448. Anti-infective treatment and resistance in respiratory infections

P4363

Therapeutic efficacy of macrolides, minocycline and tosufloxacin against macrolide-resistant *Mycoplasma pneumoniae* pneumonia in pediatric patients

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Background and objective: Since 2000 the prevalence of macrolide-resistant (MR) *Mycoplasma pneumoniae* in pediatric patients has increased in Japan. The purpose of our study was to investigate differences in the clinical course, bacteriological effect and therapeutic efficacy against MR *M. pneumoniae* among macrolides, minocycline and tosufloxacin.
Methods: We performed a multicenter prospective epidemiological study of MR *M. pneumoniae* for the first time. A total of 152 children with *M. pneumoniae* pneumonia confirmed by polymerase chain reaction (PCR) were analyzed. A search for mutations at sites 2063, 2064, and 2617 in the *M. pneumoniae* 23S rRNA domain V gene region was performed.
Results: One hundred nine patients of 152 children with *M. pneumoniae* pneumonia were determined to have a MR gene. Fever disappeared within 48 hours after antibiotics administration in the MR patients was seen in 25% of the macrolides group, 83% in the minocycline group, and 81% in the tosufloxacin group. The DNA copy numbers in the MR patients showed little decrease after macrolide administration, but rapid decrease after administration of minocycline or tosufloxacin.
Conclusions: The number of *M. pneumoniae* in the MR patients decreased promptly after 48 hours' minocyclne and tosufloxacin treatment and had a close relationship with clinical outcome. In contrast, we found that the clinical and bacteriological efficacy of macrolides for treating cases of MR patients was low. Our results might be indicate that minocycline and tosufloxacin considered as the first choice drugs for treatment of *M. pneumoniae* pneumonia in Japanese situation.

P4364

Clarithromycin inhibits pandemic A/H1N1/2009 influenza virus infection in human airway epithelial cells

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Rationale: We reported previously that clarithromycin (CAM), a macrolide antibiotic, inhibits seasonal type A influenza virus (H3N2) infection in human airways. However, the effects of CAM on infection by the pandemic A/H1N1/2009 influenza virus (A/H1 2009 pdm) have not been studied.
Methods: Human tracheal epithelial cells (n=3) were pretreated with CAM (10 μM) and then infected with the A/H1 2009 pdm in 24-well plates.
Results: The viral titer and the amount of interleukin (IL)-6, a pro-inflammatory cytokine, in the supernatant increased with time after A/H1 2009 pdm infection. CAM reduced the viral titer (6.7±0.4 log $TCID_{50}$ units/ml/24 h for virus alone *vs.* 4.9±0.2 log $TCID_{50}$ units/ml/24 h for virus plus CAM; $p<0.05$, mean ± SE) and IL-6 (211±8 pg/ml/24 h for virus alone *vs.* 149±7 pg/ml/24 h for virus plus CAM; $p<0.05$) 3 days after infection. CAM also reduced the number of epithelial cells detached from culture vessels 7 days after infection (32±2 x 10^3/well in virus alone *vs.* 12±2 x 10^3/well in virus plus CAM; $p<0.05$). In addition, we compared the viral titer and the numbers of detached cells after infection between the A/H1 2009 pdm and the A/H3N2 virus. The viral titer and the number of the detached cells after infection with the A/H1 2009 pdm were higher than those after infection with the A/H3N2 virus (4.1±0.4 log $TCID_{50}$ units/ml/24 h and 5±1 x 10^3/well for the A/H3N2 virus; $p<0.05$).
Conclusion: Clarithromycin may inhibit A/H1 2009 pdm infection and may modulate airway inflammation and epithelial damage during the infection. The A/H1 2009 pdm may release higher levels of virus and may be more cytotoxic than seasonal influenza virus (H3N2).

