265. Scores, biomarkers and risk factors in respiratory infections

P2493

Bacteriological analysis of lower respiratory tract in patients with rheumatoid arthritis and other collagen vascular diseases

Kentarou Akata, Shuya Nagata, Takashi Kido, Kei Yamasaki, Toshinori Kawanami, Hiroshi Ishimoto, Kazuhiro Yatera, Hiroshi Mukae. *Department of Respiratory Medicine, University of Occupational and Environmental Health Japan, KItakyusyu, Fukuoka, Japan*

Background: Lower respiratory tract infections (LRTI, bronchiectasis, bronchitis and bronchiolitis) are common comorbidities in patients with rheumatoid arthritis (RA). According to the recent advances of the treatment modalities of RA and other collagen vascular diseases (CVD) including anti-inflammatory biological agents, an aggressive diagnosis of LRTI including nontuberculous mycobacteriosis (NTM) is becoming more important.
Patients and methods: From April 2008 to August 2011, patients with RA and other CVD with suspicion of NTM were enrolled. Additionally, patients with non-CVD with suspicion of NTM were also enrolled as controls. Bronchial washing were directly obtained from the pathological lesions, and bacteriological analyses were demonstrated. Chest CT findings were also evaluated.
Results: A total of 106 patients (41 with RA, 22 with CVD other than RA and 43 with non-CVD) were enrolled. *P. aeruginosa* (26.8%) were the most frequently detected in patients with RA, followed by *S. aureus* (19.5%) and NTM (7.3%). In patients with CVD other than RA, *P. aeruginosa* (9.1%), *S. aureus* (13.6%), NTM (4.5%) were detected. Additionally, *P. aeruginosa* (7.0%), *S. aureus* (11.6%) and NTM (25.6%) were detected in non-CVD patients. Chest CT findings of patients with RA complicating *P. aeruginosa* infection demonstrated that these patients showed more widespread of granular opacities and bronchiectasis and tendency of exacerbation of these pathological lesions.
Conclusion: *P. aeruginosa* was frequently detected in patients with RA complicating LRTI, and it is speculated that *P. aeruginosa* infection in patients with RA seemed to be an indicative factor of exacerbation of LRTI.

P2494

CURB 65 or CURB (S) 65 for community acquired pneumonia?

Sakine Nazik, Nurdan Köktürk, Ayse Baha, Numan Ekim. *Pulmonary Medicine, Gazi University School of Medicine, Ankara, Turkey*

The CURB-65 score (confusion, blood urea >42,8 mg/dl, respiratory rate> 30/min, blood pressure < 90/60 mm Hg, age> 65) is quite a practical method for determining the need for hospitalization in community-acquired pneumonia. On the other hand, it is a known fact that CURB-65 is rather more sensitive for determining patients with severe illness, and lacks sensitivity towards other factors dealing with milder cases. The purpose of this study is to investigate factors that determine the need for hospitalization in patients not requiring hospitalization according to CURB-65.
The study was undertaken on 54 patients diagnosed with pneumonia and were recorded to the TTD pneumonia database between 2010-2012.
Nineteen (35,2%) of the patients were female while 35 (64,8%) were male. The mean age was 67,5. The total treatment time, duration of hospitalization, saturations (SpO2), partial arterial oxygen pressures (PaO2) and mean pneumonia severity index (PSI) values were compared between 15 patients recieving 0-1 CURB-65 points (27.8%) (Group 1) and 39 patients receiving 2 or more CURB-65 points (72.1%) (Group 2). According to the data, the mean PSI score in Group 1 (74,93±30,45) and in Group 2 (106,61±37,4) were statistically different (p=0,003) even though their SaO2, paO2, hospitalization and treatment time were similar (Group 1 SaO2: 89±8,45, PaO2: 53,0±8,72; Group 2 SaO2: 89,23±5,94, PaO2: 54,61±8,48; p< 0,05).
The study shows that although the PSI are different, low SaO2 levels in both groups show that hypoxemia is the main factor for hospitalization in patients with low CURB indexes. Therefore we propose that the CURB(S) 65 hypothetic index is a better determinant than CURB 65 for hospitalization.

P2495

Do physicians use urinary pneumococcal antigen test (UPAT) appropriately?

Vinod Palissery, Ajay Kamath, Catherine Tremlett. *Respiratory Medicine, Norfolk and Norwich University Hospital, Norwich, Norfolk, United Kingdom Respiratory Medicine, Norfolk and Norwich University Hospital, Norwich, Norfolk, United Kingdom Department of Microbiology, Norfolk and Norwich University Hospital, Norwich, Norfolk, United Kingdom*

