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P2515

Sensitivity to bordetella pertussis in asthmatic patients

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Background/Aim: Asthmatic patients may complicate with pertussis more frequently than non-asthmatics. It is mentioned decreased immunoreaction to tetanus toxoid or increased sensitivity of *Streptococcus pneumoniae* is shown in asthmatics. The aim of this study is to evaluate the humoral immunosuppression to *Bordetella pertussis* in asthmatics.

Objectives/Methods: 51 patients suspected as pertussis serologically were classified two groups of asthmatics (17 patients) or non-asthmatics (34 patients). Between two groups, titers of anti-pertussis antibody in both initial and recovery points were compared.

Results: In asthmatics, anti-Yamaguchi strain antibody titers in initial and recovery points and ratio of anti-Tohama strain antibody titers in two points were predominantly lower than in non-athmatics.

Table 1. Anti-Yamaguchi strain antibody titers

	Initial		Recovery		Ratio (initial/recovery)	
	range	mean	range	mean	range	mean
Athmatics	10-320	106.5±92.8*	10-320	107.1±96.4**	0.25-8.0	1.32±1.77
Non-athmatics	10-1280	$342.9{\pm}465.7{*}$	10-1280	$421.8 {\pm} 512.8 {**}$	0.25-16	$2.38{\pm}4.36$

*p<0.05, **p<0.01.

Table 2. Anti-Tohama strain antibody titers

	Initial		Recovery		Ratio (initial/recovery)	
	range	mean	range	mean	range	mean
Athmatics	10-1280	318.2±472.2	10-1280	287.1±477.8	0.5-1.0	0.85±0.24*
Non-athmatics	10-1280	221.2 ± 344.5	10-1280	$184.4{\pm}290.4$	0.25-2.0	$1.04{\pm}0.51{*}$
*n<0.05						

Conclusion: We speculate the humoral immunoreaction to *B. pertussis* could be suppressed in asthmatic patients.

P2516

Chronic pulmonary aspergillosis: Characteristics of 30 nonimmunocompromised patients

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Introduction: Chronic pulmonary aspergillosis (CPA) is a severe respiratory infection characterized by pulmonary cavities and increased levels of antibodies to *Aspergillus* specie. We describe 30 nonimmunocompromised patients with CPA. **Materials and methods:** Multidisciplinary working group devoted to epidemiological surveillance of invasive aspergillosis was created in our hospital in January 2000. Among 1545 alerts, 30 cases of CPA in nonimmunocompromised patients were identified. In a retrospective study, we investigated characteristics of patients with CPA.

Results: 30 patients were identified. Their mean age was 69.2 years (interquartile range (IQR) 43.8 – 83.9 years) and 19 (63%) of the patients were men. 19 (63%) of patients had a smoking > 10 pack-years, 23 patients (77%) had COPD, 6 patients in GOLD stage IV and 8 patients in GOLD stage III. All had detectable *Aspergillus* spp precipitins and inflammatory markers. *Aspergillus* spp was isolated in respiratory specimens of 16 (53%) patients. The radiological improvement was essentially: excavations (n=19, 64%); consolidation (n=14, 47%); bronchiectasis (n=12, 40%), nodules (n=9, 30%) and sequelae of tuberculosis (n=5, 17). The average duration of follow up was 31.5 months (IQR 0.2 – 131 months). The average duration of treatment was 7, 6 months (IQR 0.2 – 23 months). The outcome was favorable in 18 (60%) patients and negative in 14 (40%) patients significantly correlated with the degree of bronchial obstruction.

Conclusion: CPA typically occurs in patients with preexisting structural lung disease, and it causes significant respiratory and constitutional symptoms. Prospective studies are required to better characterize the profile of patients.

P2517

An air-fluid level in the cavity is the sign of the exacerbation in chronic pulmonary aspergillosis

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Background: We have experienced a lot of chronic pulmonary aspergillosis (CPA) cases showing exacerbation associated with change of intracavitary air-fluid levels

273. Infection in the immunocompromised host: infrequent aetiologies

P2514

Experimental fatal pneumonia due to Burkholderia cenocepacia: Differential involvement of toll-like receptors (TLRs) 4 and 5 $\,$

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As shown in a previous study (Ventura et al., 2009), MyD88, a key downstream adapter for most of the TLRs, is involved in the inflammatory response responsible to the death due to B. cenocepacia pneumonia.