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Community-acquired pneumonia in five European countries: Usage patterns and real-life effectiveness of antibiotics (REACH study)

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Background: Comprehensive, current data on the burden of hospitalized community-acquired pneumonia (CAP) in Europe are scarce.
Aims: To describe the hospitalized CAP population in Europe and to review current clinical practice and its impact.
Methods: REACH (NCT01293435) was a retrospective (2010–2011), observational study in ten EU countries. Patients were ≥ 18 years old, hospitalized with

Figure 1. Patient characteristics

	Overall population (N = 2,039)	IT (N = 300)	NL (N = 203)	ES (N = 279)	TR (N = 200)	UK (N = 114)
Gender, male, n (%)	1,196 (58.7)	177 (59.0)	121 (59.6)	167 (59.9)	119 (59.5)	63 (55.3)
Mean age, years (SD; median)	64.5 (18.5; 68)	62.2 (19.8; 64)	65.6 (17.0; 68)	67.0 (18.5; 73)	65.6 (16.1; 69)	63.0 (19.4; 69)
Characteristics of pneumonia, n (%)						
CAP only*	1,607 (78.8)	234 (78.0)	148 (72.9)	219 (78.5)	164 (82.0)	87 (76.3)
Healthcare-associated pneumonia†	245 (12.0)	25 (8.3)	31 (15.3)	40 (14.3)	16 (8.0)	23 (20.2)
Immunosuppressed/ immunocompromised	72 (3.5)	17 (5.7)	10 (4.9)	12 (4.3)	1 (0.5)	2 (1.8)

* Residence prior to admission in private house or apartment only; † Responses considered healthcare-associated pneumonia were all other residential statuses with the exception of immunosuppression/immunocompromised

Figure 2. Rates of initial-line treatment modification by initial-line antibiotic regimen for the full population and for each country.

Overall population (N = 2039)		IT (N = 300)		NL (N = 203)		ES (N = 279)		TR (N = 200)		UK (N = 114)	
Regimen	Abx switch,* n/N (%)	Regimen	Abx switch,* n/N (%)	Regimen	Abx switch,* n/N (%)	Regimen	Abx switch,* n/N (%)	Regimen	Abx switch,* n/N (%)	Regimen	Abx switch,* n/N (%)
All regimens	757/2039 (37.1)	All regimens	110/300 (36.7)	All regimens	105/203 (51.7)	All regimens	118/279 (42.3)	All regimens	66/200 (33.0)	All regimens	57/114 (50.0)
Amoxicillin-clavulanate	135/409 (33.0)	Cephalosporin (except cefuroxime) + macrolide	21/61 (34.4)	Amoxicillin-clavulanate	20/60 (33.3)	Cephalosporin (except cefuroxime) + quinolone	14/72 (47.2)	Penicillins (or penicillin combinations) + macrolide	16/43 (37.2)	Penicillins (or penicillin combinations) + macrolide	29/59 (49.2)
Penicillins (or penicillin combinations) + macrolide	112/288 (38.9)	Levofloxacin	8/33 (24.1)	Penicillins (or penicillin combinations) + quinolone	12/25 (48.0)	Levofloxacin	18/56 (32.1)	Moxifloxacin	11/41 (26.8)	Amoxicillin-clavulanate	12/13 (92.4)
Cephalosporin (except cefuroxime) + macrolide	76/211 (36.0)	Penicillins (or penicillin combinations) + quinolone	9/36 (25.0)	Amoxicillin	5/19 (26.3)	Cephalosporin (except cefuroxime) + macrolide	12/17 (29.5)	Cephalosporin (except cefuroxime) + macrolide	4/19 (21.1)	Penicillins (or penicillin combinations) + quinolone	2/5 (40.0)
Levofloxacin	37/156 (23.7)	Ceftriaxone	16/28 (33.3)	Cefuroxime	10/18 (55.6)	Amoxicillin-clavulanate	16/38 (42.1)	Levofloxacin	6/18 (33.3)	Piperacillin-tazobactam	1/4 (25.0)
Cephalosporin (except cefuroxime) + quinolone	55/140 (39.3)	Penicillins (or penicillin combinations) + macrolide	19/28 (35.7)	Cefuroxime + macrolide	7/12 (58.3)	Ceftriaxone	19/16 (62.5)	Ceftriaxone	4/12 (33.3)	Amoxicillin-clavulanate + doxycycline	2/4 (50.0)
Moxifloxacin	26/116 (27.4)	Cephalosporin (except cefuroxime) + quinolone	8/26 (30.8)	Penicillins (or penicillin combinations) + macrolide	8/9 (88.9)	Penicillins (or penicillin combinations) + macrolide	4/8 (50.0)	Ampicillin-sulbactam	5/12 (66.3)	Cephalosporin (except cefuroxime) + macrolide	2/3 (66.7)
Penicillins (or penicillin combinations) + quinolone	46/115 (40.0)	Amoxicillin-clavulanate	12/25 (48.0)	Ceftriaxone	6/8 (75.0)	Penicillins (or penicillin combinations) + quinolone	4/8 (50.0)	Piperacillin-tazobactam	5/9 (55.6)	Clarithromycin	2/2 (100)

