270. Aetiology, diagnosis and outcomes in community-acquired pneumonia

P2457

Late-breaking abstract: The differences in clinical presentations between severe health care-associated pneumonia and severe community-acquired pneumonia: A single center experience

Goohyeon Hong, Sang-Won Um, Won-Jung Koh, Gee-Young Suh, Man-Pyo Chung, Ho-Joong Kim, O-Jung Kwon, Kyeong-Man Jeon. *Medicine, Division of Pulmonary and Critical Care Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea*

Health care associated pneumonia (HCAP) has been proposed as a new category of respiratory infection. HCAP shows higher mortality rates than CAP. But it is not clear whether the poor outcome of HCAP is related to the presence of more comorbidities or to a higher incidence of MDR pathogen and inappropriate empirical antibiotic treatment. Thus, we aim to establish whether differences in outcomes for HCAP are due to differences in severity of pneumonia, not due to MDR pathogen. We conducted a retrospective observational study of patients with severe HCAP and severe CAP who were hospitalized through the emergency department in Jan 2008 Dec 2009 at Samsung Medical Center, Seoul, Korea, and compared clinical characteristics, severity, distribution of pathogen, and outcomes. In total, 757 patients hospitalized with pneumonia were eligible, 382 patients were severe pneumonia. sHCAP was significantly more common than sCAP. There were no differences between two groups in distribution of pathogens. sHCAP showed higher occurrence of potentially MDR pathogens than sCAP, but there were no differences between two groups in the inappropriate initial antimicrobial treatment. In early case-fatality rate, there were no differences between two groups but in-hospital mortality showed higher mortality rate in sHCAP. In a multiple logistic regression analysis, however, in-hospital mortality was independently associated with ICU admission. Differences in outcomes for HCAP are due to differences in severity of pneumonia, defined as ICU admission, not due to MDR pathogens.

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Viral aetiology and clinical characteristics of community-acquired pneumonia in adults in Guangzhou, China

Yang-Qing Zhan[1], Rong-Chang Chen[1], Zi-Feng Yang[1,2]. *[1]Respiratory Medicine, The First Affiliated Hospital of Guangzhou Medical College, State Key Laboratory of Respiratory Disease (Guangzhou Medical University, China), Guangzhou, Guangdong, China; [2]Faculty of Chinese Medicine, Macau University of Science and Technology, Macau SAR, China*

Background: Recently epidemiological surveillances show that viral pneumonia is more commonly reported than previously estimated. However, to date, little information is available in China.
Objective: To estimate incidence of adult viral Community-acquired pneumonia (CAP).
Methods: Consecutive adult patients with a diagnosis of CAP during April and December of 2009 were prospectively enrolled. Paired sera were routinely performed by hemagglutination inhibition assay or indirect immunofluorescence. Swab samples were tested for respiratory viruses by using virus culture and RT-PCR. Viral aetiology was considered definitive if at least one of the above tests was positive.
Results: Overall 149 CAP patients were enrolled, with 84 males. The median (interquatile range, IQR) ages were 60 (35∼77) years. Paired sera were available in 70 cases. Viral aetiology was established in 48 cases (32.2%). Forty-four patients were infected by a single virus (influenza A 24 cases, influenza B 5 cases, parainfluenza virus type 3 (PIV-3) 11 cases, PIV-1 and adenovirus 2 cases each) and four cases by two viruses. Fever≥39° (66.7%), fatigue (64.6%), purulent sputum (52.1%), sore throat (45.8%), dysnea (41.7%) and coryza (41.7%) were the most common symptoms in viral pneumonia patients. Some influenza A or PIV-3 infected patients manifested hemoptysis and chest pain. Dyspnea and gastrointestinal symptoms were also common in influenza and PIV-3 infected patients. Oxygen therapy was more common in viral pneumonia patients than others (54.2% vs 31.7%, P=0.008).
Conclusion: Respiratory viruses were common pathogens in CAP in Guangzhou.

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Pneumonia in patients who received health care at home – Should they be categorized as CAP or HCAP?