The aim of the present study was to determine which TLRs were involved in this response. We specifically focused on the TLRs 4 and 5, as these two receptors are the main ones involved in the recognition of P. aeruginosa, a flagellated Gram-negative bacterium like B. cenocepacia.

Mice deficient for TLR4, TLR5 or both were infected intratracheally with a suspension of B. cenocepacia and animal survival was observed daily. Alternatively, bronchoalveolar lavages were collected at different time points to further determine cytokine concentrations and the number of CFU of B. cenocepacia.

We observed that the inflammatory response of the host to B. cenocepacia lung infection was due to TLR4 and not to TLR5. As for the MyD88-/- strain, TLR4-/- mice were protected from death and cytokine and chemokine synthesis in response to infection were reduced. By contrast, we observed a reduced pathogen burden in the case of TLR4-/- mice compared to the enhanced (but transient) pathogen burden observed with MyD88-/- mice, suggesting that another TLR was involved in bacterial clearance.

The data clearly demonstrate a detrimental role of TLR4 for the host upon B. cenocepacia lung infection.

Reference:

[1] Ventura et al., J Immunol. 2009;183:670-6.

during the development process. It seems very possible that appearances and disappearances of air-fluid levels are related to exacerbation of CPA. But it has yet to be determined.

Aims and objectives: To demonstrate relationship between air-fluid levels and acute exacerbation of CPA.

Method: We analyzed retrospectively our patients with acute exacerbation of CPA during the period from 2001 to 2010 at Ibarakihigashi National Hospital.

Results: We experienced 93 cases of acute exacerbation of CPA and the incidence of appearance of air-fluid level was 34% (32 patients). At deterioration, new infiltrative shadows appeared on separate sites from primary cavities in 33 patients (35%), and 27 of them previously had air-fluid levels in their cavities. In 15 patients, fluid volume in their cavities increased before acute exacerbation. Eight of them showed new infiltrations away from primary lesions and fluid volume in their cavities decreased after acute exacerbation. Corticosteroids drastically improved their infiltrations on chest radiograph, blood findings and medical conditions in 5 out of 8. But in 3patients, corticosteroids didn't improve their conditions

Conclusion: The air-fluid levels in cavities were associated with acute exacerbation of CPA. In some cases, patients showed new infiltrations away from cavities with decreased fluids during acute exacerbation. It suggested that fluids in cavities, which contained substances produced by Aspergillus, might damage separate sites from primary cavities.

P2518

Aspergillus-PCR in bronchoalveolar lavage for detection of invasive fungal disease in immunocompromised patients

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Introduction: Invasive fungal disease (IFD) is a frequent and serious infectious complication in neutropenic patients. We evaluated the diagnostic accuracy of conventional nested PCR in the bronchoalveolar fluid to diagnose IFD in severe immunocompromised patients.

Methods: 191 consecutive patients undergoing bronchoscopy for suspected pulmonary infection were included. The probability of IFD was estimated according to the standard EORTC/NIAID classification and on clinical grounds as independently assessed by a pulmonary specialist and hematologist. Conventional nested PCR to detect aspergillus fumigatus, flavus, niger, glaucus, terreus and tomarrii were applied to 2 ml bronchoalveolar fluid.

Results: Mean age was 50.5 y (19-80), 116 were male. There were 129 patients with hematological conditions, 26 solid organ transplant recipients, 24 autoimmune disorders, and 12 HIV. A total of 111 (58.1%) of the patients were on anti-fungal therapy at the time of bronchoscopy. According to the EORTC/NIAID classification, 2 (1%) had proven, 8 (4.2%) probable, 43 (22.5%) possible and 138 (72.3%) no IFD. Nested PCR for Aspergillus was positive in 55 cases (28.8%) -0/2 in proven, 4/8 in probable, 10/43 in possible and 41/138 in no IFD. Anti-fungal therapy did not significantly influenced PCR results (p=0.749). Irrespective of the EORT/NIAID criteria, there was a strong clinical suspicion of IFD in 53 (27.7%) cases. From those, only 15 (28.3%) had a positive nested PCR.

Conclusion: Conventional nested aspergillus PCR in the bronchoalveolar lavage seems to be of limited usefulness for detection of invasive fungal disease in immunocompromised patients.

P2519

Role of bronchoscopy in non-HIV immunocompromised patients

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Background: Non-HIV immuno-compromised patients with suspected chest sepsis commonly undergo bronchoscopy to aid microbiological diagnosis.