Introduction: UPAT is a useful test to identify the pneumococcal aetiology of pneumonia. The specificity and sensitivity are high in moderate to severe pneumonia (MSP). British Thoracic Society (BTS) recommends this test only in MSP. But as this test has become more accessible it is being used inappropriately in non severe pneumonia, infective exacerbation of asthma and COPD. The most important use of the test is in modifying the antibiotic regimen according to the result. We did this study to look at the utility of the test and how it altered clinical management.
Method: We conducted a retrospective analysis of medical records of all patients who had UPAT in a 6-month period between December 2007 and May 2008. The study was performed in a 1000 bed tertiary teaching hospital in United Kingdom. BTS CURB-65 scoring was used as a measure of severity of pneumonia.
Results: One hundred and eighteen patients had the test in the 6-month study period but only 37 patients met criteria for moderate to severe pneumonia (MSP). Rest of the patients had non-severe pneumonia, infective exacerbation of asthma/COPD/Bronchiectasis. Ten patients had positive results (8.4%); 13.5% positive results were in MSP group and 6.1% in the other group. Most common antibiotic regimen commenced in our institution was amoxicillin and clarithromycin (41%). Modification in antibiotic regimen guided by the results was done only in three patients.
Conclusion: UPAT is used inappropriately and the test results are not effectively used in modifying management.

P2496

A clinical, radiological and microbiological profile of lung abscess

Maria Malik, Shaista Ghazal, Ashok Kumara, Nadeem Rizvi. *Chest Medicine, Jinnah Post Graduate Medical Centre, Karachi, Pakistan*

Introduction: Lung abscesses continue to be a frequent presentation for physicians in Pakistan.With little local data available on the clinical correlations of the disease, there is a pressing need to describe the various factors associated with the condition.
Objectives: To evaluate the clinical,radiological and microbiological profile of lung abscess.
Methods: A retrospective case study was done through studying hospital records of 41 patients admitted with lung abscess at a tertiary care hospital in Karachi, Pakistan. Demographical data, clinical symptoms, risk factor assessment, radiological findings and culture reports were studied to outline a relevant profile.
Results: Over half the cases comprised of adult, male patients. Clinically, 90.2% presented with productive cough, followed by 82.9% with fever, and 58.5% with haemoptysis. A significant association of 65.9% was found with smoking. Among other risk factors, poor oral hygiene was found in 56.1% of the cases, diabetes mellitus in 43.9%, pneumonia in 22%, and malignancy was diagnosed in 4.9%. Radiographically, 56.1% showed bilateral and 51.2% had right lower lung zone involvement. Sputum Gram staining revealed Gram negative rods and Gram positive cocci in 36.6% of the cases. AFB smear was positive in 22%. Sputum cultures showed Pseudomonas aeruginosa was present in 29.3%. No growth on blood cultures was seen in 86.6% and only 9.8% exhibited growth of E. coli.
Conclusion: Lung abscess was found to be more common in adult men,and was significantly related to smoking. The other common risk factor was found to be poor oral hygiene,while the right lower lung zone was the main site of abscess formation. Pseudomonas aeruginosa was the major pathogen implicated on sputum cultures.

P2497

The comparison of different methods of etiologic diagnosis of community-acquired pneumonia

Kirill Zykov[1], Anna Rvacheva[1], Elena Kaznacheeva[1], Alexey Pustovalov[1], Galina Khaptkhaeva[2], Alexander Chuchalin[2], Evgeniy Sokolov[1]. [1]*Laboratory of Pulmonology, Moscow Medico-stomatological University, Moscow, Russian Federation;* [2]*Klinical Department, Institute of Pulmonology, Moscow, Russian Federation*

The aim of our study was to compare different laboratory methods of the CAP etiological factor identification.
30 patients (20 male and 10 female) with non-severe CAP were enrolled in the study (50,5±3,4 years). We have performed: microbiological test and polymerase chain reaction (PCR)-based study of induced sputum and peripheral blood samples, serologic tests to evaluate the level of IgM and IgG antibodies to C.pneumoniae and M.pneumoniae in peripheral blood.
Results: With all laboratory tests the etiologic agents were determined in 76,7% of cases, mostly of S.pneumoniae. In sputum there were 30 positive results in PCR and 19 - in microbiological study. PCR study of sputum revealed in 10 patients monobacterial flora, 5 - bacterial mixture, 4 - virus-bacterial mixture while in microbiological study in all 19 patients there was monobacterial flora. The frequency of S.pneumoniae was comparable both in the PCR study, and in microbiological studies (46.6%). Frequency of K.pneumoniae and H.influenzae identification was the highest in the PCR study of sputum (13.3 and 26,7%). In PCR study of sputum M.pneumoniae was detected in 6,7%, C.pneumoniae was not found. Serological tests have revealed IgM antibodies to M.pneumoniae in 20% of patients, C.pneumoniae in 13.3% of patients.
Conclusion: PCR study is the most efficient method of etiological diagnostics of the CAP, and reflects the complex etiological picture compared to microbiological study. Serological tests with specific IgM detection are the efficient methods of etiologic diagnosis in CAP caused by atypical pathogens. Thus the combination of different methods of etiologic diagnostics is the most appropriate way for non-severe CAP.