Toru Rikimaru, Noriko Hukushima, Reiko Toda. *Department of Respiratory Disease, Fukuoka Sanno Hospital, Fukuoka City, Fukuoka Prefecture, Japan*

Introduction: Healthcare-associated pneumonia (HCAP) is a condition in patients (pts) who are not hospitalized but features are similar to hospital-acquired pneumonia. There are many people who receive HC at home instead of at a nursing home (NH). It is not clear whether thay should be treated as community-acquired pneumonia (CAP) or HCAP.
Aims and objectives: This study sought to declare the features in pts who received

HC at home, and to classify them as CAP or HCAP by comparing them with CAP and NH-acquired pneumonia (NHAP) which occupy an important position in HCAP.
Methods: We evaluated and separated 1000 pts into three groups, Group A 517 pts; complete CAP (A), Group B 333 pts; NHAP (B), and Group C 160 pts; who received HC at home (C).
Results: The features of C were similar to B in age, and between A and B in sex, total protein and independency. There were no differences between the three groups in body temperature, WBC and CRP. In bacteriological features, *S. pneumoniae, H. influenzae and K. pneumoniae* were 9.5%, 5.8% and 3.9% in A, 7.2%, 2.2% and 10.9% in B and 3.6%, 5.5% and 9.1% in C, respectively. Other features of B and C were similar and had many drug-resistant pathogens e.g. MRSA (A: 5.3%, B: 21.0%, C: 16.4%) and *P. aeruginosa* (A: 2.5%, B: 13.4%, C: 10.9%). Mortality rates of A, B and C were 6.0%, 18.6% and 10.0%, respectively. In restricted analysis within total care pts of C, the clinical features were more similar to B, with a mortality of 18.4%.
Conclusions: The clinical features of C were similar to NHAP in many categories. We concluded that pneumonia in pts who have received HC at home should be classified as HCAP, especially in poor independency pts.

P2460
Role of viruses, alone and in association with bacteria, in adults hospitalized with community-acquired pneumonia (CAP)
Elisa Mincholé[1], Sergio Fandos[1], Ana Lasierra[2], Ana Lilian Simon[1], Maria Angeles Ruiz[3], Cruz Villuendas[2], Elena Forcén[1], Salvador Bello[1]. *[1]Pulmonology Department, Hospital Universitario Miguel Servet, Zaragoza, Spain; [2]Clinical Biochemistry Department, Hospital Universitario Miguel Servet, Zaragoza, Spain; [3]Microbiology Department, Hospital Universitario Miguel Servet, Zaragoza, Spain*

We performed a prospective, observational study of etiology of community acquired pneumonia (CAP) admitted in our hospital, including bacteria, viruses and mixed bacteria/virus cases. From 228 patients, we carried out a complete microbiological searching, including sputa, urinary antigens, hemocultures, paired serologies, as well as viral immunofluorescence, and two PCR for respiratory viruses from nasopharyngeal washes.
At least one etiological agent was identified in 155 patients (67.98%). Fifty seven (36.7%) were typical bacterial CAP, 57 viral (or atypical bacterial) (36.7%) and 41 (26.4%) mixed (virus and bacterial). (Table 1)

