiology, clinical data, paraclinical features, comorbidities, disease severity scores and comorbidity indices were analysed in a prospective cohort of 448 patients with NCFB. After univariate analysis, Cox proportional hazards regression model and multivariate analysis were used to identify independent predictors of death. The BACI index and the Charlson comorbidity index were evaluated to show the impact of comorbidities on disease severity and their predictive role, especially in multimorbid patients.

Results: Patients with NCFB had a variety of comorbid conditions. Despite the fact that a large number of patients were under 60 years of age, only 39 patients (9%; 95%CI: 6.3-11.6) had no comorbidities. A total of 30 different comorbidities were identified in our cohort, 18 of which were associated with increased mortality in univariate Cox proportional hazards analysis. After 36 months of follow-up, the reported mortality rate was 27% (121/448 cases). Multivariate Cox proportional hazards analysis identified only 3 comorbidities as independent predictors of death: pulmonary hypertension (HR 1.7; 95%CI: 1.17-2.7; p=0.006); COPD (HR 1.66; 95%CI: 1.08-2.6; p=0.01) and HIV infection (HR 4.9; 95%CI: 2.37-10.1; p<0.0001). The BACI index and the Charlson index showed a good correlation (r=0.6; p<0.0001).

Conclusions: Bronchiectasis is a heterogeneous disease and can be associated with a variety of comorbidities. Pulmonary hypertension, COPD and HIV infection were related to a worse prognosis and were an independent risk for death.

Keywords: *bronchiectasis, BACI, comorbidities, Charlson, mortality*

[Abstract:2121]

TUBERCULIN SKIN TEST (TST) NEGATIVITY IN PULMONARY SARCOIDOSIS AND ITS USE FOR SCREENING IN TUBERCULOSIS-ENDEMIC REGIONS

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Introduction: Sarcoidosis is a multisystemic granulomatous disease of unknown aetiology affecting multiple organs but primarily lungs. Clinical, radiological, and histopathological similarities with tuberculosis pose a great challenge in countries endemic for tuberculosis.

Objectives: Our aim was to see if TST negativity would be useful in distinguishing between sarcoidosis and tuberculosis in tuberculosis-endemic regions.

Materials and Methods: We retrospectively analysed TST results of 551 sarcoidosis patients from Turkey, which is a tuberculosis-endemic country, who had histopathologically confirmed sarcoidosis and had malignancy and tuberculosis excluded.

Results: Our analyse showed that of the 551 patients analysed, 381 (69.15%) were TST negative while 170 (30.85%) were TST positive. Detailed results according to disease stage are given below (Table 1).

Conclusions: Our research shows that TST negativity is a useful indicator for distinguishing between sarcoidosis and tuberculosis in tuberculosis endemic areas, and while there were a limited number of stage IV patients, TST was shown to be highly sensitive for sarcoidosis across all other disease stages and in general sarcoidosis population.

Keywords: *sarcoidosis, tuberculosis, TST, skin, test, negative*

Radiological Stage	Number of patients	TST negative	TST positive	TST negative (%)
Stage 0	48	35	13	72.91%
Stage I	294	202	92	68.71%
Stage II	149	104	45	69.80%
Stage III	58	39	19	67.24%
Stage IV	2	1	1	50%
Total	551	381	170	69.15%

Table 1. *TST negativity according to disease stage.*

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[Abstract:2197]

SERPINE1 (PAI-1) GENE POLYMORPHISM IN CHRONIC LUNG DISEASES

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Background and Aims: In chronic lung diseases (CLD), fibrinolytic activity in the alveolar space is suppressed, which in turn contributes to the development of the lung fibrosis. The process of regulation of fibrinolysis depends primarily on the level of synthesis and secretion of plasminogen activation inhibitors (PAI-1). The level of PAI-1 depends on the genotypes of the encoded *SERPINE1* gene. In this regard, the purpose of the study was to determine the frequency of genotypes of the *SERPINE1* gene polymorphism in CLD.

Methods: The study included 46 patients, of which 27 patients with chronic obstructive pulmonary disease (COPD), 19 patients with interstitial lung diseases (15 respondents with systemic scleroderma (SSc), 4 with rheumatoid arthritis (RA)). The genotypes of the *SERPINE1* gene were determined in patients: 5G/5G, 5G/4G, 4G/4G. Statistical analysis — variables were analysed using the chi-square test.

Results: In patients with CLD, a prevalence of the 5G/4G genotype was revealed (63%). The 4G/4G genotype was found in 24% of cases, 5G/5G in 13% of respondents. The 5G/4G genotype was most common in patients with COPD (39.1%). In the subjects with SSc, genotypes 5G/4G and 4G/4G were found with the same frequency (15.2%). All patients with RA had the 5G/4G genotype.

Conclusions: The 4G/4G genotype was found in 24% of cases, 5G/5G – in 13% of respondents. The 5G/4G genotype was most common in patients with COPD (39.1%). In individuals with SSc, the 5G/4G and 4G/4G genotypes occurred with equal frequency (15.2%). All patients with RA had the 5G/4G genotype.

Keywords: *PAI-1, SERPINE1, chronic lung diseases*

[Abstract:2205]

PROFILE AND COMORBIDITIES OF COPD PATIENTS ADMITTED IN THE FIRST HALF OF 2022

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Objectives: To analyse the profile of COPD patients admitted for any cause to the internal medicine and pulmonology services.

Materials and Methods: Observational, descriptive and retrospective study. We analysed patients with COPD who were admitted to the internal medicine and pulmonology services in the first half of 2022. We used the spss 29.0 statistical program.

Results: 200 patients with COPD were admitted.77.5% men with a mean age of 77.04 years, with 83.5% ≥65 years old. The patients had 3.3+/-2.2 associated comorbidities, the most frequent were high blood pressure (72.5%), dyslipidaemia (48.5%), obesity (35%), heart failure (34.5%) and diabetes mellitus (31.5%). 65.8% were active smokers and 12% had lung neoplasia. The average number of drugs used daily was 8.78+/-4.41. 80.5% polypharmacy and 44.5% extreme polypharmacy. 38% were prescribed medication that depresses the respiratory centre, benzodiazepines 28%, not influencing the average length of stay or mortality. COPD exacerbation was the most frequent cause of admission (38.5%), followed by pneumonia (18%) and heart failure (11.5%), the latter associated with a higher risk of mortality (OR 2.94; p<0.005). The total mortality was 25% and the average income was 7.86+/-5.89 days. Those aged ≥65 years (OR 3.92; p<0.005) and with atrial fibrillation (OR 2.46; p<0.005) had a higher risk of mortality.

Conclusions: The admitted COPD patients have a high age, comorbidity and polypharmacy. Age ≥ 65 years and atrial fibrillation is related to a higher risk of mortality. The most frequent cause of admission was exacerbation of COPD and decompensation of heart failure is the cause of admission with the highest mortality.

Keywords: *COPD, comorbidities, polypharmacy*

[Abstract:2219]

COPD EXACERBATION: THE MYSTERIOUS LINK WITH MARKERS OF MYOCARDIAL DAMAGE

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A 69-year-old man with severe COPD (GOLD 4E) and a history of smoking came to the emergency department for acute dyspnoea. He presented with low oxygen saturation (78%), hypertension, and clinical and radiological findings compatible with pulmonary exacerbation. Laboratory results reveal markers of inflammation and elevated cardiac enzymes (troponin I 300 ng/ml rising to 7900 ng/ml in the second measurement). Arterial blood gases indicate respiratory insufficiency and acidosis. The electrocardiogram shows ST segment elevation in the inferior face, leading to the suspicion of a cardiovascular event. Chest CT angiogram ruled out pulmonary thromboembolism.