P2498

Prevalence of MRSA nasal carrier rate in hematology patients of Benghazi Medical Center using PCR-based method; first study in Libya

Khalid A. Gaber[1], Wail A. Eldukali[2], Fathi S. Al-Jehani[1]. [1]*Medicine, Benghazi Medical Centre - Benghazi University, Benghazi, Libyan Arab Jamahiriya;* [2]*Medicine, Benghazi Medical Centre, Benghazi, Libyan Arab Jamahiriya*

Introduction: Carriers of multi drug resistant staphylococcus aureus (MRSA) may spread or develop infections if not discovered and properly treated. Knowing MRSA carrier status would be useful especially for hematology patients on chemotherapy.
Aim and objective: The aim of the study was to determine prevalence of nasal MRSA carrier rates in hematology patients of Benghazi Medical Center (BMC).
Method: Hematology patients admitted to hospital or under regular follow up in clinic were included and consent obtained. Nasal swabs (APTACA) were taken in standard way. Samples were analyzed for the presence of MRSA by using PCR based system (Gene expert machine-GXMRSA-120). The following data were collected; age, gender, weight, height, underlying hematological diagnosis, history of chemotherapy, hospital admission or MRSA swab in the previous 6 months and long term intravascular device insertion.
Results: 107 patients were screened. 49 (45.7%) were males. Mean age was 48 years and body mass index was 25 kg/m^2. 5 out of 107 patients tested positive for nasal MRSA. 4 out of 5 had lymph proliferative disorders and all received chemotherapy. The rest of results are outlined in table.

	MRSA positive, n=5 (5%)	MRSA negative, n=102 (95%)
Age (mean)	52 years	47 years
Males	3 (60%)	46 (45%)
Myeloprofilative disease	1 (20%)	12 (12%)
Lymphoproliferative disease	4 (80%)	45 (44%)
Bleeding disorder	0 (0%)	11 (11%)
Other disease	0 (0%)	4 (4%)
Chemotherapy (H/O)	5 (100%)	62 (61%)
MRSA (H/O)	0 (0%)	0 (0%)
Intravascular device	0 (0%)	0 (0%)

Conclusion: 4.5% of patients screened in hematology department of BMC were nasal carriers for MRSA. This is the first study in Libya using PCR based method.

P2499

Influence of age in the clinical differentiation of atypical pneumonia in adults

Naoyuki Miyashita[1], Yasuhiro Kawai[2], Mika Kubo[2], Kazunobu Ouchi[2], Niro Okimoto[1]. [1]*Department of Internal Medicine I, Kawasaki Medical School, Okayama, Japan;* [2]*Department of Pediatrics, Kawasaki Medical School, Okayama, Japan*

Background and objective: The Japanese Respiratory Society (JRS) scoring system is a useful tool in the early and simple presumptive diagnosis of atypical pneumonia, *Mycoplasma pneumoniae* and *Chlamydia pneumoniae* pneumonia. However, it has been suggested that it seems to be difficult to diagnose atypical pneumonia in the elderly using this system. In the present study, we evaluated the accuracy and usefulness of the JRS scoring system in the different age groups.
Methods: We analyzed 262 cases of *M. pneumoniae*, 98 cases of *C. pneumoniae* and 364 cases of common bacterial pneumonia.
Results: The frequency of co-morbid illnesses and higher risk classes in the elderly (age ≥60 years) group was significantly higher than those of non-elderly patients (age <60 years) in both atypical pneumonias. One or more additional etiological factors were found more frequently in the elderly group than in non-elderly patients. The diagnostic sensitivity and specificity for atypical pneumonia were 39% and 88% for the elderly group and 86% and 88% for age non-elderly group, respectively. When the diagnostic sensitivity was analyzed for different ages stratified into 10-year groups, the sensitivity was highest in the 18–29-year-old group and decreased in order from the youngest to the oldest age group.
Conclusions: Our results indicate that it is difficult to distinguish between atypical pneumonia and bacterial pneumonia in the elderly using the JRS scoring system. When treating patients aged ≥60 years, physicians should choose fluoroquinolones or β-lactams + macrolides as empirical first-choice drugs, so as to always include potential antibiotic cover for atypical pathogens.

P2500

Clinical features and prognostic factors in elderly patients with aspiration pneumonia

Seo Woo Kim[1], Yon Ju Ryu[1], Seok Jung Lee[1], Jin Hwa Lee[1], Jung Hyun Chang[1], Sung Shine Shim[2]. [1]*Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, Ewha Womans University, School of Medicine, Mokdong Hospital, Seoul, Republic of Korea;* [2]*Radiology Department, Ewha Womans University, School of Medicine, Mokdong Hospital, Seoul, Republic of Korea*