Table 1. - Etiology of CAP patients

TYPICAL BACTERIAL		VIRAL / ATYPICAL BACTERIAL		MIXED (Bacteria + virus)	
S. pneumoniae	27	Adenovirus	14	S. pneumoniae + Rhinovirus	6
L. pneumophila	4	Rhinovirus	7	S. pneumoniae + Adenovirus	4
E. coli	2	Coronavirus	6	S. pneumoniae + RSV**	2
S. marcescens	2	Influenza A	7	S. pneumoniae + Metapneumovirus	2
MRSA*	2	RSV A	4	S. pneumoniae + Influenza A	2
A. dentrificans	1	Influenza B	2	S. pneumoniae + Influenza B	1
A. xylosoxidans	1	RSV A + Coronavirus	2	S. pneumoniae + S. aureus + Adenovirus	1
C. striatum	1	Metapneumovirus	1	S. pneumoniae + Rhinovirus + Influenza A	1
E. doacae	1	M. pneumoniae	1	S. pneumoniae + Rhinovirus + Influenza B	1
H. influenzae	1	RSV B	1	S. pneumoniae + Influenza A + Parainfluenza 4	1
E. faecalis	1	Influenza A + Parainfluenza 1	1	S. pneumoniae + Influenza B + Coronavirus	1
M. catarrhalis	1	Adenovirus + Influenza A	1	S. pneumoniae + Adenovirus + Coronavirus	1
P. aeruginosa	1	Adenovirus + Rhinovirus	1	S. pneumoniae + H. influenzae + Adenovirus + Rhinovirus	1
S. aureus	1	Adenovirus + Coronavirus	1	Corynebacterium + Metapneumovirus	1
S. hominis	1	Coronavirus + Influenza A	1	S. hominis + Adenovirus	1
S. pneumoniae + S. aureus	2	Enterovirus + Rhinovirus	1	S. hominis + S. epidermidis + Adenovirus	1
S. pneumoniae + H. influenzae	1	Influenza A + Rhinovirus	1	E. coli + RSV A + Influenza A	1
P. aeruginosa + C. striatun	1	Influenza A + RSV A	1	H. influenzae + Adenovirus + Rhinovirus	1
P. aeruginosa + K. Oxytoca	1	Influenza B + Rhinovirus	1	H. influenzae + Adenovirus + Influenza A	1
P. aeruginosa + L. pneumophila	1	Metapneumovirus + RSV	1	H. influenzae + Rhinovirus + RSV A + Influenza A	1
S. aureus + P. multocida	1	Rhinovirus + Influenza B	1	P. aeruginosa + Influenza A	2
S. aureus + E. faecium + S. pneumoniae	1	Metapneumovirus + RSV + Influenza A	1	S. epidermidis + Metapneumovirus	1
H. influenzae + S. marcescens	1			E. Coli + M. pneumoniae	1
E. coli + C. striatum + A. Baumannii	1			M. catarrhalis + Coronavirus	1
				M. morganii + Coronavirus	1
				E. faecalis + Parainfluenza 1	1
				H. parainfluenzae + Parainfluenza 3	1
				S. maltophila + Adenovirus	1
				P. aeruginosa + RSV A + Coronavirus	1
TOTAL	57	TOTAL	57	TOTAL	41

	155	
KNOWN	85	(67.98%)
UNKNOWN	73	(32.02%)
TOTAL	228	

*MRSA: methicillin resistant S. aureus
**RSV: respiratory sinsitial virus

Conclusions:
- Viruses are very common agents in hospitalized adults with CAP, being present in more than half of the cases of well-known etiology, and in one out of three patients they were found as unique pathogen.
- If we search, we can also identify mixed bacterial-viral CAP as a common cause of CAP. Adenovirus and Rhinovirus were the most prevalent viral agents in mixed pneumonias.
- Streptococcus pneumoniae, alone or in association with virus, was the most prevalent agent, and one out of two pneumococcal CAP was associated with at least one virus. Viruses can have an important role in pathogenesis of pneumococcal CAP.
- Searching virus should be considered in the study of hospitalized CAP.

P2461
The diagnostic yield of the pneumococcal urinary antigen test in clinical practice and its impact on antibiotic therapy
Wendy Laijen, Dominic Snijders, Wim Boersma. *Department of Pulmonary Medicine, Medical Centre Alkmaar, Alkmaar, Netherlands*

Background: The pneumococcal urinary antigen test (PUAT) is commonly used for the aetiological diagnose of community-acquired pneumonia (CAP) and can be useful for pathogen-directed therapy. The aim of this study was to evaluate the diagnostic yield of the PUAT and the impact on antibiotic therapy in patients with CAP and a positive PUAT result.
Methods: A retrospective study of adults hospitalised with CAP between 2005 and 2007 was performed. All patients were tested by PUAT. Sensitivity of the PUAT was determined and whether antibiotic treatment was adapted to the PUAt results.
Results: 681 patients with CAP were included. Causative micro-organisms were isolated by using conventional methods in 243 (35.7%) patients. The pathogen most frequently identified was *S. pneumoniae* in 91 (13.4%) patients, with an increase of diagnostic yield by the PUAT to a total of 178 (26.1%) patients. The PUAT increased the total number of aetiological diagnosis from 35.7% to 48.5%. The PUAT was positive in 37 of 55 patients with definitive pneumococcal pneumonia (67.3%). PUAT was positive in 56 of 95 pneumococcal cases (definite and probable) giving an overall test sensitivity of 59.0%. The test specificity was 93.2%. A positive PUAT led to narrowing antibiotic treatment in 63 (41.2%) patients.
Conclusion: The PUAT is a useful technique for early detection of *S. pneumoniae* in patients with CAP, but the test is less sensitive in this clinical setting than prospective studies indicate. The PUAT results led the physician to narrow the antibiotic treatment, but insufficient adherence to treatment guidelines of CAP when a PUAT is positive limits its impact.