In view of the findings described above, admission to the ICU and coronary catheterization were decided, excluding significant lesions. The result was positive for influenza A, and treatment with corticosteroids, antibiotics and antiviral drugs was started in the ICU, and the patient responded correctly. After being transferred to Pneumology, the patient was discharged in stable clinical and

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hemodynamic conditions. Echocardiography ruled out structural heart disease.

We highlight the association between COPD severity, exacerbations and cardiovascular risk. We suggest that alveolar hypoxia may trigger cardiovascular events; either by acute cor pulmonale due to pulmonary vasoconstriction or by coronary vasospasm associated with bronchial hyperresponsiveness and emotional stress.

We emphasize the importance of preventing exacerbations, adjusting treatments and controlling cardiovascular risk factors to reduce the risk of ischemic events in patients with COPD. It has been shown that each new episode of hypoxia increases the risk of an ischemic event.

Keywords: *COPD, exacerbation, troponin*

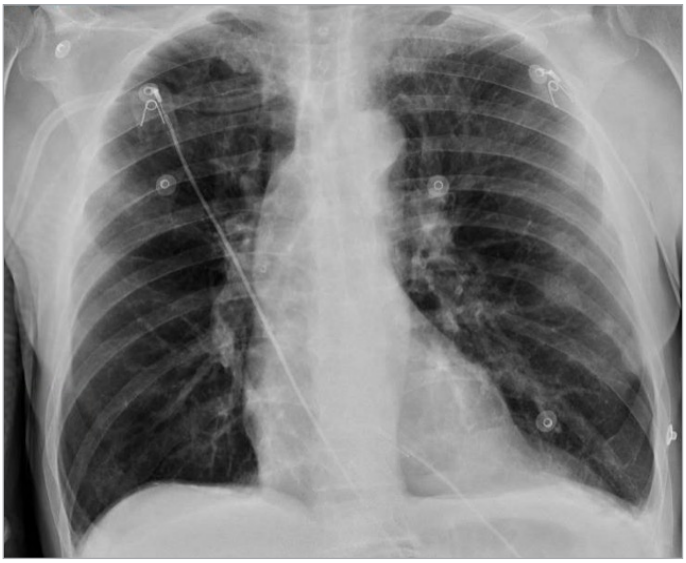

Figure 1. *Chest X-ray. Increased vascular raster and hyperinflation.*

[Abstract:2263]

ALVEOLAR HEMORRHAGE IN CELIAC DISEASE: A CASE REPORT

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Background: The aetiologies of alveolar haemorrhage (AH) are varied. Its association with celiac disease (CD) is scarce. Then, we report a new case.

Case Presentation: A 44-year-old patient with medical history of CD was admitted for haemoptysis with iron deficiency anaemia. The chest CT scan revealed two calcified micronodules in the right upper lobe and the left lower lobe and pericardial effusion. An AH was detected on bronchoscopy and bronchoalveolar washing showed a Gold score of 220. Bronchial biopsy showed inflammatory lesions. Testing for Kokh bacillus in sputum as well as alveolar washing fluid and tuberculin IDR were negative. The antinuclear antibodies, ANCA, anti-glomerular basal membrane antibodies, anti-phospholipid antibodies and cryoglobulinemia were negative. The complement (C3 and C4) levels were normal. Anti-transglutaminase and anti-gliadin antibodies were positive. Digestive fibroscopy showed a mosaic appearance with a normal duodenal biopsy. The AH was therefore secondary to CD. The patient was treated with Dicynone® and we insist on the gluten-free diet with no recurrence of AH.

Conclusions: The association of CD with AH is rare and does not seem fortuitous. Lung tissue appears to be a target for anti-transglutaminase antibodies. Its is interesting to establish the link because the gluten-free diet may improve both digestive and pulmonary manifestations.

Keywords: *haemorrhage, celiac disease, anaemia*

[Abstract:2280]

COMPUTED TOMOGRAPHY OF THE LUNGS IN CHRONIC LUNG DISEASES

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Background and Aims: To evaluate lung density, volume in patients with chronic lung diseases and their relationship with galectin levels.

Methods: The study included 56 patients with chronic lung diseases, of which 19 patients with interstitial lung diseases (ILD) (15 respondents with systemic scleroderma (SSc), 4 with rheumatoid arthritis (RA)) and 37 patients with chronic obstructive disease lungs (COPD). All patients underwent computed tomography of the lungs with determination of lung volume (cm^3) and lung densitometry (HU) using three-dimensional (3D) software, blood galectin-3 level (ng/ml). Statistical analysis was performed using the Mann-Whitney test.

Results: Patients with COPD had higher lung volume than patients with ILD (p=0.00). Densitometry levels in the COPD group ranged from -865 to -911 HU (p=0.00). Lung volume and lung densitometry in patients with COPD correspond to hyperventilation, which indicates the presence of emphysema. In patients, galectins, which indicate the development of fibrosis, were higher in the ILD group, but did not reach statistical significance.

Conclusions: Lung volume and densitometry of lung tissue in patients with COPD showed the presence of increased volume and hyperventilation, which reflects the presence of pulmonary emphysema. The inclusion of multidetector CT in the examination of patients with COPD is one of the important criteria for assessing the severity and prognosis of the disease.

Keywords: *COPD, ILD, Galectin-3, CT, lung densitometry, lung volume*

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Indicators ME [Q1;Q3]	Patients with ILD, n=19	Patients with COPD n=37	p
Galectin-3, ng / ml	20 (15.7; 22.45)	16.1 (13.7; 19.7)	0.9
Lung volume, cm^3	3164 (2534.5; 3884.5)	6592 (5931; 7428)	0.00
Densitometric indicators, HU	-791 (-839; -766)	-896 (-911; -865)	0.00

Table 1. *Comparative analysis of lung CT data and galectin-3 in patients with chronic lung diseases.*

[Abstract:2312]

EOSINOPHILIC GRANULOMATOSIS WITH POLYANGIITIS (EGPA)

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A 15-year-old patient was referred by her primary care physician for study due to a persistent cough of 2-3 months that had recently began to associate dyspnoea on exertion. Her medical history included recurrent panpolyposis and allergy to grasses and perennial plants, although she had never been diagnosed with asthma.

In a follow-up chest X-ray requested by his primary care physician multiple bilateral alveolar opacities had suddenly appeared, predominantly in upper fields, both central and peripheral. A thoracic CT was then requested, which revealed multiple peripheral pulmonary infiltrates with peripheral ground-glass halo predominantly in the upper lobes and middle fields, as well as multiple paratracheal, para-aortic, hilar, and lobar lymphadenopathy, without any other affectation. A complete analysis was also requested in which the presence of marked eosinophilia was shown (2.800/l eosinophils, the 30.8%).

The analytical and radiological findings in combination with the patient's medical history suggested a probable eosinophilic granulomatosis with polyangiitis, previously known as Churg-Strauss disease. ANCAs were requested but were negative. Treatment was started with oral corticosteroids (in a descending regimen) and monoclonal antibodies (specifically, mepolizumab 300mg). The patient has shown a lot of improvement and is currently asymptomatic.

Until recently, the treatment of eosinophilic granulomatosis with polyangiitis had been based on the use of glucocorticoids and immunosuppressants. However there has been important progress and new therapeutic windows have opened. The efficacy of mepolizumab has recently been demonstrated in several trials and others, such as omalizumab, are beginning to be evaluated.