Aims: Characterise non-HIV immuno-compromised patients undergoing bronchoscopy at a London hospital. To assess the diagnostic utility of this procedure with a focus on results leading to treatment changes.

Methods: Clinical records of all patients undergoing bronchoscopies over a 14month period were retrospectively reviewed. The diagnostic yield was calculated using the total number of bronchoscopies as the denominator. A positive result was defined as any positive culture (viral, fungal, bacterial) or diagnostic pathology. Using the clinical notes and prescription charts the percentage of treatment changes following bronchoscopy results was calculated.

Results: 43 bronchoscopies were carried out in this group. Underlying diagnoses were haematological malignancy (27), organ transplant (10), solid organ tumour (2), rheumatological (4). The most common indication was suspected infection (76.7%); fungal infection was suspected in 46.5%. The overall diagnostic yield was 51.2% (95% CI, 36.1-66.3%). Many of the positive samples were for virus (10) followed by positive bacterial cultures (8). Few samples were positive for fungus (2). Therapy was changed after 18.6% (95% CI, 6.8-30.4%) of all bronchoscopies. The total complication rate was 4.6% (95% CI, -1.7-11.1%); both cases due to controllable bleeding.

Conclusions: The most common underlying diagnoses were haematological malignancies. Fungal chest infection was frequently suspected, but the fungal organism vield was low; treatment decisions were based on clinical and radiological findings. Total diagnostic yield was similar to published data.

P2520

Virological analysis on bronchoalveolar lavage fluid (BALF): Diagnostic vield and indications

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Introduction: BAL is a major diagnostic tool in infectious lung diseases. Viral respiratory infections are a frequent cause of asthma and COPD exacerbations as well as severe pneumonia.

Aims: To analyze the characteristics of subjects with positive virological analysis of BALF and to define the best indications.

Methods: We retrospectively studied all virological analysis (immunofluorescence, viral culture and PCR) performed on BALF in 2008 at Rennes University Hospital, France. We compared characteristics of patients with positive vs negative virological analysis of BALF.

Results: 232 BAL were performed in 212 patients. Seventy BAL were positive (30%), including 84 viruses: HSV1 (27), CMV (23), EBV (17), HHV6 (12), RSV (3), rhinovirus (1) and adenovirus (1). Immunocompromised patients represent 83% of all positive BAL. Immunosuppression (HIV patients, corticosteroids >10 mg/day for \geq 3 weeks or immunosuppressive therapy) and ground glass attenuations on chest CT-scan were more present in patients with positive virological BALF compared to negative: respectively 82,9% vs 46,9%; p<0,0001 and 65,6% vs 43,7%; p=0,006. There were no significant differences in demographic and clinical criteria (age, gender, fever, dyspnea, cough, hemoptysis). Pneumonia in immunocompromised subjects was the most frequent indication of BALF viral analysis (55%) with a diagnostic yield of 44%. None of the 17 virological analysis of BALF performed for assessment of diffuse infiltrative lung disease was positive. Conclusion: Pneumonia in immunocompromised hosts seems to be the preferential indication of virological analysis of BALF, especially when chest CT-scan demonstrates ground-glass attenuations.

P2521

The role of fibreoptic bronchoscopy (FOB) in the management of pulmonary disease in the immunocompromised (IC) host

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Introduction: FOB is a recognised tool in evaluating IC patients with lung disease. It is often utilised after administration of antimicrobial therapy which potentially affects diagnostic rate.

Aims: Assessment of the role of FOB in IC patients presenting to a UK hospital between December 2007-09.

Method: Retrospective data was reviewed for 48 patients.

Results: 19/48 (39.6%) presented with leucopenia (WCC <3.5×109/l), 18/48 (37.5%) with neutropenia (PMN<1.7×109/1) and 30/48 (62.5%) had lymphopenia (LØ<1.0×109/l). Significant desaturation (requiring unplanned intervention) occurred in 7/48 (14.6%) patients. 30 day mortality was 11%. Positive bacterial cultures were obtained in 10/48 samples (21%). Organisms: Proteus, H.Influenza, Ps.Aeruginosa, Klebsiella, S.Aureus, S.Maltophilia, Coagulase negative staphylococci, enterococcus, E.coli and Group B streptococcus. 17/48 (35%) patients had a change in management directly resultant from BAL bacterial culture. Positive fungal cultures were identified in 16/48 (33.3%) samples. Species: C.Albicans, Saccaromyces, Aspergillus and C.Glabrata. 8/48 (17%) patients had treatment altered based on BAL fungal culture. Positive virology identified in 10/48 patients (rhinovirus, CMV, HSV type 1, EBV, coronavirus). 4/48 (8%) patients had resultant changes in treatment. 7/45 (16%) patients were positive for Pneumocystis jirovecii with treatment change in 5 patients. In 40.5% of cases a treatment change was based on FOB/BAL results.