The seven most commonly used antibiotic regimens are listed
* Defined as the need for modification of initial antibiotic treatment
Abx = antibiotic

CAP and requiring IV antibiotics. Data were collected via an electronic Case Report Form. We present data from five countries selected as representative of the full sample: Italy (IT), the Netherlands (NL), Spain (ES), Turkey (TR) and the UK.
Results: Patient characteristics were similar in the five countries. Rates of initial treatment modification (due to treatment failure or other reasons) were 33.0% (TR), 36.7% (IT), 42.3% (ES), 50.0% (UK) and 51.7% (NL) (overall population: 37.1%).
Conclusions: Antibiotic use differed somewhat between countries. Modification of initial treatment was common with many frequently used therapies, with variability among countries, suggesting that initial treatment choices may not always be optimal.

P4366
Caspofungin to treat invasive pulmonary aspergillosis in sarcoidosis
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Rationale: Invasive pulmonary aspergillosis is a potentially life-threatening complication of sarcoidosis, with destructive fibrotic lung disease and immunosuppressive therapy contributing to its development. Optimal therapy is not known. We report a successful treatment protocol using cyclical intravenous caspofungin infusions.
Methods: Consecutive patients with sarcoidosis and invasive pulmonary aspergillosis treated with caspofungin were identified from our pharmacy prescribing database. Clinical and radiological data were collected retrospectively prior to caspofungin treatment, and during follow-up.
Results: Nine patients (5 men), with a mean age of 44.1±11.3 years, and a median duration of sarcoidosis of 10 years (range 2-12), were treated with caspofungin. All patients had fibrotic pulmonary sarcoidosis (stage IV) on chest radiograph. Eight patients also received prednisolone. Six patients received prior oral antifungal therapy (voriconazole or itraconazole), and were converted to caspofungin due to lack of efficacy or side-effects.
Median follow-up was 12.5 months (4-32) after the commencement of caspofungin. In eight patients, symptoms and inflammatory markers improved rapidly after the first dose of caspofungin, with a decrease in median CRP from 31 (3-94) to 15 (3-23) (p=0.02) within 3 months. In the 6 patients for whom a minimum of 6 months follow-up was available, chest radiographs improved in 4 (67%), and median BMI improved from 23.2 (17.0-31.0) to 25.2 (21.5-36.0) (p=0.4).
Conclusion: Invasive pulmonary aspergillosis associated with sarcoidosis may be refractory to conventional triazole antifungal therapy, and caspofungin appears to be a safe and effective therapeutic alternative in these patients.

P4367
Macrolides *vs* quinolones in Legionella pneumonia treatment: CAPAVANT group. Valencia (Spain)
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Background: There is not data enough to assure Quinolones are more effective than Macrolides in Legionella pneumonia treatment (CAP-L). We analyzed differences at CAP-L evolution related to the antibiotic employed.
Method: 12 months prospective, multicenter and longitudinal study in 10 hospitals of a Spanish area, enrolling consecutive CAP patients. Differences in illness severity scores (PSI and CURB65), clinical-radiological findings, length of hospital stay (LOS), outcomes, and mortality were analyzed in a subgroup of CAP-L patients, divided in two groups: Group A CAP-L treated with Macrolides and Group B treated with Quinolones. Statistics: Independent-samples T test and X^2 test.
Results: From 1314 cases of CAP, 11,2% were CAP-L, 70,1% men, mean age 62,23±16 years old. 37,2% were included in Group A and 54,7% in Group B. 89,9% of cases were admitted in hospital for treatment, with LOS of 8,9±6,7 days, and no differences between the two groups (A 8,33±4,2 days *vs* B 9,15±6,8, p=0.52). No differences were observed in clinical or radiological data, neither in blood gas analysis nor illness severity by PSI or CURB65 scores at admittance between the two groups. Evolution time until treatment administration was 4,63±2,8 days (A 4,85±3,17 *vs* B 4,52±2,73 days; p=0.74). Clinical evolution was similar in two groups with ICU admittance in 6,1% (A 5,5% *vs* B 7,4%, p=0.58), mechanical ventilation in 4,1% (A 3,6% *vs* B 4,9%, p=0.7), respiratory failure in 10,1% (A 10,9% *vs* B 8,6%, p=0.67), and death in 3,4% (A 5,5% *vs* B 1,2%; p= 0.25).
Conclusion: In our experience, evolution of CAP-L patients is similar, if they are both treated with Macrolides or with Quinolones, with a low global mortality rate.