Keywords: *eosinophilic granulomatosis with polyangiitis, ANCA-associated vasculitides, small and medium vessel vasculitides, mepolizumab*

[Abstract:2319]

INHALATION TREATMENT IN HOSPITALIZED COPD PATIENTS

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Objectives: Analyse the inhalation treatment and phenotype of hospitalized COPD patients.

Materials and Methods: Observational, descriptive and retrospective study. Patients with a previous diagnosis of COPD who were admitted to the Internal Medicine and Pulmonology services in the first semester of 2022 were included. SPSS29.0 program was used for statistical analysis.

Results: 200 COPD patients were admitted.77.5% were men with a mean age of 77.04+/-1.64 years. 49.5% met exacerbator phenotype criteria prior to admission. 23.5% patients had no prior prescription for inhalers. Of these, 70.21% presented a phenotype not exacerbator. The most frequent inhalation treatment prior to admission was triple therapy (27.5%), followed by double-bronchodilation (17.5%). 45% used inhaled corticosteroids, which were not associated with a higher risk of admission for pneumonia. Neither is it associated with a greater number of eosinophils or ≥ 300 eosinophils in the blood at admission.49.5% of patients have an exacerbator phenotype, of which 52.5% had an inhaled corticosteroid indicated. The exacerbator phenotype is associated with greater use of inhaled corticosteroid (OR: 1.83; p<0.005). 2% have inhaled corticosteroid in monotherapy and 9% have duplications in inhaled treatment. At discharge, triple therapy continued to be the most frequent inhalation treatment (32%) followed by double-brochodilation (23.3%). 23.3% patients continue without inhaled treatment.

Conclusions: The majority of COPD patients admitted had triple therapy and double-bronchodilation, prior to admission. There is poor therapeutic adherence, the majority of non-exacerbating COPD patients do not regularly follow inhalation treatment. 11% of patients have errors in the indication for inhaled treatment (duplications/monotherapy corticosteroids). Inhaled corticosteroids are not associated with an increased risk of pneumonia.

Keywords: *COPD, treatment, inhaled*

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[Abstract:2346]

BIRD FANCIER'S LUNG

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A 57-year-old man was admitted with progressive dyspnoea, asthenia, weight loss, low-grade fever, expectorative cough, and central thoracic pain that changed with respiratory movements, increasing with inspiration. The physical examination revealed only mild scattered inspiratory crackles. The patient was working in the cleaning industry. Previously he worked as a freelancer in a hair salon.

During his hospital stay, numerous tests were performed; A complete analysis was requested in which no alterations were found. Respiratory virus PCR, sputum culture, induced sputum culture, and bronchoalveolar lavage were negative. No AFB or *Mycobacterium tuberculosis* DNA were detected. Autoimmunity tests were negative. The chest X-ray showed a diffuse ground-glass pattern with some ill-defined pseudonodular images. The study was completed with a chest CT showing multiple poorly defined, centrilobular nodular images, with areas of a mosaic pattern predominantly in the lower lobes, middle lobe and lingula, highly suggestive of non-fibrosing hypersensitivity pneumonitis.

Some days later, during his hospital stay, the patient confessed to us that he and his wife had pigeons at home. Treatment with corticosteroids was started, with a good and prompt response. Precipitins and specific IgE are requested. The patient was discharged after clinical improvement with oral corticosteroid treatment in a descending regimen and was scheduled for consultation for results. Precipitins from faecal extract, serum, and pigeon feathers were positive, supporting the diagnosis of hypersensitivity pneumonitis (Bird Fancier's Lung).

Keywords: *Bird Fancier's lung, hypersensitivity pneumonitis, pulmonary fibrosis*

[Abstract:2468]

ALMAGEL A: AN UNUSUAL CAUSE OF METHEMOGLOBINEMIA

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Case Description: A 38-year-old man presented to the emergency department with a feeling of intense worry, agitation, dizziness, general weakness, moderate headache and frequent urination. He had had episodes of similar symptoms in the past (occipital headache, dizziness, general weakness, sweating and frequent urination) and an extensive previous work up, including no pathological changes on brain MRI angiography.

Physical examination revealed cyanosis of the lips and fingers, BP 130/90 mmHg, HR 90/min, RR 20/min and SaO_2 88% on room air. Pulmonary, cardiac, and neurological examinations were normal. ECG, chest X-ray and echocardiography were unremarkable. The ABG test showed a methaemoglobin of 9.2% without other changes. The patient was put on oxygen and admitted to hospital for monitoring. The next day, the patient's condition improved significantly with oxygen therapy. The symptoms disappeared and the oxygen saturation was 97%. Repeat ABG test results showed a methaemoglobin level of 0%. When questioned in detail, the patient said that she had taken an antacid (Almagel A) one hour before the onset of the symptoms to relieve the stomach discomfort. He had used Almagel in the past without any significant adverse reactions, but this was the first time he had taken Almagel A, which contains benzocaine, known to be a potential cause of methemoglobinemia.

Conclusions: Methemoglobinemia should be considered in patients with hypoxemia, acrocyanosis and exposure to benzocaine.

Keywords: *methemoglobinemia, benzocaine, cyanosis*

[Abstract:2498]

SPONTANEOUS PNEUMOTHORAX: COMPARISON OF 2 CLINICAL CASES

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Pneumothorax represents, by definition, the presence of air in the pleural cavity. It is a common pathology in the emergency department (ED) and should be recognized early. It can occur spontaneously or because of a trauma, a medical procedure or some underlying lung pathology. Diagnosis is based on objective examination and chest x-ray.

Case 1: 21-year-old man, healthy. He came to the ED due to chest pain in the left hemithorax with pleuritic characteristics that woke him up during the night, lasting 4 hours, accompanied by a dry cough and dyspnoea. The objective examination (OE) on auscultation showed the abolition of the vesicular murmur (VM) in the left hemithorax. A chest x-ray was performed with hypertransparency in the left hemithorax, showing spontaneous pneumothorax. Drainage of pleural gas was performed, without complications.

Case 2: 38-year-old man, professional diver, healthy, with smoking habits 15 UMA. He came to the ED due to sudden chest pain in the right hemithorax, which began at rest with pleuritic characteristics and ipsilateral dorsal radiation associated with dyspnoea. He had dived 12 hours before the beginning of the symptoms. On auscultation, VM was abolished. He did chest x-ray to reveal hypertransparency in the right hemithorax,

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demonstrating a pneumothorax. Drainage of pleural gas was performed without complications.
Two cases of spontaneous pneumothorax are described, both in young men with different risk factors. By describing these cases, the authors intend to draw attention to the importance of this entity, especially in the emergency department, providing adequate treatment.