Background: The aims of this study were to investigate the clinical features, risk factors, and outcomes of patients with aspiration pneumonia and to identify the prognostic factors contributing to mortality in these patients.
Method: Following a retrospective review of clinical data and radiographic findings between 2006 and 2010, 176 patients were enrolled in this study.
Results: The median age of patients was 75 years (range, 66-81), and 125 (71%) patients were male. 89 (51%) were admitted to the medical ICU and their clinical course was fulminant as a result of acute respiratory failure requiring mechanical ventilation in 79 (45%), septic shock in 36, ARDS in 20, and multi-organ failure in 26. Overall in-hospital mortality was 22.7% (40/176) with a median survival of 18 (range 9-43) days. Comorbidities or risk factors associated aspiration included cerebrovascular accidents (*n*=79), bed-ridden status (*n*=67), DM (*n*=58), dysphagia (*n*=57), malignancy (*n*=29), dementia (*n*=25), alcoholism (*n*=18) and Parkinson's disease (*n*=14). The leading pathogen considered to be associated with pneumonia is MRSA (*n*=60), followed by *A. baumanii* (*n*=24), *K. pneumonia* (*n*=19), and *P. aeruginosa* (*n*=17). Independent predictive factors of in-hospital mortality included septic shock (HR 7.1, 95% CI, 2.6-19.3, *P<0.001*), dysphagia (HR 5.3, 95% CI, 1.5-19.1, *P*=0.010), hypoalbuminemia (serum albumin ≤2.5 g/dL) (HR 2.7, 95% CI, 1.1-6.9, *P*=0.038), and CVA (HR 2.6, 95% CI, 1.1-6.5, *P*=0.036).
Conclusion: Aspiration pneumonia has a high mortality rate and poor prognosis, particularly in patients with septic shock, dysphagia, hypoalbuminemia, CVA.

P2501

Incidence of ventilator associated pneumonia (VAP) and assessment of serial estimation of procalcitonin levels as a prognostic marker in cases of VAP in a tertiary centre in India

Vikas Sikri[1], Rajesh Chawla[1], Raman Sardana[2], Ashish Jain[1]. [1]*Respiratory & Critical Care, Indraprastha Apollo Hospitals, New Delhi, India;* [2]*Microbiology, Indraprastha Apollo Hospitals, New Delhi, India*

Introduction: Patients developing VAP have higher mortality rates and longer ICU stays. Various markers have been for prognosis in patients who develop VAP. We studied serial estimation of procalcitonin (PCT) levels in VAP as a prognostic marker.
Aims & objectives: To calculate incidence of VAP per 1000 ventilator days and assess role of PCT as a prognostic marker in VAP.
Material & methods: All consecutive patients intubated in the ICUs were assessed for development of VAP using CPIS score. In patients who developed VAP during the study period, there serum PCT levels were collected on day 0, 3 and 7 of developing VAP.
Results: We studied 351 patients, 25 developed VAP. Incidence of VAP was 6.33/1000 ventilated days. (Incidence/1000 ventilator days= No. Of VAP cases/Total ventilator days C 1000).Patients having higher initial levels & in whom the levels decreased subsequently showed better survival as compared to low initial values and a marginal fall/rise in subsequently values. Mean value of PCT in survivor group on 0,3 & 7 days were 45.47, 21.01 and 7.26 respectively (standard error of mean of 34.71, 15.28 & 4.95) while the levels in non-survivor group were 1.94, 2.11 & 1.99 respectively (standard error of mean of 0.72, 0.80 & 1.25). The PCT levels remained low/steady on serial monitoring in the non survivor.
Conclusions: Our study further re-enforces the role of serial estimation of PCT as a prognostic marker in patients with VAP. Though further studies with larger number of patients is required to make its estimation as a standard protocol.

P2502

Procalcitonin and proadrenomedullin in COPD patients: Stable state versus exacerbation difference in mortality rate?

M.C. Telgen[1,2], M.G.J. Brusse-Keizer[1], P.D.L.P.M. van der Valk[1], J. van der Palen[1,5], H.A.M. Kerstjens[4], M.G.R Hendrix[3]. *[1]Department of Pulmonary Medicine, Medisch Spectrum Twente, Enschede, Netherlands; [2]Department of Internal Medicine, Medisch Spectrum Twente, Enschede, Netherlands; [3]Department of Medical Microbiology, Regional Laboratory of Public Health, Enschede, Netherlands; [4]Department of Pulmonary Medicine, University Medical Centre Groningen, and University of Groningen, Netherlands; [5]Department of Research Methodology, Measurement, and Data Analysis, University of Twente, Enschede, Netherlands*

Rationale: Little is known about proadrenomedullin (pro-ADM) and procalcitonin (PCT), biomarkers in COPD, in relation with mortality. Stolz. D et al. (Chest 2008;134:263-272) suggested that pro-ADM at hospitalization for an acute exacerbation of COPD (AECOPD) predicts survival. In our cohort of well defined COPD patients (the COMIC study) we wanted to study the association between PCT and pro-ADM levels in stable state and at hospitalization with mortality.
Methods: PCT and pro-ADM levels were determined in 187 patients who provided a plasma sample during stable state and at hospitalization for AECOPD. The mean follow-up after inclusion was 46 months ±20. Date of death was verified from the municipal administration.
Results: The PCT and pro-ADM levels were significantly increased at hospitalization compared to stable state. Patients who died had a significantly higher level of PCT and pro-ADM both during stable state and hospitalization.

Table 1. Pro-ADM and PCT results

	Pro-ADM nmol/l (mean (±SD))		PCT ng/ml (median (IQR))	
	Stable state	Exacerbation	Stable state	Exacerbation
Died (N=82)	0.93 (±0.41)	1.08 (±0.50)	0.060 (0.041 to 0.090)	0.078 (0.043 to 0.202)
Alive (N=104)	0.72 (±0.25)	0.78 (±0.27)	0.046 (0.031 to 0.061)	0.048 (0.034 to 0.091)

Conclusions: Both PCT and pro-ADM could be a marker for mortality in COPD.