P4368
Macrolide-resistant *Mycoplasma pneumoniae* in adolescents with community-acquired pneumonia
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Background and objective: Although the prevalence of macrolide-resistant (MR) *Mycoplasma pneumoniae* isolates in Japanese pediatric patients has increased rapidly, there have been no reports concerning MR *M. pneumoniae* infection in adolescents aged 16 to 19-years old. The purpose of this study was to clarify the prevalence and clinical characteristics of MR *M. pneumoniae* in adolescent patients with community-acquired pneumonia.
Methods: A total of 61 cases with *M. pneumoniae* pneumonia confirmed by polymerase chain reaction (PCR) and culture were analyzed. Thirty-two cases were pediatric patients less than 16 years old, 14 cases were 16 to 19-year-old adolescent patients and 15 cases were adult patients. Primers for domain V of 23S rRNA were used and DNA sequences of PCR products were compared with the sequence of an *M. pneumoniae* reference strain.
Results: Twenty-two of 32 pediatric patients less than 16-years old, eight of 14 adolescent patients aged 16 to 19-years old and five of 15 adult patients with *M. pneumoniae* pneumonia were found to be infected with MR *M. pneumoniae*. Among 22 pediatric MR patients, 18 had an A-to-G transition at position 2063 (A2063G) and four had an A-to-G transition at position 2064 (A2064G). Among eight adolescent MR patients, six showed an A2063G transition and two showed an A2064G transition.
Conclusions: The prevalence of MR *M. pneumoniae* is high among adolescent patients as well as pediatric patients less than 16-years old. To prevent outbreaks of *M. pneumoniae* infection, especially MR *M. pneumoniae*, in closed populations including among families, in schools and in university students, physicians should pay attention to MR *M. pneumoniae*.

P4369
Comparative study of community-acquired pneumonia between diabetic and nondiabetic patients with hyperglycemia
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Aim: To study the differences in clinical presentation and evolution of community acquired pneumonia (CAP) between patients with known-diabetes and non-diabetic but with hyperglycemia status (HG) at hospital admission.
Methods: We performed a prospective, observational study of patients admitted to Pneumology department consecutively with a diagnosis of CAP. The plasma glucose levels were measured on admission and patients were divided into two groups: diabetic patients and non-diabetic with HG. We consider HG when plasma glucose level =>200mg/dl. We studied different variables, included severe clinical course (mortality and/or septic shock and/or invasive mechanical ventilation (IMV) during hospital stay.
Results: We studied 1389 patients, 274 were known diabetic and 53 (3,8%) were non-diabetic with HG.

Table 1

	Diabetic N=274 (19,7%)	Non-DM with hiperGlc N=53 (3,8%)	p
Means			
Age (years)	69,5	71,6	ns
Respiratory frequency (bpm)	21,7	24	0,007
Clinical stability (days)	4,3	6,8	0,001
Hospital stay (days)	6,7	12,1	0,003
Percentages			
Respiratory comorbidities	33,3	52,5	0,02
Dyspnoea	58,8	77,4	0,011
Altered mental status	16,8	7,5	0,08
Typical auscultation	59,4	25	0,001
Pleural effusion	2,2	13,2	0,001
ICU admission	8,8	18,9	0,027
IMV	4	11,3	0,04
FINE score ≥4	84,7	83	Ns
Mortality	6,2	9,4	Ns
Severe clinical course	9,9	20,8	0,023

Conclusions: 1. Non-diabetic patients with HG had a more severe clinical course comparing to known-diabetic, althoug mortality was similar. 2. Non-diabetic patients with HG had more respiratory comorbidities, reached clinical stability later, had a higher admission to ICU and needed more IMV, with a longer hospital stay. 3. 4% of patients admitted with a CAP had a not-known HG.