Keywords: *spontaneous pneumothorax, pneumology, clinical case*

[Abstract:2580]

RESPIRATORY PARAMETERS AND THE FREQUENCY OF ARRHYTHMIAS IN RELATION TO THE SEVERITY OF SLEEP APNEA IN HYPERTENSIVE PATIENTS

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Background: The severity of obstructive sleep apnoea (OSA) in people with hypertension may be correlated with deterioration in respiratory function, as reflected by respiratory parameters such as oxygen desaturation index or decrease in saturation. In addition, the occurrence of OSA may be related to the frequency of arrhythmias.
Aim: To assess respiratory parameters and arrhythmia frequency in hypertensive patients with moderate/severe OSA compared to hypertensive patients with mild/no OSA.
Methods: The retrospective study was conducted in 2022 and 2023. We analysed data from 57 patients - women and men (68.4% vs. 31.6%). Patients were divided into 2 groups: patients without/with mild OSA (n=31; 54.5%) and patients with moderate/severe OSA (n=26; 45.6%). In the group characteristics, the statistically significant parameters were: sex (p<0.001), weight (p=0.006), BMI (p=0.006).
Results: The group with moderate/severe OSA had a statistically significant higher mean decrease in saturation (4.97 vs 3.84; p<0.001), mean duration of sleep apnoea [sec] (19.85 vs 16.50; p=0.002) and percentage of snoring (28.25 vs 12.00; p<0.001). The incidence of bradycardia and tachycardia was higher in the second group (statistically insignificant).
Conclusions: Patients with hypertension and moderate/severe OSA have worse respiratory parameters and a higher incidence of arrhythmias, which may lead to severe complications and require more aggressive treatment.

Keywords: *obstructive sleep apnoea, hypertension, respiratory parameters, arrhythmia*

[Abstract:2600]

THE AMAZING CAPACITY OF LUNG HEALING

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Hypersensitivity pneumonitis is a syndrome that includes cough, dyspnoea, and fatigue caused by sensitization and subsequent hypersensitivity to environmental antigens (usually occupational or household). There are acute, subacute and chronic forms, characterized by interstitial inflammation and the development of granulomas and fibrosis, with long-term exposure.
We present a case of a 47-year-old man that came to emergency department with dyspnoea and cough with progressive worsening during the night. Twelve hours before he was exposed to some kind of varnish in the factory where he works, which released vapours that were inhaled without protection. Upon arrival he was in respiratory exhaustion with 55% of peripheral saturation. On thorax tomography showed extensive ground-glass densification of the lung parenchyma involving both lungs. He started pulse corticosteroid therapy 1 mg/kg and was admitted to the intensive care unit where he underwent high-flow nasal oxygen therapy. Seven days later, the re-evaluation chest tomography showed practically complete resolution of the marked diffuse reduction in parenchymal permeability. The patient was discharged to complete slow weaning of corticosteroids.
We present this clinical case of Hypersensitivity pneumonitis because of the amazing lung healing capacity. Clinical and CT features are crucial to the diagnosis of hypersensitivity pneumonitis. Diagnosis is based on a combination of history, physical examination, imaging methods, bronchoalveolar lavage and biopsy. Short-term treatment is with corticosteroids; Long-term treatment is to avoid antigens, and, in the case of fibrosis, it is usually immune suppression. We thus demonstrate the importance of this disease.

Keywords: *hypersensitivity pneumonitis, lung healing, environmental exposure*

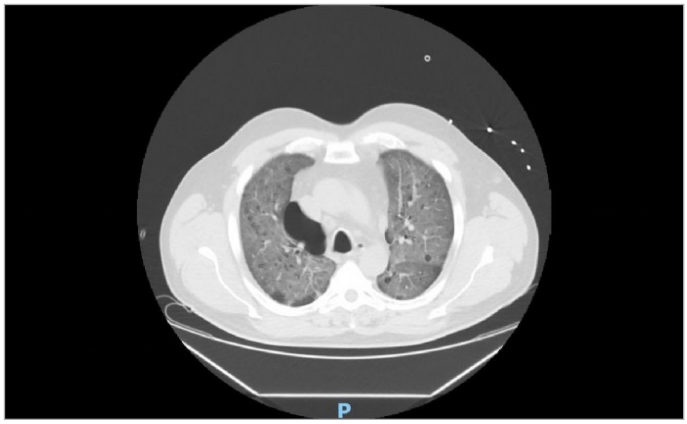

Figure 1. *First chest tomography.*

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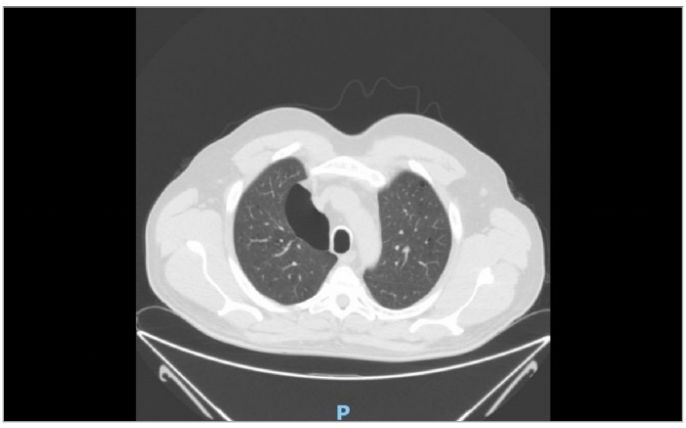

Figure 2. Revaluation chest tomography.

[Abstract:2625]

PASSIVE SMOKING AND LUNG CANCER

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According to the American Cancer Society, second-hand smoke is a risk factor for lung cancer, even in people who have never smoked. Environmental smoking causes lung inflammation and lowers levels of certain vitamins in the body. These effects can increase a person's likelihood of developing health problems.

We study a group of 39 patients, from Constanta County Emergency Hospital, diagnosed with lung cancer who have never smoked but were passive smokers, living or working in an environment with smokers.

We try to explain the harmful influence of cigarette smoke on patients with lung diseases, but also on healthy ones, as well as the risk of developing lung cancer.

The level of urinary cotinine (a biomarker of environmental tobacco smoke) seems to be an important indicator of harmful exposure and could be corelated with the increasing incidence of lung cancer. We did some correlations regarding the age, the sex, the histological types of neoplasia, the associated respiratory diseases and comorbidities.

The higher inflammation tests and the low levels of vitamin B12 and vitamin C seems to be corelated with the environmental smoking and with the onset of lung cancer. Women exposed to environmental smoking are more predispose like men and the histological type of the lung cancer in this group is small cell lung cancer.

Keywords: *environmental smoking, lung cancer, cotinine*

[Abstract:2791]

MALNUTRITION, POOR QUALITY OF LIFE AND DISABILITY: PART OF THE COMPLEXITY OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AND THEIR INFLUENCE ON THE RATE OF ACUTE EXACERBATIONS

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Background: Current COPD management is predominantly cantered and limited on respiratory aspects. Multidimensional assessment, incorporating nutritional assessment, quality of life, and disability into clinical practice, provides an accurate and holistic perspective of the true complexity of COPD patients.

Methods: we conducted an observational prospective study and enrolled 114 participants with stable COPD and at high risk of acute exacerbations according to the GOLD 2023 report; Each participants underwent a 52-week follow-up and at baseline we performed spirometry, we administer Mini-Nutritional Assessment (MNA), Euro-Qol-5D-3L (EQ-5D-3L) and Barthel Index (BI) (Figure 1,2 and 3), we performed spirometry and the degree of dyspnoea was assessed through mMRC and CAT test. The primary outcome was a composite of moderate or severe acute exacerbation during the 52-weeks follow-up.

Results: MNA, EQ-5D-3L and BI score were significant correlated as well as with FEV1 value, mMRC and CAT test score (Table 1). Our linear logistic models showed that MNA, EQ-5D-3L score were associated with the dyspnoea severity (Table 2 and 3). Also, our Cox regression analysis showed that a one-point increase in MNA and BI score reduced the risk of our primary outcome respectively of 3% and 14% (Table 4 and 6). The log-rank test showed that the higher the level of disability, the higher the rate of mortality (Table 7).