Conclusion: FOB/BAL has a major impact on the treatment of IC patients with pulmonary disease. Early respiratory involvement prior to broad spectrum antimicrobial therapy may have increased FOB yield.

P2522

In vivo imaging of rat experimental invasive pulmonary aspergillosis using fibred confocal fluorescence microscopy

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Rational: Aspergillus fumigatus is responsible for life-threatening respiratory

infections in immunosuppressed patients. Early diagnostic would improve the prognosis. Fibred confocal fluorescence microscopy (FCFM) is a new endoscopic tool that enables *in vivo* microscopic imaging of the distal lung *in situ*. In this study we tested the hypothesis that FCFM could be utilized for the visualization of pulmonary aspergillosis infection *in vivo*, *in situ*.

Methods: Experimental pulmonary invasive fungal infections were induced in immunosuppressed rats using a wild strain of *A.fumigatus* (n=6) a wild strain of *Geosmithia argilacea* (n=6) and a fluorescent transformed Tag-RFP *A.Fumigatus* strain (n=6). Subpleural areas of pulmonary infection and control lungs were imaged *in vivo* using FCFM through a chest wall window.

Results: From the fungal strains, only hyphae of the Tag-RFP *A.fumigatus* were detectable by FCFM both *in vitro* and *in vivo*. *In vivo*, hyphae of the Tag-RFP *Aspergillus* strain were visualized by FCFM in 100% of the lung infection with a specificity of 100% (6/6) compared to normal lung and other fungal infection. Using non fluorescent strains, a specific local infiltration of fluorescent cells could be localized in half fungal subpleural microabcesses (Se 100%;Spe 58%).

Conclusion: FCFM represents the first imaging technique of pulmonary aspergillosis in real time and *in vivo*. It provides a new tool to study host-pathogen interactions and may help for early diagnosis of pulmonary aspergillosis *in vivo*.

P2523

Clinical characteristics of surgically-diagnosed pulmonary cryptococcosis Akihiro Ito, Hiromasa Tachibana, Tadashi Ishida. Department of Respiratory Medicine, Kurashiki Central Hospital, Kurashiki-City, Okayama, Japan

Background: Pulmonary cryptococcosis is a type of pulmonary mycosis that can be asymptomatic and determined only as an abnormal shadow on X-ray film. Because differentiating pulmonary cryptococcosis nodules from lung cancer is difficult, some patients must be surgically diagnosed. Furthermore, whether surgically-diagnosed pulmonary cryptococcosis should be treated remains controversial.

Objectives: The aim of this study was to evaluate whether we can differentiate pulmonary cryptococcosis from lung cancer, and it should be treated after surgery. **Methods:** We retrospectively analyzed 17 patients with surgically-diagnosed pulmonary cryptococcosis at the 1135-bed Kurashiki Central Hospital (a tertiary facility), Okayama, Japan between June 1994 and November 2009.

Results: The 8 male and 9 female patients (median age, 56 years; range, 36 to 71 years) included 2 with diabetes mellitus and 2 who were treated with steroids. Eleven patients who underwent fiberoptic bronchoscopy before surgery were not diagnosed. Only one of six patients was positive for Cryptococcus antigen. The X-rays revealed nodules or a mass in all patients and none had an infiltration shadow. Thirteen patients had a single nodule. Only one patient was administered with fluconazole, 16 patients were not treated and none of the 17 patients relapsed. **Conclusions:** To differentiate a single nodule of pulmonary cryptococcosis from lung cancer was difficult, rendering surgery as the sole definitive diagnostic option. None of our patients relapsed including four who were immunocompromised, indicating that treatment is not a necessary component of follow-up after surgical diagnosis of pulmonary cryptococcosis.

P2524

Alterations of surfactant phospholipids in lungs with chronic recurrent respiratory chlamydial infection

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This study aimed to identify alterations in the composition of surfactant phospholipids (PLP) with respect to chronic respiratory chlamydial infection.