P2503

Red cell distribution wide (RDW) as severity biomarker in patients with community-adquired pneumonia (CAP)

Sergio Fandos[1], Elisa Minchole[1], Ana Simon[1], Carolina Panadero[1], Ana Lasierra[2], Guillermo Hernandez[2], Carlos Lapresta[1], Salvador Bello[1]. *[1]Pulmonology, Hospital Miguel Servet, Zaragoza, Spain; [2]Biochemistry, Hospital Miguel Servet, Zaragoza, Spain*

Introducction: Some biomarkers as Proadrenomedullin (proADM), alone or with severity scores, have showed their usefulness for assessing severity of community acquired pneumonia (CAP). Red cell distribution width (RDW) has been proposed as prognostic mortality factor.
Materials and methods: We conducted a prospective study of 282 immunocompetent adult patients admitted to hospital with a diagnosis of CAP, and correlated their PSI score and proADM levels with their RDW ad admittance.
Results: RDW showed a weak linear correlation, but highly significant with both PSI (CC: 0,442, p<0.001) and proADM (CC:0,346, p<0.001). The lineal regression coefficient of DRW with PSI score was as well significant (p<0.001).

Correlation* RDW with proADM

Coefficient (r)	0,346
statistical significance	0,000

* Spearman correlation index

There is a weak linear correlation (r = 0.346) highly significant

Correlation* RDW with PSI

Coefficient (r)	0,442
statistical significance	0,000

* Spearman correlation index

There is a weak linear correlation (r = 0.442) highly significant

Conclusion: Like as proADM, RDW seems is a good predictor of severity of CAP at the time of admission. Unlike biomarkers usually studied, it is a cheep, rapid and widely available test, and deserves a further research.

P2504

Pleural fluid C-reactive protein concentration in discriminating uncomplicated from complicated parapneumonic pleural effusion

Sanja Petrusevska Marinkovic[1], Irena Kondova Topuzovska[1], Zvonko Milenkovic[1], Goran Kondov[2], Ankica Anastasovska[1]. *[1]Respiratory Diseases, University Clinic of Infectious Diseases and Febrile Conditions, Skopje, Macedonia, The Former Yugoslav Republic of; [2]Thoracocardiovascular Surgery, University Clinic, Skopje, Macedonia, The Former Yugoslav Republic of*

Parapneumonic pleural effusions (PPE) are the second most common cause of exudates after malignant effusions. The early discrimination between uncomplicated parapneumonic effusions (UPPE) from complicated parapneumonic effusions (CPPE) is important for adequate management of PPE. Oversight in distinction between these two groups with classical recommended markers (pH, lactic dehydrogenase (LDH) and glucose) require alternative tests. The aim of this study was to determine the role and value of pleural fluid C-reactive protein (CRP) in differentiation between UPPE from CPPE. The study was including 60 patients: 30 with UPPE and 30 with CPPE. CRP concentration was measured with Ektahem Clinical Chemistry tests on analyzer Vitros 250. LDH and glucose were performed on analyzer Vitros 350. Pleural pH was assessed with blood gas machine. Receiver-operating curve were to assess the sensitivity and specifice of pleural biochemical parameters. CRP was statistically higher in CPPE (118.97±31.04 U/L), than in group with UPPE (40.24±22.30 U/l) (t=-11,28; p< 0,05). According to Spearman,s correlation, positive correlation was between levels of pleural CRP concentration and CRP in serum (r=0.635; p<0.01). Positive correlation was between pleural concentration of CRP and LDH (r=0.811; p<0.01). Significant negative correlation was between levels of CRP and pH (r=-0.813; p<0,05), and of CRP and glucose in pleural fluid (r=-0,826; p<0.01). The CRP cut-off value of 73.43 mg/l, differentiated CPPE from UPPE with a sensitivity and a specifity of 100%.
Conclusion: CRP may be used as a good marker in discrimination UPPE from CPPE and management of patients with PPE.

P2505

Lung and serum biomarkers of tissue lesions due to acute exacerbation of COPD

Kornelija Mise, Zeljko Ivancevic, Ivan Gudelj, Slava Kotarac, Jasminka Svalina-Grmusa. *Clinic for Lung Diseases, Clinical Hospital Center, Split, Croatia Clinic for Lung Diseases, Clinical Hospital Center, Split, Croatia*