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WITHDRAWN

P4371

Factors associated with compliance with palivizumab treatment in the Canadian rSV evaluation study for synagis (CARESS) registry (32005-2011)

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Objective: Determine factors affecting compliance in palivizumab use.
Methods: Registry of infants who received >1 dose of palivizumab during 6 RSV seasons. Demographic data collected at enrolment. Data on palivizumab utilization, compliance, and outcomes (respiratory illness - RI) collected monthly. Complianc interval between doses, and percentage of expected injections received.
Results: 10,452 infants enrolled, 7492 (71.7%) complied with timing of doses. 91.9%±27.1% of expected injections received. Greater proportion of non-compliant infants were hospitalized for RI (7.5% versus 6.0%, p=0.005), compliance did not affect RSV-positive hospitalizations (1.79% versus 1.53%, p=0.177). Compliant infants (all [<0.05): were younger at enrolment (5.4±5.9 versus 5.9±]6.1 months), had siblings (61.3% versus 58.5%), were a multiple (29.7% versus 27.2%), and had >5 household individuals (23.9% versus 21.7). More non-compliant infants had smoke exposure (30.5% versus 28.4%, p=0.033). Six factors influenced compliance in regression analysis: age (HR=0.989, 95%CI 0.982-0.996, p=0.002), siblings (HR=1.104, 95%CI 1.007-1.211, p=0.034), >5 household individuals (HR=1.114, 95%CI 1.001-1.241, p=0.047), smoke exposure (HR=0.891, 95%CI 0.811-0.980, p=0.018) and CHD (HR=0.805, 95%CI 0.700-0.927, p=0.002), and RI-related hospitalization (HR=0.837, 95%CI 0.705-0.903, p=0.041).
Conclusions: Siblings and >5 household individuals is associated with increased treatment compliance; being older, smoke exposure, having CHD and being hospitalized with decreased compliance.

P4372

Therapeutic outcomes for cavitary *Mycobacterium avium* complex (MAC) lung disease

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Beginning in 1992, patients were enrolled in a series of prospective clinical trials investigating the safety and efficacy of 3 or 4 drug macrolide-containing regimens for treating cavitary MAC lung disease. Based on these studies subsequent MAC lung disease patients received similar regimens. All patients were diagnosed according to contemporary nontuberculous mycobacterial (NTM) diagnostic guidelines. Patients are included in this analayis only if they had a macrolide susceptible MAC isolate prior to initiation of therapy and subsequently tolerated a 3 to 4 drug regimen consisting of macrolide, ethambutol, and a rifamyicn (rifampin or rifabutin) ± injectable agent (streptomycin or amikacin) administered daily or three times weekly. There were 240 patients in the intent to treat analysis with a mean age 63.2±12.4 years (range 35-90 years) who were 76% male, 80% white and 75% current or exsmokers (≥ 10 pack years smoking). 134 patients had adequate records available for treatment outcome evaluation. 86/134 (64%) had sputum AFB culture conversion while on therapy. Over the study period, the all cause mortality was 57% for the intent to treat cohort and 41% for patients with sputum AFB culture conversion on therapy. We conclude that cavitary MAC lung disease can be effectively treated with macrolide-based regimens but is associated with high all cause mortality regardless of MAC treatment response.
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P4373

Poor prediction of potentially drug-resistant pathogens using current criteria of health care-associated pneumonia

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Background: Health care-associated pneumonia (HCAP) includes a broad range of patients having frequent or chronic contact with health care systems. However, the relationship between current defining criteria for HCAP and the risk of potentially drug-resistant (PDR) pathogens is controversial.
Methods: We retrospectively evaluated patients admitted to Severance Hospital in South Korea with culture-positive pneumonia from January 2008 to December 2009. We analyzed the associations between risk factors for HCAP and infection with PDR pathogens.
Results: Among 339 patients, PDR pathogens were observed in 122 (36.0%) and non-PDR pathogens in 217 (64.0%). PDR pathogens were more common in HCAP than community-acquired pneumonia (CAP) (48.5% vs 23.8%, P < 0.001), but 51.5% of HCAP showed non-PDR pathogens. In a logistic regression, prior hospitalization within 90 days of pneumonia (OR = 2.52, P = 0.003), recent treatment with antimicrobials (OR = 2.35, P = 0.039), and nasogastric tube feeding (OR = 13.94, P < 0.001) were independently associated with PDR pathogens.
Conclusions: The current criteria for HCAP are poor predictors of PDR pathogens and all patients with HCAP should not be empirically treated for these pathogens. To avoid excessive antibiotic use, individual risk stratification approaches should be considered.