P2462
Incidence and risk factors of MRSA pneumonia
Katia Verhamme[1], Francis Maton[2], Kristien Van Vaerenbergh[1,3], Paul Jordens[4]. *[1]Department of Infection Control and Epidemiology, OLVZ Aalst, Aalst, Belgium; [2]MKG, OLVZ Aalst, Aalst, Belgium; [3]Department of Microbiology, OLVZ Aalst, Aalst, Belgium; [4]Department of Respiratory Diseases, OLVZ Aalst, Aalst, Belgium*

Introduction: Data on the incidence of MRSA pneumonia in Europe are scarce.
Objective: To study the incidence of MRSA pneumonia and its related mortality.
Methods: Data from the OLV hospital, a 939-bed, university-affiliated teaching hospital in Belgium, were used. The study period ran from 2006 to 2009. All respiratory tract samples, positive for MRSA, were retrospectively collected from the automated microbiology database. As multiple samples per patient were available during follow-up, only the first MRSA respiratory tract sample was considered. Of all patients with MRSA positive respiratory tract samples, the complete medical records, including chest X-ray or chest CT scans were reviewed by a pulmonologist. Patients were defined to have pneumonia according to the ECDC criteria. Risk factors such as comorbidity and previous use of antibiotics were studied.
Results: During follow-up, 197 patients with a MRSA positive respiratory tract sample were identified. 46 of these 197 patients developed an MRSA pneumonia of which 30 had a nosocomial pneumonia. The overall incidence of MRSA pneumonia was 0.49/10000 patient days. 25 of the 46 MRSA pneumonia were detected at ICU. In patients with MRSA pneumonia, the mortality was high, 24 of the 46 patients (52%) died during follow-up versus 32% in patients with MRSA colonization of the respiratory tract was 32%. The mean time from admission to MRSA pneumonia was 13.6 days. 50% of patients with MRSA pneumonia were previously (during current hospital admission) treated with an antibiotic vs 32.5% in MRSA colonized patients.
Conclusion: The incidence of MRSA pneumonia is low but mortality in these patients is high. Previous use of antibiotics is one of the main risk factors of an MRSA pneumonia.

P2463
Comparison of community acquired pneumonias which require admission to intensive care unit depending on etiology: Legionella vs pneumococcus
Maria Alfonso[1], Marta Inchausti[1], Beatriz Gómez[1], Nuria Marina[1], Luis Alberto Ruiz[1], Ainhoa Gómez[1], Sandra Pedrero[1], Iratxe Seijas[2], Rafael Zalacain[1]. *[1]Pneumology, Cruces Hospital, Barakaldo, Spain; [2]Intensive Care Unit, Cruces Hospital, Barakaldo, Spain*

Objective: To describe the differences between pneumococcal bacteriemic pneumonias (PBP) and Legionella pneumonias (LP) which needed admission to Intensive Care Unit (ICU)
Methods: A cross sectional study was performed from 1/1/2000 to 1/10/2010. We analized patients with diagnosis of PBP and LP. All patients were admitted in the ICU of our Hospital. We analized clinical, analytical and prognosis differences

depending on etiologic agents: Pneumococcus (positive blood culture) and Legionella (positive urine antigen). Immunodeficent patients and health care patients were excluded.
Results: We included 115 patients: 63 (55%) PBP and 52 (45%) LP.

	Pneumococcus (63 pts) % patients	Legionella (52 pts) % patients	p
Smoking habit	66,7	84,6	0,027
Pleuritic pain	55,6	15,4	0,000
IMV	42,9	59,6	ns
FINE 4-5	66,7	57,7	ns
Curb ≥3	52,4	28,8	0,011
Previous antibiotic treatment	6,3	26,9	0,003
Mortality	22,2	23,1	ns
	Mean	Mean	
Age (years)	55,8	53,5	ns
Systolic blood presure	109	123	0,007
BUN	40,7	31,2	0,02
Sodium	134,8	131,3	0,003
PaO2/FiO2	222	257	0,02
RCP	38,8	41	ns
Days until oral treatment given	8,3	15,7	0,000

Conclusions: 1. Both groups had a similar age. Patients with LP were more smokers and suffered less pleural pain. 2. Patients with LP had more hiponatremia and received previous antibiotic treatment on higher rates. 3. At admission NBP had greater severity indexes with more favourable evolution. 4. Mortality was similar in both groups.