Introduction: In COPD are common respiratory tract infections, resulting in exacerbation of disease.
Laboratory findings are normal or slightly abnormal, such as inflammatory biomarkers: WBC, CRP, LDH, ALP.
What is going on with pathological processes in lung tissue?
Aim: Analyze tissue damage topical and serum biomarkers.
Materials: 86 COPD pts in exacerbation underwent bronchoscopy. Tissue damage topical biomarkers (LDH, CRP, ALP, bronchus pH acidity) were analyzed from the bronchial aspirate.
Results: Average pts age is 64.6 y. Lung LDH mean value (L-LDH) was 560.88±184, and in serum 181.66±79.64 U/L. Lung ALP mean value was 58.56±37.75 U/L, and in serum (S-ALP) 78.76±28.66 U/L. Lung CRP mean value (L-CRP) was 0.06±0.78 mg%, and in the serum 56.54±17.45 mg%. L-CRP was detected in 10 pts only (in 76 not).
Mean lung acidity (pH) was 7.89±0.82.
The most common organism causing COPD exacerbation was: H. influenze, with biomarker values of L-LDH X=1746.30 U/L (max 10.856 U/L), and S-LDH=188.4 U/L. The second most common was P. aeruginosa, with biomarker values of L-LDH X=1456.61 U/L, and S-LDH=201.8.
Conclusion: In pts with COPD, serum inflammatory biomarkers are not consistent index of COPD exacerbation, nor its severity. Lung LDH values are extremely increased, and serum LDH values are rarely pathological. These facts indicate severe lung tissue damage, although S-LDH values are not significant for pathological process. In contrast, L-CRP was found only in trace in few pts, whereas serum values are always increased. In bacterial lung inflammation pH is alkaline (X=7,89), however, it is not comparable with blood pH values, since the measuring method was different.

P2506

Elevated creatinine is a sensitive severity marker in community acquired pneumonia

Joanne Sloan, Janet Wilson, Carly Griffin, Morven Wilkie, James Chalmers, Stuart Schembri. *Respiratory Department, Ninewells Hospital, Dundee, United Kingdom*

Background: It is recognised that acute kidney injury (AKI), as classified by the International Kidney Disease Group Improving Global outcomes staging classification, is associated with increased 30-day mortality in patients with community acquired pneumonia (CAP). This study aimed to determine if increases in serum creatinine not meeting the criteria for AKI were associated with increased 30-day mortality.
Methods: A retrospective study of patients admitted over a 6 month period, with radiologically confirmed CAP, was performed in a teaching hospital. Baseline creatinine, admission creatinine, AKI severity and 30-day mortality were recorded.

Results: 210 patients (52% male, 48% female) were included in the study with a median age of 76 years. 26 (12.4%) patients met the criteria for AKI. 57 (27.1%) patients had rises in creatinine above baseline, but not meeting AKI criteria. As expected AKI scoring was associated with increased 30 day mortality.

Table 1. Incidence of AKI and 30 day mortality rates

AKI staging	Number of Patients	30 Day Mortality
0	183 (87.1%)	28 (15.3%)
1	15 (7.1%)	4 (26.7%)
2	8 (3.8%)	4 (50%)
3	3 (1.4%)	2 (66.7%)

Greater than 20% rises in creatinine above baseline were strongly associated with a higher 30 day mortality rate.

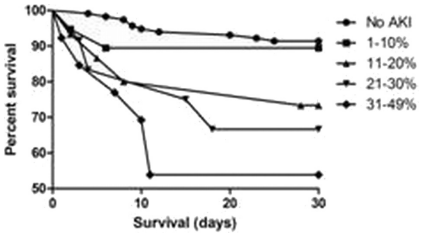

Figure 1. Elevated creatinine and 30-day mortality.

Log rank test p=0.002.
Conclusions: Creatinine rises as low as 20% above baseline in patients with CAP are associated with higher 30 day mortality rates than for patients without creatinine rises.

P2507
Admission hyperglycaemia is associated with increased risk of diabetes mellitus following hospitalisation with community acquired pneumonia
Aran Singanayagam[1], Gillian Fleming[2], Ahsan Akram[2], Adam Hill[2], James Chalmers[2]. *[1]Respiratory Medicine, St. Mary's Hospital, London, United Kingdom; [2]Department of Respiratory Medicine, Royal Infirmary of Edinburgh, United Kingdom*

Background: Hyperglycaemia has previously been shown to correlate with adverse outcome in community acquired pneumonia (CAP). The aim of this study was to assess whether hyperglycaemia is associated with increased risk of diabetes mellitus (DM) following admission with CAP.
Methods: We conducted a prospective observational study of patients who had survived hospitalisation with CAP. All patients had random serum glucose measured on admission and were categorised into normoglycaemia (4.0-6.0 mmol/L), mild hyperglycaemia (6.1-7.0 mmol/L), moderate hyperglycaemia (7.1-14.0 mmol/L) and severe hyperglycaemia (>14.0 mmol/L). Patients with pre-existing DM or those who were hypoglycaemic on admission were excluded. The outcome of interest was diagnosis of diabetes mellitus within one year of hospital discharge.
Results: 1202 patients were included with 85 (7.1%) diagnosed with DM within one year of follow-up. Rates of diabetes diagnoses according to admission glucose level were: normoglycaemic group 3.9%, mild hyperglycaemic group 6.4%, moderate hyperglycaemic group 9.8% and severe hyperglycaemic group 64.7%. On multivariable analysis, adjusting for age, gender, smoking status, cardiovascular disease and pneumonia severity, there was a graded increase in association of hyperglycaemia and subsequent diabetes diagnosis: mild hyperglycaemia (OR 1.55 (0.78-3.09) p=0.2), moderate hyperglycaemia (OR 1.69 (1.25-2.29) p=0.0007), severe hyperglycaemia (OR 3.0 (2.02-4.46) p<00001).
Conclusion: Moderate to severe hyperglycaemia on admission with CAP is associated with increased risk of subsequent DM diagnosis within one year of hospital discharge.