Broncho-alveolar lavage fluid (BALF) was sampled from 13 calves with naturally acquired chronic, but clinically latent, chlamydial infection (*C. pecorum* and/or *C. abortus*). Calves without chlamydial infections of the same age and kept under identical conditions served as controls (n = 12). Prior to BAL, exhaled breath condensate (EBC) was collected in each animal. In both BALF and EBC, phospholipids were measured (triplequad tandem mass spectrometer). Phosphatidylcholine (PC), being the main phospholipid in pulmonary surfactant and measurable in both EBC and in BALF samples, was significantly reduced in animals with chlamydial infections. In addition, concentrations of lysophosphatidylcholin, phosphatidylethanolamine (PE), and phosphatidylinositol (PI) were significantly reduced in BALF (not measurable in EBC). Altogether, total concentration of phospholipids was significantly lower but ratios between PC/PI and PG/PE (PG: phosphatidylglycerol) were significantly higher in calves with chlamydial infection compared to controls.

In conclusion, chronic respiratory infections with chlamydiae were associated with significant alterations in the phospholipid composition of the epithelial lining fluid of the lung. Since surfactant is involved in both lung compliance as well as alveolar clearance, results of this study indicate chlamydia-associated deterioration of pulmonary mechanics and depressed alveolar defense mechanisms despite the absence of clinical signs or pulmonary symptoms.

P2525

Pulmonary and systemic inflammation in a domestic animal model of respiratory *chlamydophila psittaci* infection: Evaluation of dose-response relationships

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This study aimed to evaluate dose-response relationships of pulmonary and systemic inflammation with respect to a new model of respiratory *Chlamydophila* (*C.*) *psittaci* infection introduced recently. Four infection dosages (inclusion forming units of strain DC 15) were administered intrabronchially per calf: 10^6 (n = 4), 10^7 (n = 4), 10^8 (n = 4), 10^9 (n = 2). Control animals received medium (n = 4) or the inactivated strain (10^8 ; n = 6). Pulmonary inflammation was assessed by analysing broncho-alveolar lavage fluid (BALF) 2-3 days post inoculation (dpi). As biomarkers of systemic inflammation, acute phase proteins (LBP=lipopolysaccharide binding protein, Hp= haptoglobin, CRP) were measured in serum samples.

Marker of pulmonary and systemic inflammation (Means)

	C	Controls	Challenge with viable C. psittaci [ifu/calf]			
	Medium	Cp inactivated	10exp6	10exp7	10exp8	10exp9
BALF (2–3 dpi)						
Cell Count [G/L]	0.4	0.4	0.5	0.6	0.9	1.2
Granulocytes [%]	7	17	24	34	45	42
Macrophages [%]	90	80	72	62	52	45
Protein [µg/mL]	117	157	179	179	292	1019
Blood (2-3 dpi)						
LBP [µg/mL]	33	98	44	69	154	222
Hp [µg/mL]	66	175	637	843	311	62
CRP [µg/mL]	36	57	43	54	38	48

After challenge with viable chlamydiae, most of inflammatory markers followed dose-response curves (Table). In the lung, recruitment of neutrophil granulocytes increased with increasing doses. In blood, LBP was superior in reflecting host response.

Conclusion: In conclusion, pulmonary and systemic inflammation varied from mild (10^6 ifu) to severe (10^9 ifu) . For further studies, inoculation of 10^8 ifu per animal is recommended to induce a clinically apparent respiratory disease with local and systemic host responses.

P2526

Radiological features and their associations with clinical and laboratory findings in adults with *mycoplasma pneumoniae* pneumonia

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Background and objective: The factors determining severity in *Mycoplasma pneumoniae* (*M. pneumoniae*) infection are only partly understood. To describe radiological features for *M. pneumoniae* pneumonia and to determine their associations with clinical and laboratory findings.

Methods: A sixty-month retrospective study of 372 adult patients with *M. pneu-moniae* pneumonia was carried out. The diagnosis of *M. pneumoniae* was made by the indirect microparticle agglutinin assay. We collected the radiological findings and assessed their associations.

Results: Ground-glass opacity was observed in 344 patients (92.5%), unilobar opacity in 316 patients (84.9%), and lower lobe involvement in 288 patients (77.4%). There was a significant increased odds ratio for multilobar opacities in male patients (OR, 3.279; p<0.001). The patients with multilobar opacities fast older age (p<0.001), higher CURB-65 scores (p=0.014) and sequential organ failure assessment scores (p=0.014), and more costs (\$768.22±411.26 vs. 623.47±270.69, p=0.001) than those with unilobar opacity. As compared with the patients with ground-glass opacity, those with consolidation had longer hospital length of stay (14.1±4.4 vs. 9.5±3.6 days, p<0.001) and more costs (\$823.44±243.93 vs. 630.76±299.72, p<0.001).