P2464
Evaluation of the *Legionella V*-TesT compared to the BinaxNOW to detect *Legionella* serogroup 1 antigen in urine samples
Evy De Witte[1], Katherine Loens[1], Christine Lammens[1], Jordy Almirall[2], Herman Goossens[1], Greet Ieven[1]. *[1]Vaccine and Infectious Disease Institute, University of Antwerp, Antwerp, Belgium; [2]Intensive Care Unit, Hospital of Mataro, Fundacio Privada Salut del Consorci Sanitari del Maresme, Mataro, Spain*

The performance and user friendliness of a new immunochromatographic assay, the *Legionella V*-tesT (Coris Bioconcept) for the detection of *Legionella pneumophila* serogroup 1 antigen in urine (uAg) were evaluated by comparing its results with the BinaxNOW *Legionella* uAg-test results (Inverness Medical).
For direct uAg testing using both tests, 129 previously collected and frozen urine samples were used: 61 specimens from pneumonia patients during a *Legionella* outbreak: 34 from the *Hospital* of *Mataró* (Spain), 27 from the outbreak in Kapellen (Belgium, 1999) and 68 urine samples from patients with lower respiratory tract infections other than *Legionella* infections enrolled in the European GRACE study. In case of discrepant results, urine samples were tested with the Biotest. Results of culture and/or PCR on respiratory samples were included to conclude on the true positive status of the patient. The number of manipulations and the turn around time (TAT) were evaluated as well.
41/129 (32%) samples tested were BinaxNOWpositive. The sensitivity and specificity of the *V*-TesT in comparison to the BinaxNOW were 97.6% and 97.7% respectively.

Results for the evaluation of the V-tesT in comparison to the BinaxNOW *Legionella*

	BinaxNow *Legionella*		Total
	–	+	
Legionella V-tesT			
–	86	1	87
+	2	40	42
Total	88	41	129

Results yielded 2 apparent false positives and 1 false negative: all were confirmed as true positive *Legionella* infections. The TAT was comparable but the new *V*-TesT could be used directly on the urine specimen, while the BinaxNOW required two additional steps.
The *V*-TesT has comparable performance characteristics to the BinaxNOW *Legionella* and is an even more user-friendly test.

P2465
Community-acquired pneumonia due to S. aureus
Sinem Ozsari, Pinar Sarac, Mehmet Sezai Tasbakan, Abdullah Sayiner.
Department of Chest Diseases, Ege University School of Medicine, Izmir, Turkey

Introduction and aim: Methicillin resistant *S. aureus* (MRSA) is an important cause of hospital-acquired pneumonia. There is little data regarding its association with community-acquired pneumonia (CAP). This study aimed to evaluate the risk factors and clinical course of CAP caused by MRSA and methicillin-susceptible *S.aureus* (MSSA).
Material and method: Forty-eight pneumonia cases that were followed up in a tertiary care center between September 2008 - September 2010 and in whom MRSA or MSSA was isolated from initial respiratory specimens were analyzed.
Findings: MRSA was isolated in 19 and MSSA in 29 of 48 cases (38 male, mean age 61.5±17.9). Risk factors for health-care-associated pneumonia (HCAP) (33 vs 16%, p<0.0001), history of hospitalization (29 vs 22%, p=0.016), surgical intervention (12 vs 4%, p=0.033) and admission to intensive care unit (14 vs 4%, p=0.014) in the preceding three months were more common in cases with MRSA pneumonia. Length of stay in the intensive care unit (11.5±4.1 vs 2.7±0.8 days, p=0.048) and in the hospital (23.1±4.1 vs 13.9±1.6 days, p=0.049) were longer in cases with MRSA pneumonia. There was no significant difference in mortality between the two groups (31.6 vs 37.9%).
Three MRSA pneumonia cases without risk factors for healthcare-associated pneumonia were diagnosed as community-acquired MRSA (CA-MRSA) pneumonia. The latter cases were found to be older, this difference not reaching statistical significance (76.3±7.2, p=0.093). There was no difference in the other clinical and biochemical parameters.
Conclusion: HCAP and CAP caused by *S. aureus* is associated with significant mortality and morbidity. There are too few cases to better define CA-MRSA pneumonia.