Conclusions: A shift from a dyspnoea/FEV1 guided-approach to a multidimensional assessment could significantly enhance patient care, recognizing the overlooked issues of COPD management. Addressing these facets could lead to more holistic and effective strategies in treating COPD, ultimately improving patient outcomes.

Keywords: *malnutrition, quality of life. disability, chronic obstructive pulmonary disease, multidimensional assessment*

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BARTHEL INDEX

		With Help	Independent
1.	Feeding (if food needs to be cut up = help)	5	10
2.	Moving from wheelchair to bed and return (includes sitting up in bed)	5-10	15
3.	Personal toilet (wash face, comb hair, shave, clean teeth)	0	5
4.	Getting on and off toilet (handling clothes, wipe, flush)	5	10
5.	Bathing self	0	5
6.	Walking on level surface (or if unable to walk, propel wheelchair) *score only if unable to walk	0*	5*
7.	Ascend and descend stairs	5	10
8.	Dressing (includes tying shoes, fastening fasteners)	5	10
9.	Controlling bowels	5	10
10.	Controlling bladder	5	10

Figure 1. *Barthel Index (BI).*

The Barthel Index, formerly the Maryland Disability Index, was codified by English nurse Barthel in the 1950s. serves as an ordinal scale for measuring individuals' performance in activities such as mobility, grooming, dressing, and feeding. [MAHONEY, F. I., & BARTHEL, D. W. (1965). FUNCTIONAL EVALUATION: THE BARTHEL INDEX. Maryland state medical journal, 14, 61–65.] For the purpose of this study, the cut-off points suggested by Shah et Al were used and allow to interpret the Bathel Index score as follows: a total score ranging between 0-20 implies "total dependency", 21-60 indicates "severe dependency", 61-90 indicates "moderate dependency", and 91-99 suggests "slight dependency". A score of 100 denotes complete independence from external assistance. [Shah, S.; Vanclay, F.; Cooper, B. Improving the Sensitivity of the Barthel Index for Stroke Rehabilitation. J Clin Epidemiol 1989, 42, 703–709, doi:10.1016/0895-4356(89)90065-6.]

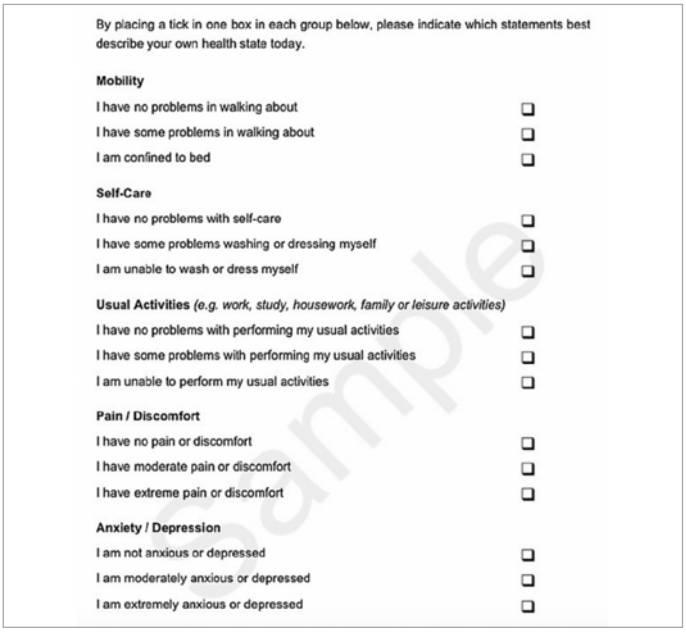

Figure 2. *Euro-Qol-5D-3L.*

Euro-QoL-5D-3L (EQ-5D-3L) is a widely used generic health-related quality of life (HRQoL) instrument that measures individuals' health status across five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. It provides a descriptive profile of health and allows for the calculation of an overall index score. For the purpose of this study, the Italian population-based set value was used to calculate the EQ-5D-3L Index Value [Finch, A.P.; Meregaglia, M.; Ciani, O.; Roudijk, B.; Jommi, C. An EQ-5D-5L Value Set for Italy Using Videoconferencing Interviews and Feasibility of a New Mode of Administration. Soc Sci Med 2022, 292, 114519, doi:10.1016/j.socscimed.2021.114519];

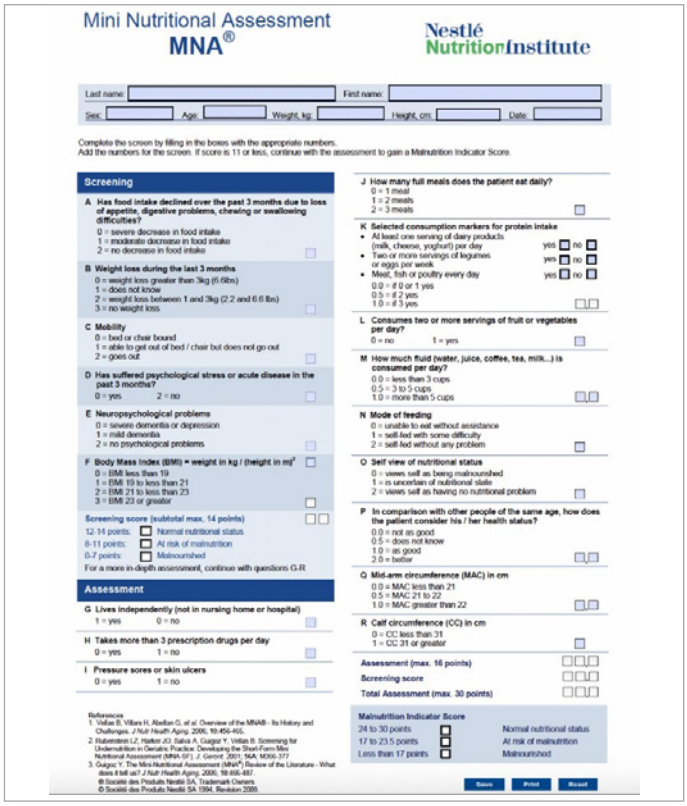

Figure 3. *Mini Nutritional Assessment.*

The Mini Nutritional Assessment is a validated nutrition screening and assessment tool often used to identify geriatric patients at risk of malnutrition. Its structure includes anthropometric measurements, global assessment, dietary questionnaire, and subjective assessment. Currently, evidence suggests that the MNA has a predictive value for various health-related outcomes, including morbidity and mortality.

	mMRC	CAT	FEV1	Barthel Index	MNA-SF	MNA-TOT	EQ-5D-3L
Barthel Index	-0.450***	-0.457***	0.267**		0.260**	0.392**	0.699***
MNA-SF	-0.351***	-0.399***	0.278**	0-260**		0.838***	0.411***
MNA-TOT	-0.389***	-0.472***	0.226**	0.392**	0.838***		0.521***
EQ-5D-3L	-0.549***	-0.622***	0.292**	0.699***	0.411***	0.521***	

Table 1. *Results of Pearson's correlation analysis.*

The results demonstrate that the Barthel Index, MNA-SF, MNA-TOT, and EQ-5D-3L, which respectively assess autonomy in activities of daily living, degree of malnutrition, and quality of life, were correlated with each other as well as with the main clinical-spirometric COPD variables: they correlate with the degree of airflow limitation (FEV1) and with the severity of breathlessness reported by patients according to the mMRC and CAT, supporting the hypothesis that non-respiratory variables may influence the severity of respiratory symptoms. [MNA-SF:

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Mini Nutritional Assessment-Short Form; MNA-Tot: Mini Nutritional Assessment-Total score; EQ-5D-3L: Euro-Qol-5D-3L; COPD: Chronic Obstructive Pulmonary disease; mMRC: modified Medical Research Council; CAT: COPD Assessment Test; FEV1: Forced Expiratory Volume in the first second].

mMRC	Beta coefficient	Standard Error	p value
GOLD Class 1	(Reference group)		
GOLD Class 2	0.700	0.27	0.01
GOLD Class 3	0.828	0.29	0.005
GOLD Class 4	1.53	0.46	0.001
Age	0.01	0.01	0.074
Gender (Female)	(Reference group)		
Gender (Male)	0.26	0.17	0.127
Barthel Index	-0.004	0.005	0.328
MNA-Tot	-0.034	0.02	0.093
EQ-5D-3L	-2.25	0.61	0.0001

Table 2. *Results of multiple linear regression analysis (mMRC as dependent variable).*

Our multiple regression analysis showed a significant relationship between the mMRC score (severity of dyspnoea) and the EQ-5D-3L (perceived quality of life). The latter explained the 39% of the variance of mMRC score. We computed Gender, Age and COPD-GOLD Class as confounding variables. Results: F(8,105)=10.27, p<0.0001; R-squared: 0.440; Adjusted R-squared: 0.396;

CAT score	Beta coefficient	Standard Error	p value
GOLD Class 1	(Reference variable)		
GOLD Class 2	3.19	1.94	0.103
GOLD Class 3	3.60	2.07	0.085
GOLD Class 4	7.18	3.28	0.031
Age		0.06	0.395
Gender (Female)	(Reference variable)		
Gender (Male)	0.302	1.20	0.802
Barthel Index	-0.008	0.041	0.834
MNA-Tot	-0.385	0.16	0.024
EQ-5D-3L	-19.96	4.48	0.0001

Table 3. *Results of multiple regression analysis (CAT as dependent variable).*

Our multiple regression analysis showed a significant relationship between the mMRC, CAT score (severity of dyspnoea) and the MNA-Tot(Nutritional status) score and EQ-5D-3L (perceived quality of life). Our model explained the 41% of the variance of CAT score. We computed Gender, Age and COPD-GOLD Class as confounding variables. Results: F(8,105)=11.01, p<0.0001; R-squared: 0.456; Adjusted R-squared: 0.414;

	Hazard Ratio (95% Confidence Interval)	Standard Error	p value
Barthel Index	0.97 (0.96-0.99)	0.006	0.001
MNA-Tot	0.87 (0.81-0.94)	0.034	0.001
EQ-5D-3L	0.097 (0.02-0.42)	0.072	0.002

Table 4. *Results of multivariate Cox regression analysis according to Barthel Index, MNA-Tot and EQ-5D-3L as continuous variables.*

Our Cox regression analysis showed that a one-point increase in MNA and BI score reduced the risk of our primary outcome respectively of 3% and 14%. Each showed variables are computed separately in a multiple Cox regression analysis accounting for Age, Gender, CAT>10 points, GOLD Class as confounding variables.

	Hazard Ratio (95% Confidence Interval)	Standard Error	p value
Age	0.96 (0.93-0.99)	0.016	0.047
CAT>10 points	4.17 (1.43-12.15)	2.27	0.009
Gender (Male)	0.85 (0.46-1.56)	0.30	0.605
GOLD Class 1	(Reference group)		
GOLD Class 2	1.38 (0.40-4.77)	0.87	0.607
GOLD Class 3	1.65 (0.46-5.87)	1.06	0.434
GOLD Class 4	3.86 (1.05-22.48)	3.06	0.088
No Dependency (BI=100)	(Reference group)		
Slight dependency (BI=91-99)	1.27 (0.38-4.22)	0.78	0.686
Moderate dependency (BI=61-90)	2.50 (1.12-5.57)	1.02	0.024
Severe dependency (BI=21-60)	4.61 (1.78-11.96)	2.24	0.002
Total dependency (BI=0-20	(omitted, 0 subjects)		

Table 5. *Results of multivariate Cox regression analysis according to the severity class of Barthel Index.*

Our Cox Regression analysis showed that the higher the dependency, the higher the risk of moderate-to-severe acute exacerbations during the 52 weeks of follow-up. We computed Age, Gender, CAT score>10 points and GOLD Class as confounding variables. A total score ranging between 0-20 implies "total dependency", 21-60 indicates "severe dependency", 61-90 indicates "moderate dependency", and 91-99 suggests "slight dependency". A score of 100 denotes complete independence from external assistance.

	Hazard Ratio (95% Confidence Interval)	Standard Error	p value
Age	0.98 (0.94-1.01)	0.016	0.238
Gender (Female)	(Reference group)		
Gender (Male)	0.98 (0.53-1.79)	0.30	0.948
CAT score>10 points	2.86 (0.98-8.39)	1.57	0.054
GOLD Class 1	(Reference group)		
GOLD Class 2	1.44 (0.42-4.94)	0.90	0.556
GOLD Class 3	2.40 (0.70-8.22)	1.50	0.160
GOLD Class 4	4.87 (1.05-22.48)	3.80	0.042
Normal nutritional status (MNA-Tot=24-30)	(Reference group)		
At risk of malnutrition (MNA-Tot=17-23.5)	3.09 (1.38-6.93)	1.27	0.006
Malnourished (MNA-Tot=0-17)	6.71 (2.48-18.11)	3.40	<0.0001

Table 6. *Results of multivariate Cox regression analysis according to the nutritional status.*

Our Cox regression analysis showed that subject at risk of malnutrition and malnourished were at higher risk of moderate-to-severe acute exacerbations during the 52 weeks of follow-up. We computed Age, Gender, CAT score>10 points and GOLD Class as confounding variables.

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	Observed events	Expected events
No dependency (BI=100)	0	6.63
Slight dependency (BI=91-99)	2	2.12
Moderate dependency (BI=61-90)	7	6.41
Severe dependency (BI=21-60)	8	1.84

Table 7. *Results of Log-Rank test according to the severity class of Barthel Index.*

The log-rank test showed that the higher the level of disability, the higher the rate of mortality. chi2(3)=28.23; p<0.0001 A total score ranging between 0-20 implies "total dependency", 21-60 indicates "severe dependency", 61-90 indicates "moderate dependency", and 91-99 suggests "slight dependency". A score of 100 denotes complete independence from external assistance.

[Abstract:2832]

A RARE CASE: A CASE OF SARCOIDOSIS PRESENTING WITH HYPERCALCEMIA

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Case Presentation: A 59-year-old woman with hypertension, chronic kidney disease and chronic atrial fibrillation. He was admitted to the emergency room with sudden onset of headache. Investigations revealed acute renal failure and hypercalcemia 15.5 mg/dl. The patient was admitted to the service with a diagnosis of malignant hypercalcemia to investigate an oncologic aetiology. The patient's parathormone level was 8.5 pg/ml. PET/CT was performed in the patient who was thought to have malignant hypercalcemia in the foreground. PET/CT: Multiple malignancy level hypermetabolic lymph nodes in the head and neck, thorax, abdomen and pelvic regions. Hypermetabolic lesions at the level of malignancy in bilateral lung hilar region + multiple nodular lesions in bilateral lung parenchyma. Hypermetabolic multiple lesions at malignancy level in the liver, hypermetabolic multiple lesions at malignancy level in the skeletal system were reported.