Conclusions: Ground-glass opacity, unilobar opacity, or lower lobe involvement was the major radiological finding in patients with *M. pneumoniae* pneumonia. Multilobar opacities were associated with male, older age, higher severity, and more costs, whereas consolidation with longer hospital length of stay and more costs.

P2527

Prevalence of zoonotic chlamydiae in dairy cattle and contact persons Simone Kühlewind¹, Konrad Sachse^{2,3}, Petra Reinhold³, Evelyn Schubert^{2,3}, Juliane Kronsbein¹, Melanie Ulbrich¹, Birgit Schärling¹, Dirk Theegarten⁴, Nadine Matzner⁴, Jürgen Behr¹, Gerhard Schultze-Werninghaus¹, Gernot Rohde^{1,5}. ¹Department for Respiratory Medicine, Allergology and Sleeping Medicine, University Hospital Bergmannsheil, Medical Clinic III, Bochum, Germany; ²National Reference Laboratory (NRL) for Psittacosis, Friedrich-Loeffler-Institut (FLI), Jena, Germany; ³Institute of Molecular Pathogenesis, Friedrich-Loeffler-Institut (FLI), Jena, Germany; ⁴Institute of Pathology and Neuropathology, Molecular Pathology, University Hospital of Duisburg-Essen, Essen, Germany; ⁵Department of Respiratory Medicine, Maastricht University Medical Centre, Maastricht, Netherlands

Chlamydial infections are a known problem in cattle farming. We want to find out whether they are related to chronic respiratory illness in farmers

We selected 48 dairy farms with a history or suspicion of chlamydial infections. Nasal and vaginal swabs, milk and fecal samples and paired sera were obtained from 5 cows of each farm. The presence of chlamydiae was analysed by rtPCR, by the ArrayTube DNA microarray test and paired sera were examined using an ELISA. The farmers were clinically examined by lung function testing, serology, allergy skin test, and their induced sputum was rtPCR tested.

The analysis of 48 farms showed that in 31 (64.6%) farms at least 1 sample from at least 1 cow was positive in rtPCR and 12 (25%) farms were positive only by ELISA. Chlamydophila (C.) psittaci and C. pecorum were the most frequently identified species. At one farm, Chlamydia trachomatis was identified in cattle. So, far 39 individuals have been examined, 12 had respiratory symptoms and 33 were positive in serology. C. pneumoniae IgA occurred in 15 (38.5%) subjects and IgG in 26 (66.7%). Only 2 persons were positive for C. psittaci IgG. In 5 (12.8%) human sputum samples Chlamydia trachomatis was identified.

We found a prevalence of 64.6% (rtPCR), which is a wide dissemination of chlamydial infections in cattle herds. In humans, we found signs of an immune reaction against zoonotic C. psittaci in 2 subjects, which had regular contact to birds. The cattle of these farms were tested negative.

The presence of Chlamydia trachomatis in 5 sputum samples is remarkable and interesting and needs further investigation, as well as the detection of Chlamydia trachomatis of 4 cows. The farmers of this farm have not yet been examined.

P2528

Serum KL-6 elevation related with severity in patients with Pneumocystis pneumonia

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Background: Pneumocystis pneumonia is attracted attention as one of opportunistic infection in immunosuppressive patients. A part of them progress severe respiratory failure and is difficult to treat. It is particular in non-HIV patients.

Methods: Patients who were hospitalized because of the Pneumocystis pneumonia were enrolled in the study between 2005 and 2010 at Shinshu University Hospital. The patients' condition, laboratory data, the respiratory management, and oxygenation were analyzed. Bronchoalveolar lavage (BAL) was performed on admission if possible.

Results: Fifteen patients were hospitalized (mean age 62.3±14.4, male 11/female 4). Eight patients were treated with mechanical ventilation and 5 patients died in hospital. In comparison between survivor and non-survivor, serumβ-D glucan, a marker of pneumocystis infection, had no significant difference. However, serum KL-6 concentrations, a marker of type II cell injury and/or proliferation, in survivors were higher than that in non-survivors (survivor 1106.1±943.7 vs non-survivor 3286.5±1523.9, p=0.0174). Furthermore, the KL-6 concentration was related with PaO2/FIO2 of patients significantly.