P4374

Invasive pulmonary aspergillosis: What is the role of surgery in the voriconazole era?

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Invasive pulmonary aspergillosis (IPA) is one of the most severe infections in immunocompromised patients. In the 90's, surgery was considered a potentially curative treatment. Since voriconazole has become the first line treatment, the role of surgery has not been evaluated.
Thirty immunocompromised patients who underwent surgery for a suspected IPA between 1990 and 2010 were retrospectively reviewed and separated into two groups: the group A (n=20) who received amphotericin B or itraconazole before the surgery, and the group B (n=10) treated by voriconazole.
The diagnosis of IPA before surgery was certain or probable for 60% of the patients. The main indications for surgery were: the resection of a persistent pulmonary lesion prior to subsequent immunosuppressive treatments (50%), incomplete control of the infection (43%), and risk of haemoptysis (10%). The median duration of antifungal treatment before surgery was 1.3 months in the group A, and 2.5 months in the group B (p=0.2). Persisting aspergillosis was confirmed for 85% among the patients from the group A, and only 20% of the group B (p<0.001). Anatomopathogical study provided an alternative diagnosis for 4 patients, all in the group B: 2 mucormycosis, 1 mycobacterial infection, 1 specific lesion of the leukemia. Perioperative mortality was low (3%).
Surgery is a therapeutic option for IPA with low mortality in a well trained surgical team. In the voriconazole era, the proportion of resected pulmonary lesions containing *Aspergillus* appears to be decreasing, whereas other fungal infections are detected. The role of surgery has to be defined in patients previously treated with voriconazole, particularly for remaining pulmonary lesions.

P4375

Rates of ophthalmic complications due to ethambutol in patients with non-tuberculous mycobacteria

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Infection with Non-Tuberculous Mycobacteria (NTM) is a growing clinical problem particularly in patients with inflammatory lung disease. For many NTM infections, treatment involves at least 12 months of combination antibiotic therapy including Ethambutol. While ophthalmic complications are extremely rare in patients taking ethambutol as part of standard quadruple therapy for Mycobacterium tuberculosis (MTB) infection, they may be higher during treatment for extended periods. We therefore carried out a retrospective analysis of patients treated with ethambutol for NTM infection at the Cambridge Centre for Lung Infection between 2006 and 2011. We identified 46 patients with confirmed NTM infection who received ethambutol. 4 individuals were excluded from further analysis because of incomplete/missing notes.
We identified 5 out of 43 patients (11.9%) with documented changes in visual acuity and colour vision diagnosed by an ophthalmologist as probable ethambutol toxicity. There was no significant difference between those with ophthalmic com-

plications and those without in the following parameters: age; dose of ethambutol per kilogram, serum creatinine levels and treatment duration. Where measured, low serum zinc levels were found in individuals who developed ophthalmic complications but these were not significantly lower than those of unaffected patients.
Our data suggests that ethambutol toxicity is a relative common problem in patients with NTM infection requiring extended treatment with ethambutol despite appropriate dosing and regular ophthalmology review. Further studies will be needed to define how best to minimize this potentially devastating complication.

P4376
Evaluation of moxifloxacin (MXF) as empiric antibiotic therapy of CAP outpatients: A multicenter prospective study
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Objectives: To compare clinical characteristics and outcomes of CAP outpatients receiving MXF with standard therapies (levofloxacin [LVF] or amoxicillin-clavulanic acid *plus* azithromycin [AMC/AZT]).
Methods: A retrospective analysis was conducted on300patients prospectively recorded in 4 Spanish and 2 German hospitals (174 LVF, 75 MXF and 51 AMC/AZT). Demographic, clinical characteristics and outcomes (mortality, hospitalizations)were recorded. Since demographic and clinical data did not differ between LVX and AMC/AZT patients we analysed them together.
Results:

	MXF (n=75)	LVX+AMC/AZT (n=225)	p
Age, mean±SD	53±17	46±17	0.003
Males, %	45	54	0.200
Pneumococcal vaccine, %	20	6	0.001
Influenza vaccine, %	40	23	0.002
Cardiac failure, %	7	2	0.032
Diabetes mellitus, %	15	8	0.111
Respiratory disease, %	36	24	0.043
Previous antibiotic (2 months), %	23	25	0.495
PSI classes I-III, %	90	97	0.086
PSI class IV, %	10	3	
CURB-65 classes 0-1, %	94	95	0.083
CURB-65 class 2, %	7	6	
Respiratory rate, mean±SD	18±5	22±5	0.059
CPR (mg/dl), mean±SD	9.7±11.3	14.4±10.1	0.004
Leukocytes, mean±SD	10067±4930	12509±7691	0.046
SaO2%, mean±SD	96±2	95±8	0.331
Pleural effusion, %	1.3	7.2	0.057
Multilobar infiltrate, %	0	10	0.005

No microbiological differences were observed (*S. pneumoniae* in 20% [MXF], 18% [LVF+AMC/AZT]). There were no fatality cases. Five hospitalizations were described (MXF, 3; LVF, 2)and 3 of them were related to pneumonia: 1 treatment failure due to resistant *S. mitis*(MXF) and 2 for residual cough and pleural effusion(LVF).
Conclusions: MXF was prescribed in older patients with more comorbidities but less respiratory complications. MXF showed similar efficacy to standard antibiotics, and therefore, is a valuable option for outpatient treatment of CAP.

P4377
Antibacterial therapy of community-acquired pneumonia (CAP) at patients with cardiovascular diseases (CVD)
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To estimate antimicrobial therapy (AT) CAP at patients (PT) with CVD comparative study of 731 case histories of CVD patients (main age 62,0±12,0 years, 329 (45,0%) male) and 478 of patients (main age 32,2±13,4 yeas, 276 (57,7%) male) without concomitant diseases (WCD) hospitalized due to CAP during 2004-2006 was performed. Length of hospitalization was similar in both groups: CVD – 14,0±5,1 days and WCD – 13,8±4,7 days (p>0,1). 314 (42,9%) PT with CVD had risk of death by PORT score > 2,8%, but only 14 (2,9%) PT WCD had such risk (p<0,001). Most of WCD PT got ceftriaxon±macrolide (62,3% WCD and 51,4% CVD, p<0,001) or co-amoxicillin±macrolide (21,8% WCD and 16,7% CVD, p<0,001). Fluorqinolones were prescribed 23,8% CVD and 19,0% WCD (p < 0,001). Mostly it was ciprofloxacin, but it had low activity against S.pneumoniae. Gatifloxacin gave 5,0% WCD and 2,5% CVD, p<0,001. Duration of the initial AT was similar in both group: 9,5±2,9 days in WCD and 9,2±2,9 days in CVD (p>0,1). AT was ineffective at 156 (32,6%) WCD and at 211 (28,9%) CVD. Alternative AT was administered. Most of PT got monotherapy – 75,6% WCD and 82,9% CVD. Ciprofloxacin were prescribed 28,8% WCD and 25,1% CVD, gatifloxacin - 9,3% WCD and 4,6% CVD. 19,4% PT CVD got amicacin, but it did not have activity again main CAP pathogens. Cure came at 339 (65,8%) WCD and 399 (54,6%) CVD (p < 0,0001). CVD PT more frequent were discharged for home treatment (284 (38,9%) vs 130 (27,1%) WCD, p<0,001). Mortality was 3,1% in CVD group only. Therapy CAP of PT with CVD is characterized more frequent prescription of antibiotics they are not choice for this PT. It results in long recovery after CAP and increases mortality PT with CVD.