Bone marrow biopsy was performed in a patient with diffuse bone involvement. Bone marrow biopsy: non-necrotizing granulomatous inflammation. Sarcoidosis was considered and 1 mg/kg steroid was started. There was a dramatic response to steroid. Malignant hypercalcemia and acute renal picture improved. The patient was discharged after his clinic improved and he became mobilized. His follow-up continues.

Conclusions: Presentation with malignant hypercalcemia and extensive bone metastases is not an expected condition in sarcoidosis and we aimed to share this rare case.

Keywords: *sarcoidosis, hypercalcemia, malignancy*

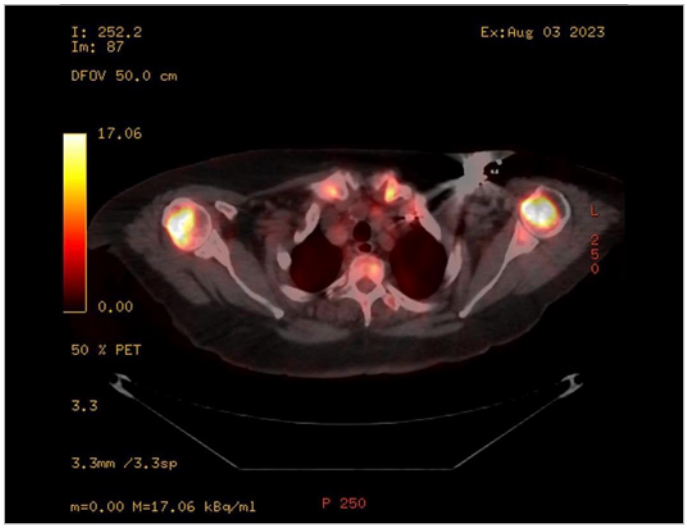

Figure 1. *PET/CT.*

[Abstract:2842]

MAIN BRONCHUS CANCER IN 18-YEAR-OLD FEMALE: A CASE REPORT

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Case Description: An 18-year-old female, who was consulted for nasal congestion, wheezing, shortness of breath episodes and cough with minimal sputum of about 12-months evolution. The patient's mother had anamnesis of allergic rhinitis. Physical examination revealed expiratory wheezing on auscultation. Spirometry wasn't valid because of intensive cough during exhale. Laboratory tests showed increased eosinophil count in blood and nasal secret, high levels of specific IgE against allergens of house dust mite and dog dandruff.

Clinical Hypothesis: Allergic asthma. Allergic rhinitis.

Diagnostic Pathways: Given the symptoms, anamnesis and the findings of the complementary tests, allergic asthma and allergic rhinitis were suspected, avoidance measures for indoor allergens, treatment with inhaled budesonide/formoterol, nasal mometasone and oral montelukast as controller medications, salbutamol as reliever medication were prescribed. As there was minor improvement only of cough, but not wheezing and shortness of breath in 4 weeks after starting initial treatment, we considered a different diagnosis. Spirometry test was valid this time and showed reduced FEV1 and negative reversibility test. Bronchoscopy revealed a tumour of the right main bronchus. In chest CT in the right main bronchus a rounded volumetric formation was determined. Finally, biopsy revealed mucoepidermoid carcinoma.

Discussion and Learning Points: Wheezing, shortness of breath and cough are main reasons for consultation of pulmonologist. Despite asthma being one of their most frequent causes, it is important to make a differential diagnosis with its other possible

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causes, especially when initial treatment is ineffective. Finally, diagnosed by biopsy right main bronchus cancer - mucoepidermoid carcinoma.

Keywords: *asthma, main bronchus cancer, mucoepidermoid carcinoma*

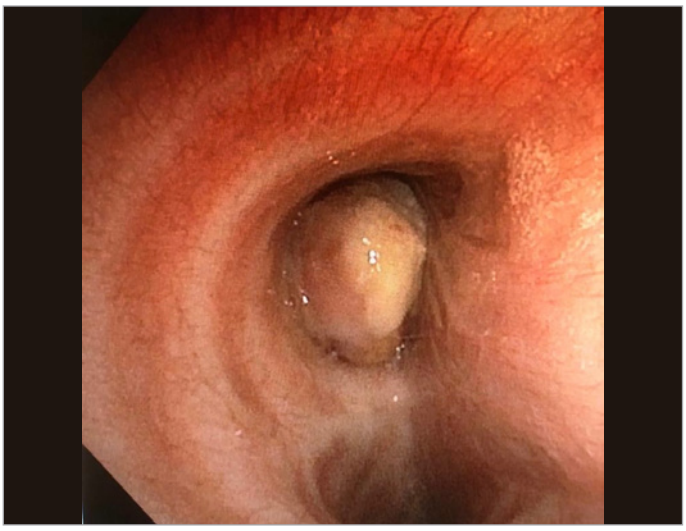

Figure 1. *Main Bronchus Carcinoma.*
A tumour of the right main bronchus revealed by bronchoscopy.

[Abstract:2850]

READMISSIONS IN HIGH-RISK COPD PATIENTS: SEVERITY OR THERAPEUTIC FAILURE?

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Up to 35% of high-risk COPD patients are readmitted within 90 days. This may indicate therapeutic failure or underlying severity (comorbidities) that worsen prognosis. The objective is to analyse factors associated with readmissions in patients with exacerbated COPD in our centre. We analysed exacerbated COPD who required hospital admission in 2022. We collected epidemiological data, comorbidities and treatment used previously, during and after discharge. Follow-up was carried out until May 31, 2023.
We obtained 76 patients (69 males). The follow-up was 8 months. 47.4% were readmitted. The mean age was 79.5±8.2 in readmitted patients vs 78.2±7.7 non-readmitted. Regarding comorbidities: > 80% history of smoking (88.9% vs 82.5%), 70% hypertensive, 38. 9% diabetic (42.5% in non-re-admission group) and >30% had atrial fibrillation. The Charlson index was 7.5 and 7 points respectively, and Barthel index was 66.5±35.5 points in re-admissioners and 73.1±26 in non-reenterers. Re-admissioners used chronic oxygen (61.1% vs 37.5% p<0.05) and triple therapy (72.2% vs 52.5% p=0.05) more frequently. Upon discharge, triple therapy was commonly used in this group (80.6% vs 60% p<0.05). In both, high doses of corticosteroids were used (57.8±23.7 vs 58.5±34.1 mg prednisone/day respectively). Average stay was similar (6.4±4.4 vs 6.4±4.8 days).
About half of the patients admitted with a COPD exacerbation are readmitted within 1 year. Possibly the greater use of chronic oxygen and triple therapy previously indicates those patients with greater severity or high risk. The admission should be considered a risk factor for future exacerbations and therefore requires close monitoring.