Conclusion: We suggested that serum KL-6 elevation showed patients severity in pneumocystis pneumonia.

P2529

Prevalence and pattern of pulmonary infections among HIV/AIDS adults patients admitted to a tertiary care hospital, Dubai, United Arab Emirates, 2009-2010

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Background: The prevalence of HIV in UAE in estimated to be < 0.2% among adults and there is no data on pulmonary complications of HIV/AIDS. The study was aimed to evaluate the prevalence and pattern of pulmonary infections among HIV/AIDS infected patients over 2 years period.

Methods: Data was collected longitudinally as patients were admitted to IDU and included demographics, CD4, viral load, chest X-Ray, sputum microscopy/culture, AFB staining/culture and first line DST. CT chest and FOB were used in few selected cases.

Results: Between January 2009 and January 2011, 97 adult patients with HIV/AIDS were admitted to our unit. 45 patients had abnormal chest X-ray and non specific respiratory symptoms (46.39%), mostly presenting with cough (93%). We identified 19/45 (42.2%) patients with active pulmonary TB, 14/45 (31.1%) patients with CAP and 4/45 (8.8%) patients with PJP. No confirmed diagnosis was made in 8/45 (17.7%) patients, out of whom 6 patients died within 48-72 hours of admission. No patient was receiving ART or prophylaxis at the time of pulmonary infection. 29/45 patients had CD4 <200/µL (70.73%, range 3-193), and 13 patients had CD4 > $200/\mu L$ (31.7%, range 248-579). 14/18 (77.7%) patients with pulmonary tuberculosis had CD $< 200 / \mu L$ with chest X –ray changes consistent with primary infection. The rate of sputum slide/culture positivity was 78.5% and 92.8% respectively.

Conclusions: Pulmonary TB was most frequently diagnosed illness followed by CAP. In patients with AIDS and TB, chest x ray shows a pattern of primary infection and sputum positivity was comparable to HIV infected and immunocompetent subjects.

P2530

Severe pulmonary infections due to biological therapy of rheumatic diseases

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The use of biological therapy in patients suffering from rheumatoid arthritis and ankylosing spondylitis is getting more general. Basically with biologic therapy the action of a messenger of inflammation e.g. tumor necrosis factor (TNF) can be blocked - called anti-TNF therapy. The risk of this kind of impediment is becoming susceptible to infections or latent disease may turn into active and then may easier spread. The main danger is tuberculosis still other non-specific infections or malignant tumors may occur.

A retrospective study was made to analyze the data of patients treated with biological therapy and hospitalized in our institute because of severe pulmonary infections. The aim of this study was to detect the incidence and severity of these complications in a real life population.

Between 2008 and 2010 of 28705 patients with pulmonary disease were treated in our institute, 59 patients of them suffered rheumatic disease: 52 patients from rheumatoid arthritis and 7 of ankylosing spondylitis. 27 of 59 patients received some sort of non-biological therapy, 23 of 59 got no medication and we screened 3 patients before the biological therapy. Six of the 9 patients who received biological therapy had complications: 5 cases of tuberculosis, 1 case of pulmonary abscess, 1 case of invasive aspergillosis. We did not observed malignant tumor among them. In this particular period 1 patient treated by biological therapy died because of tuberculosis

Our analysis assured the relevance of correct preliminary pulmonary examinations and follow-up during biologic therapy of rheumatic disease. Despite the possible occurrence of severe complications this therapy has got major efficiency in treating rheumatic diseases.

P2531

Clinical manifestations and a prognostic factor of pneumocystis pneumonia without HIV infection

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Introduction: Pneumocystis pneumonia (PCP) could occur not only in HIV patients but in those with other causes of immunodeficiency.

Purpose and methods: To evaluate clinical presentation and prognostic factors of non-HIV PCP, we retrospectively reviewed all the patients with PCP without HIV. Patients' characteristics, underlying diseases, clinical course, performance status (PS) (ECOG), disease activities and the time from respiratory symptoms onset until the therapies were initiated in both survival and fatality groups were evaluated.