P2508
Risk factors in readmission of patients with community-acquired pneumonia discharged from the emergency department
Emma Vázquez-Espinosa, Rosa Mar Gómez-Punter, Jose Andrés Gª Romero de Tejada, Javier Aspa Marco, Olga Rajas Naranjo. *Pulmonology, Hospital Universitario de la Princesa, Madrid, Spain*

Correct management of community-acquired pneumonia (CAP) in Emergency Department (ED) is essential in outcome.
Objective: To determine factors associated with worse outcome in discharged CAP patients from ED and readmission.
Material and methods: Retrospective study. 210 patients included. September/10-January/12. Variables included: clinical characteristics, comorbidities, vaccination, antibiotic therapy before admission and at discharge, causes of readmission. Statistical analysis: SPSS19.
Results: Mean age 52 yrs. 54% women. 26% were vaccinated with flu vaccine and 16.7% pneumococcal vaccine. 22.4% had received previous antibiotic (47%amoxi-clavulanate). 62% were no tested for Legionella and pneumococcal urinary antigen. At discharge, 67% patients received levofloxacin, 10% moxifloxacin, 13% amoxi-clavulanate and 7% amoxicillin-clavulanate plus azithromycin. 5.7% of patients were readmitted, showing statistically significance in: lower pO2 57.4(p=0.01), higher GPT 97(p=0.03), higher HCO_3 28(p=0.04), heart rate higher than 78.5(p=0,00), respiratory rate 20.2 (p=0.02), multilobar CAP 33.3%(p=0.04), 91.7% were classified in Fine1-3(p=0.04). Patients that remained under observation 24 hours after diagnosis, were statistically significance in: age(p=0.09), Charlson index(p=0.00), urea(p=0.03), p02(p=0.02), respiratory rate(p=0.01), T° (p=0.03), $S0_2$(p=0.00), gender(p=0.03), alcohol intake(p=0.00), coronary disease(p=0.01), renal disease(p=0.04), Fine 3-4(p=0.00), $CURB_{65}$1-2(p=0.01).
Conclusions: – Low SatO2, high levels of GPT, high heart and respiratory rates, multilobar CAP Fine 1-3 are risk factors to readmission.
– Patients under observation had higher Charlson and Fine3-4.

P2509
Study on human tracheal bronchial epithelial cells secreting cytokines in vitro by nontypeable haemophilus influenzae
Jianmei Qian[2], Chunxue Bai[1], Guifang Wang[1]. *[1]Department of Pulmonary Disease, Zohngshan Hospital, Shanghai, China; [2]Department of Internal Medicine, The Traditional Chinese Medical Hospital in Kunshan, Kunshan, Jiangsu Province, China*

Obstrucive To study the interaction of nontypeable haemophilus influenzae strain ATCC49247 with primary human bronchial epithelial cells (HBEC) and the NTHi-induced release and expression of proinflammoraty cytokine in the HBEC.
Methods: HBEC were isolated by using low temperature protease digestion and cultured in serum-free medium. Confluent epithelial cell cultures were incubated with NTHi, NTHi +erythromycin(0.1mg/L), NTHi + erythromycin(10mg/L), NTHi + gentamicin(100mg/L), NTHi+dexamethasone(100uM)and normal untreated control cells after 24h. Release of IL-8 and TNF-a into the supernatant was assayed by enzyme-linked immunosorbent assay; The expression of ICAM-1 was examined by immunohistochemistry staining.
Results: (1) Some HBECs were transformed and died after 24h. (2) HBEC: NTHi-induced cells released significantly greater amounts of IL-8 and TNF-a (2172.18±131.83, 7.22±2.17 pg/ml, respectively) than normal untreated cells (1115.76±57.63,2.84±1.04pg/ml) (p<0.001). NTHi also significantly increased the total number of of ICAM-1 positive cells from 10±5%(in control untreated cultures) to 80±5%(p<0.001). Similarly, incubation of HBEC with 0.1mg/L erythromycin and gentamicin significantly induced release of IL-8, TNF-a and the expression of ICAM-1, which was blocked by 10mg/L erythromycin and 100uM dexamethasone.
Conclusions: HBEC can release IL-8 and TNF-a. NTHi may increase significantly release and expression of proinflammatory cytokine. Gentamicin have no anti-inflammatory effects. Erythromycin may have anti-inflammatory effects. Dexamethasone has distinct anti-inflammatory effects.