Keywords: *COPD, exacerbations, comorbidities*

[Abstract:2888]

PNEUMONIA CAUSED BY *S. MALTOPHILIA*, A RARE PATHOGEN, IN A MALE PATIENT PRESENTING WITH COUGH, FEVER, AND ALTERED CONSCIOUSNESS: A CASE PRESENTATION

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Introduction: *Stenotrophomonas maltophilia* is a less-known Gram-negative bacterium that is resistant to antibiotics. *S. maltophilia* is commonly associated with respiratory tract infections.
Case Presentation: A 65-year-old male patient presented with a productive cough, fever, and altered consciousness. Laboratory results showed CRP: 141 mg/L, procalcitonin: 3.04, WBC: 4400/µL. Lung imaging revealed a consolidated area in the lower lobe of the right lung and peribronchial nodular opacities in the lower lobes. The patient has a history of hospitalization in the last month. Cefepime and vancomycin treatments were initiated. As there was no response to the current antibiotic therapies, the patient exhibited a decline in GCS score, increased respiratory rate, and persistent fever, The antibiotic therapy was switched from cefepime to meropenem, and a bronchoscopy was performed. Even after meropenem, no response was observed. Following the identification of *S. maltophilia* in the BAL sample, meropenem and vancomycin were discontinued, high-dose (8 mg/kg/day) sulfamethoxazole/trimethoprim and 750 mg levofloxacin were initiated. Treatment was completed in two weeks. A dramatic response was observed in the patient's clinical symptoms and consciousness level. The patient, whose overall condition improved, was discharged.
Conclusions: Complementary examinations such as sputum culture are crucial in confirming the diagnosis and selecting appropriate treatment for each case. In this patient, the presence of *S. maltophilia* was identified in the bronchoscopic lavage sample, and response was achieved only with appropriate antibiotic therapy. In cases of pneumonia with recent hospitalization, especially in intensive care, where there is no response to the current antibiotic therapy, *Stenotrophomonas maltophilia* pneumonia, which is naturally resistant to beta-lactams, should be considered.

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Keywords: *Stenotrophomonas maltophilia, trimethoprim-sulfamethoxazole, levofloxacin*

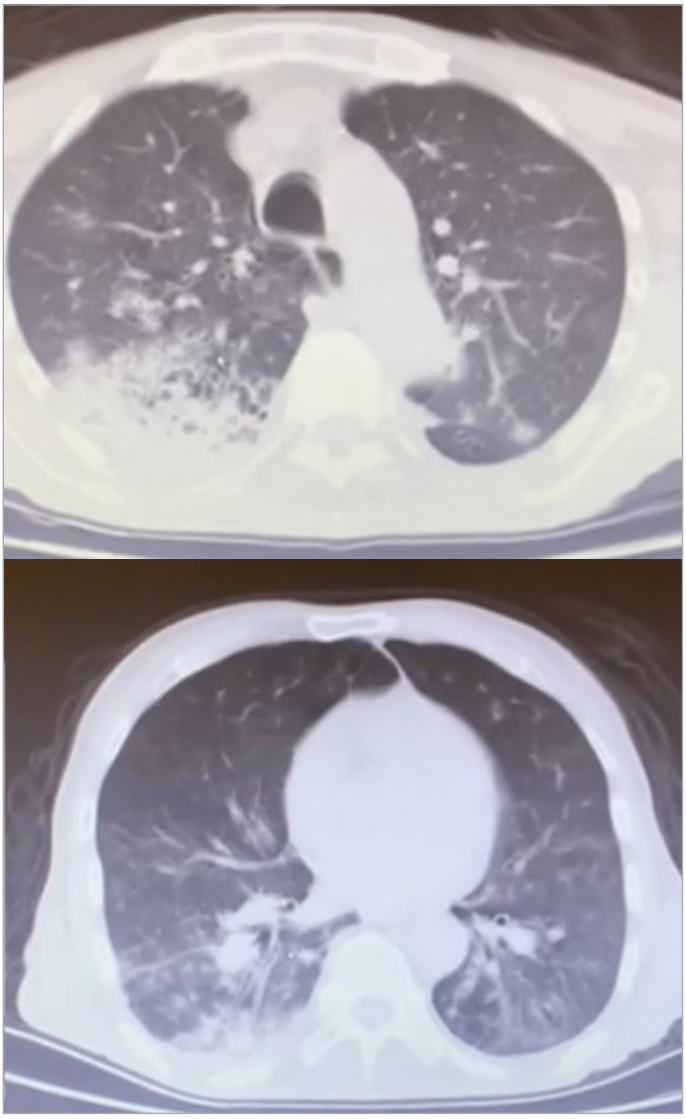

Figure 1. *Thorax CT.*

[Abstract:2932]

FROM TRACHEOBRONCHITIS TO ASPERGILLOSIS

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Introduction: Pulmonary aspergillosis, an uncommon fungal infection by the *Aspergillus* species, spreads mainly through inhaling spores. Risk factors include severe neutropenia, the use of high glucocorticoid doses or biological agents. Patients typically display fever, cough, chest pain, and dyspnoea, without pathognomonic signs on imaging studies. Diagnosis relies on culturing samples obtained via broncofibroscopy or biopsy.

Case Presentation: The authors present the case of a 93-year-old autonomous immunocompetent male who presented with two days of dyspnoea, productive cough and severe bronchospasm, but with slightly elevated inflammatory markers, without changes in the initial chest X-ray. Presumed acute tracheobronchitis with hypoxemic respiratory failure led to antibiotic and corticosteroid treatment. Despite the resolution of inflammatory parameters, the patient experienced clinical deterioration. A subsequent antibiotic cycle failed. A thoracic CT scan revealed cavitary lesions suggestive of tuberculosis. Mycobacteria tests from sputum and broncoalveolar lavage were negative, while mycology confirmed *Aspergillus fumigatus*. A 14-day IV voriconazole course resulted in significant clinical improvement and regression of cavitation on reassessment CT, with discharge under oral voriconazole.

Discussion: One of the main causes of admission in internal medicine wards are respiratory conditions, mainly virus or bacterial infections. The lack of response to the usual treatment should prompt the search for an alternative diagnosis, which will guide the proper treatment. In this case, uncertainty will remain as to whether the initial respiratory condition was caused by aspergillosis or if the use of intravenous corticosteroids triggered the infection.

Keywords: *Aspergillosis, corticosteroids, cavitary lesions*

[Abstract:2964]

RISK FACTORS FOR THE DEVELOPMENT OF PULMONARY ASPERGILLOSIS IN PATIENTS WITH COVID-19 INFECTION

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Purpose: Coronavirus-associated invasive pulmonary aspergillosis (CAPA) is an infectious complication that causes high mortality. The objective has been the evaluation of possible risk factors that may favour CAPA infection.

Methods: A two-year retrospective observational study (2020-2022), in which patients with CAPA were recorded in a second-level hospital. Demographic data (age, sex, and body mass index (BMI)), time between diagnosis of COVID-19 and aspergillosis, species of aspergillus, treatment, and outcome were recorded (healing/

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success). The risk factors evaluated were: patient comorbidities, previous immunosuppression, treatment with corticosteroids and/or immunomodulatory treatment (tocilizumab/baricitinib, etc.) for COVID-19.

Findings: A total of 22 patients diagnosed with CAPA were registered. The median age was 66 [58-86] years, 63.6% were women. The mean (+SD) BMI was 29.4 + 5.1. The mean (+SD) time between COVID diagnosis and CAPA was 16.4 + 12.1 days. The most frequently isolated species was Aspergillus fumigatus (n=15). 86.4% of patients required admission to the intensive care unit. 17 patients were treated with voriconazole, three with isavuconazole, one with the combination of voriconazole and liposomal amphotericin B and one did not require treatment (colonization). 59.1% died. Some risk factor for the development of CAPA was found in 90.1%. In the registry of comorbidities, obesity was the most frequent (n=17). 11 patients had previous immunosuppression. 100% of patients were treated for COVID-19 infection with dexamethasone according to the Recovery trial dosage. 72.7% of patients received some type of immunomodulator.

Conclusions: High mortality rate in patients with CAPA. Main risk factors identified have been: obesity and immunosuppression.

Keywords: *CAPA, immunosuppression, mortality*

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