Results: A total of 33 patients were eligible in this study. Thirty-two patients (97%) had malignancies or rheumatic disease receiving chemotherapy or longterm steroids and/or immunosuppressive agents. Twenty-two patients out of 33 survived. Both the time between the initial visit or first examination and establishing a diagnosis (4.8 vs 10.8 days, p< 0.01) and the time between the initial visit and starting anti-PCP therapy (3.1 vs 12.8 days, p<0.01) are statistically much shorter in survival group than in fatality group. Twelve of the 14 (85.7%) patients who empirically received therapy before confirming diagnosis survived. Twenty-one of the 22 patients with inactive underlying disease survived. In contrast, 10 of the 11 patients with the active underlying disease died. In terms of PS, 24 patients (72.7%) had good PS (0-2). Eight (72.7%) of the 11 non-survivors had PS of 3-4. As for Lab, CRP, LDH and KL-6 values were higher and Alb/BUN was lower in the fatality group compared with the survival group.

Conclusion: We suggest that the timing when the anti-PCP therapy is started, patients' and PS and disease activity might correlate with outcomes.

P2532

Acute LRT infections among patients with shingles

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Herpes Zoster is reactivation of VZV infection, triggered by stress, surgical intervention or lack of the immunocompetency. This intraganglionar latent viral RNA reactivation precede the viral migration trough the neural axons up to the associated dermatome cosing ballonic cell degeneration, multinuclear cell expression with intranuclear inclusions, sumultaneous inflammatory local reaction, finally expressed with characteristic shingles vesicles.

Material and methods: In a six year long period (2004-2010), 52 patients with shingles were hospitalized, 19 (36%) were immunocompromised due to immuno-suppressive therapy, lymph reticular malignant illness, HIV infection; 23 (44.4%) patients with shingles had LRT inflammation sings.

Results: Based on the clinical symptoms and standard blood, biochemical, radiological, bacteriological, serological testing's parallel bacterial LRT inflammation was proven among 20 of 23patients (86.9%), or 38.46% of 53 patients. This group of 20 with LRT bacterial inflammation includes 9 immunocompromised (45%) and 11 immunocompetent (55%) patients. Severe pulmonary inflammation had 6 (66.6%) of 9 immunocompromised (one of them nosocomial, transferred from the haematology clinic) and 5 (45.4%) of 11 immunocompetent, or 6 (30%) of 20 and 5 of 20 (25%).

Conclusions: The severity of the dermal expression as well as LRT inflammation was evident among immunocompromised patients. Their hospital treatment was prolonged, from 17days up to 7 weeks (average 23 days) compared to immuno-competent patients with shingles and LRT inflammation (11-27 days-average 14 days). Antimicrobial (antibiotic/antiviral) therapy bas empirically installed from the very beginning of hospital treatment, additionally improved where needed.

P2533

Clinical and evolutive patterns of respiratory infections in patients with HIV/AIDS from Timis County, Romania

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Background: Acute respiratory diseases are part of opportunistic infections developed by patients with HIV/AIDS due to immunosuppression. The present study aims evaluating the clinical and evolutive patterns of acute respiratory infections in patients with HIV/AIDS.

Methods: The authors have retrospectively analyzed 82 patients with HIV/AIDS and acute respiratory diseases admitted at Clinic of Infectious Diseases. The positive diagnosis was based on clinical elements, biological parameters (erythrocyte sedimentation rate, leukocyte count, fibrinogen, C-reactive protein, sputum culture etc) and paraclinic elements (chest radiography, spirometry).

Results: From the study group, 52 patients with acute respiratory diseases (p=0.04) have been registered: 10 cases (12.19%) had bacterial pneumonia, 8 (9.75%) had interstitial pneumonia, 4 (4.87%) had fungal pneumonia, 8 (9.75%) had acute bronchitis, 11 (13.41%) had influenza, 7 (8.53%) had acute anginas and 4 (4.87%) had pulmonary tuberculosis. The etiological agent has been isolated in 21 cases: 7 with *Streptococcus pneumoniae*, 4 with *Staphilococcus aureus*, 2 with *Klebsiella pneumoniae*, 4 with *Pneumocystis jirovecii* and 4 with *Mycobacterium tuberculosis*. In 54 cases, CD4-cell count was less than 200 cells/mm³ and 28 cases (p=0.01) over 200 cells/mm³. Under specific therapy and antiviral treatment, the clinical outcome has been favourable in 50 cases, only 2 cases died with pulmonary tuberculosis.

Conclusion: The detailed study of the clinical and evolutive patterns of respiratory infections in patients with HIV/AIDS allows timely implementation of specific therapy and prophylaxis in this populational group with multiple risks.