P4378
Adjunctive systemic corticosteroid treatment in hospitalized patients with community-acquired pneumonia
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Rationale: Although steroids potentially modulate the activation of the immune system in patients with pneumonia, the clinical benefit of adjunctive corticosteroid therapy in patients with community-acquired pneumonia (CAP) remains controversial.
Objective: The present study evaluated the effects of adjunctive corticosteroid therapy on hospitalized patients with CAP.
Methods: We retrospectively studied 98 patients with CAP having definitive etiologies who visited the Toranomon Hospital between April 2006 and April 2010.
Results: The patients included 49 men and 49 women with a mean age of 64 years (range: 19-100). Underlying diseases included diabetes mellitus (n=23), malignancy (n=21) and chronic obstructive pulmonary diseases (n=7). The Pneumonia Severity Index (PSI) was I in 20 patients, II in 25, III in 21, IV in 30, and V in 2. Causative pathogens were *Streptococcus pneumoniae* (n=33), *Haemophilus influenzae* (n=25), *Mycoplasma pneumoniae* (n=22), and others (n=17). Of the 98 patients, 67 were treated with standard antimicrobial therapy and 31 were treated antibiotics and systemic steroids (prednisolone 15-60 mg/day). Clinical characteristics were similar between the steroid and nonsteroid groups, except that PSI was higher in the steroid group. In the steroid group, the number of patients with a clinical cure at days 7 and the median length of hospital stay were 11 (35%) and 15.1 days, respectively, while those in the nonsteroid group were 36 (55%) and 14.5 days, respectively (p = 0.08, and p = 0.43, respectively).
Conclusion: Adjuncive corticosteroid therapy along with antibiotics does not improve the outcome of CAP in hospitalized patients.

P4379
The spectrum of bacterial resistance in the lower respiratory tract infections in Oradea Pneumology Hospital in 2011
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Aim: Estimation of pathogen resistance (Enterobacteriaceae: Klebsiella, E. coli, Proteus, Enterobacter, Pseudomonas) isolated from different pathological products to antibiotics currently used in clinical practice: ampicillin, ampicillin + sulbactam, amoxicillin + clavulanic acid, cefotaxime, ceftazidime, ceftriaxone.
Material and method: Sensitivity and resistance of these pathogens to antibiotics was determined by performing diffusion antibiogram from bacterial cultures isolated from pathological products collected from patients diagnosed with lower respiratory infections and admitted to the Pneumology Hospital Oradea in 2011. In carrying out our study were used 4358 bacterial cultures isolated from pathological products: sputum, bronchial lavage, bronchial aspirate.
Results and conclusions: From 4358 bacterial cultures, 128 were represented by Klebsiella, 68 of E. coli, 131 of Pseudomonas, 40 of Enterobacter, 98 of S. aureus, 8 of Proteus. At Meropenem, Pseudomonas spp became resistant, Klebsiella and Proteus sensitivity did not change, while Staphylococcus sensitivity decreased although it remained responsive to this antibiotic. E. coli has retained sensitivity to the action of Ampicillin +Sulbactam.In contrast to the others germs, that we found a tendency to the development resistance to Ampicillin + Sulbactam, only E. coli and Klebsiella species have intermediate sensitivity to Ampicillin + Sulbactam. At Klebsiella and Enterobacter we found tendency to installation of resistance to this antibiotic. We noticed a tendency to definitive Ampicillin resistance at the following pathogens: E. coli, Klebsiella ssp, Enterobacter spp, Proteus ssp.

P4380

Pulmonary nocardiosis in a teaching hospital in the Central Anatolia of Turkey: Clinical experience in 26 patients

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Pulmonary nocardiosis (PN) is an uncommon but severe infection caused by Nocardia spp., which can behave either as opportunistic or primary pathogens. The diagnosis of PN can easily be missed. The purpose of this retrospective study is to review the predisposing factors, clinical symptoms, microbiologic, radiographic characteristics, diagnostic procedures, treatment and outcome of the patients with PN confirmed positive culture, diagnosed in a teaching hospital over the last 11 years. Twenty- six (20 men and 6 women) adult patients with a mean age at time of 49 years (range:21 to72 years) were identified with PN. Half of the patients had disseminated nocardiosis (8 with dissemination to central nervous system, 5 with soft tissue and cutaneous abscess). The predisposing conditions were treatment of steroids (88%), chronic lung diseases (31%), transplantation (19%) and malignancy (19%). Mean time to diagnosis was 31 days. In 21 patients (80%), the infection occurred outside the hospital setting. Respiratory tract sampling using noninvasive techniques had a diagnostic yield of 81%, while specimens from invasive methods had a yield of 37%. The radiological changes were diverse and non-specific. Nocardia asteroides type VI (N.cyriacigeorgica) and N.farcinica were the commonest species.Treatment was started empirically, modified according to the antimicrobial susceptibility pattern, and then continued for 6–12 months. Overall mortality was 58%, with death being caused by the Nocardia infection in 7 patients (27%).PN is a rare infection and mainly affects immunocompromised patients. Higher index of suspicion is needed for earlier diagnosis and treatment to improve prognosis.