P2510
Comparision of procalcitonin and CURB-65 in pneumonia
Savas Ozsu, Ismail Yilmaz, Yasin Abul, Funda Öztuna, Yilmaz Bulbul, Tevfik Ozlu. *Department of Pulmonary, Karadeniz Technical University Faculty of Medicine, Trabzon, Turkey*

CURB-65 score, pneumonia and hospital admission decision as well as useful and simple clinical scoring method for prognosis. CURB-65 score, >= 2 is recommended for patients with inpatient treatment. The other hand, procalcitonin (PCT), a marker for determining prognosis of pneumonia. CURB-65 score and PCT levels were compared in this study.
In this study 58 patients were admitted to our clinic due to common acquired pneumonia. Patients, the clinical and laboratory findings were recorded. CURB-65 score was calculated. CURB-65 score in patients with Group-1 (score, <2) and GrupII-(score, >= 2) as divided into 2 groups. (Normal value: Procalcitonin<0.1, CRP <0.5).
In our study, median age 68 (18-96) was found. The most frequent clinical symptoms were cough (83%), dyspnea (71%) and fever (67%), respectively. In group-I, mean PCT level was 3.6±7.7, in Group-II PCT was 9±20 (p = 0.028). The average white blood cell was 12.9±6.6 and was 13.3±6.2 2. (p > 0.05), CRP level of 18.2±1.0, and 19.8±1.4 (p> 0.05), respectively. Total 11 (19%) patients died. The median value of PCT was significantly higher in patients who died (2.2 vs. 0.45, p = 0.012). Similarly, CRP was significantly higher in patients who died (33 vs. 14, p = 0.016). PCT levels were positively correlated with the CURB-65 score (r = 0,296, p = 0.024).
As a result, PCT levels correlated with a CURB-65 score in pneumonia. Initial PCT level may be considered in patients with pneumonia.

P2511

Bacterial infection in acute exacerbations of chronic obstructive pulmonary disease

Fatma Chermiti Ben Abdallah, Wafa Bouhawel, Imen Sahnoun, Ridha Mahouachi, Amel Chtourou, Sofia Taktak, Ali Ben Kheder. *PneumologyIv Department, Abderrahmen Mami Hospital, Ariana, Tunisia*

Inroduction: Infections are major causes of acute exacerbations (AE) of chronic obstructive pulmonary disease (COPD) which increase mortality rate and impair quality of life of patients.
Aim: Determine the bacterial profile in patients hospitalized in our department for AE of COPD caused broncho-pulmonary infection.
Methods: Retrospective study including 100 patients hospitalized for AE of COPD. Broncho-pulmonary infection was considered because of clinical, radiological and or bacteriological criteria.
Results: Mean age of patients was 63 years and mean duration of the disease was 11 years. Regarding to GOLD classification, 63% of patients had COPD stage II, 34% stage III and 3% stage IV. Infectious agent was identified in 69 patients with sputum culture. Isolated pathogens were: Haemophilius Influenzae (28), Streptococcus Pneumoniae (8), Streptococcus (3), Enterobacter (12), Pseudomonas Aeuroginosa (10), serratia (2), Klebsiella (2) and 4 patients had mixed infections (staphylocoque and Haemophilius). Modification of sputum colour is the most parameter correlated with bacterial infection. Duration of COPD more than 10 years, severe dyspnea and impaired respiratory function (FEV1 $< 35\%$) were significantly associated with more aggressive pathogens (negative gram bacilli).
Conclusion: Bacterial infection is major cause of AE of COPD and is considered as a worsening lung function factor. In patients with lower FEV1, AE is caused by more aggressive pathogens.

P2512

Influence of lung infection on the course and outcome in patients with stroke

Dragana Ristic[1], Sinisa Ristic[2], Ivana Marinkovic[3], Ines Veselinovic[4].
[1]*Institutae of Pulmonary Disaeses, Institutae of Pulmonary Disaeses, Nis, Serbia;* [2]*Department of Neurology, University Clinical Centre, Nis, Serbia;* [3]*Medical Faculty of Nis, Medical Faculty of Nis, Nis, Serbia;* [4]*University Clinical Centre, Surgery Clinic, Nis, Serbia*

Purpose: Occurance of acute bacterial lung infectuns affects the course of disease and outcome in stroke patients. Aim of the study was to explore the frequency of hypostatic and aspiration pneumonia, their risk factor and their effect on outcome in patinets with acute stroke.
Metods: In this retrospective study, we evaluated patients with stroke who were hospitalized at the Department of Neurology in Nis, between January- December 2011.There were a total of 1312 patients with stroke. 824(62,80%) had ischaemic stroke, and 488 (37,20%) had haemorrhagic. Patients were evaluated and had the same investigations with anamnestic, clinical, neurological, biochemical analisys, physical examination by a specialist for pulmonary diseases, lung X-ray, Color-Doppler of the neck blood vessels, EEG, CT of lung, CT/MRI of brain, MRA angiography.
Results: Of a total of 1312 patients with stroke, 59 patients (4,49%) of them had pulmonary complications within 10 day from the event. There were 36 male and 23 female patients, age from 41 to 82 years. Pulmonary infections in all of the patients was confirmed by x-ray imaging and biochemical analisys. 28(47,46%) patients had lobar pneumonia, 23(38,98%) had bilateral bronchopneumonic changes and 8(13,56%) had pleural effusion. All of the patients were higly febrile, with increased sedimentation and leucocitosys with dominant neutrophiles. Despite the intensive antibiotic treatment, using two or more antibiotics in combination, 14 patients has died.
Conclusion: Hypostatic and aspiration pneumonia are frequent complications of stroke associated with poor outcome. Regading to this fact, an intensive prevention of complications is necessary immediately after hospitalization.