P2466
A worldwide perspective of nursing home pneumonia beside community acquired pneumonia
Adamantia Liapikou[1], Eva Polverino[2], Catia Cilloniz[2], Paula Peyrani[3], Julio Ramirez[3], Rosario Menendez[4], Antoni Torres[2]. *[1]Respiratory and Critical Care Unit, Evangelismos Hospital, Athens, Greece; [2]Respiratory Disease Department, Hospital Clinic, Barcelona, Spain; [3]Infectious Disease Department, University of Louisville, Louisville, United States*

Background: Nursing home acquired pneumonia (NHAP) is the leading cause of death among long-term care patients and the second most common cause of transfers to hospital. The objective of the study was to characterize the incidence, microbial etiology and clinical outcomes of NHAP requiring hospitalization in comparison with Community Acquired Pneumonia (CAP) patients.
Methods: A secondary analysis of 5176 patients from the Community Acquired Pneumonia Organization database (CAPO) was performed. World regions were defined as North America (I), Latin America (II), Europe (III), and Asia and Africa (IV).
Results: 287 patients (6%) were identified as NHAP (mean age 80 yrs). The incidence of NHAP was 31, 39, 28, and 1% in the regions I, II, III, IV, respectively. Thirty two patients (11%) required ICU admission. Etiology was defined in 1403 (27%) of CAP cases instead of 68 (24%) pts with NHAP. The most common isolated pathogens included Streptococcus pneumoniae (34%), Staphylococcus spp (7%) and Haemophilus influenzae (8.5%). Gram(-) pathogens and Staphylococcus spp.(29%) were more common in patients with NHAP, particularly in North America. The NHAP presented more frequently with pleural effusions (28% vs. 19%) and multilobar involvement (31% vs. 24%) than CAP patients. Time to clinical stability was 5.9 days in NHAP and 4.7 days in CAP patients (p<0.01). The 1-month mortality rate was statistically higher in NHAP patients than CAP patients (41% vs. 18%; p < 0.01), such as for CAP-related mortality rate (17% vs. 5%; p<0.01).
Conclusions: NHAP patients over the world and can be considered a different clinical entity in terms of presentation, microbiology, clinical course and mortality.

P2467
Influence of streptococcus pneumoniae serotypes in clinical outcomes of pneumonias
Yolanda Galea[1], Beatriz Borjabad[1], Diana Colón[1], Carmina Martí[2], Enric Barbeta[1]. *[1]Respiratory Unit, Hospital General Granollers, Granollers, Barcelona, Spain; [2]Microbiology, Hospital General Granollers, Granollers, Barcelona, Spain*

In adults, the influence of *Streptococcus pneumoniae (Sp)* serotypes on pneumonia mortality remains unclear.
Aim: To describe the characteristics of adult patients with pneumonia caused by *Sp* isolated in invasive strains and the influence of different serotypes in clinical outcomes.
Method: A retrospective study of *Sp* serotypes in invasive strains isolated from patients with pneumonia, describing the clinical features and complications. Blood and pleural fluid samples were processed using the BacT-Alert1 system. All strains were sent to the Reference Laboratory for serotyping. Serotypes were divided into 3 groups [1]: High invasive disease potential (H group): 1, 5 and 7 F; Low invasive potential (L group): 3, 6A, 6B, 8, 19F and 23F, the rest were named as other serotypes (O group).
Results: Between January 2009 and December 2010 were isolated 53 *Sp* strains, 44 blood samples and 9 pleural fluid (3 patients had both). 18 of them were serotypes of H group, 10 were of L group, and 23 were of O group. There were a total of 50 patients (58% men). Mean age was 56y (±19). The table shows clinical outcomes.
Conclusions: Contrary to what colud be expected the pneumonies caused by *Sp* serotypes of H group had a lower mortality ratio.[1] Brueggeman AB et al. Clonal relationships between Invasive and carriage *S pneumoniae* and serotype- and clone-specific differences in invasive disease potential.

Clinical outcomes according to serotype

	H group (18)	L group (10)	O group (22)	p value
Vasopressors (8/50p)	3 (17%)	1 (10%)	4 (18%)	0.99
Mechanical Ventilation (7/50p)	3 (17%)	1 (10%)	3 (14%)	0.99
Pleural effusion (17/50p)	8 (44%)	3 (30%)	6 (27%)	0.49
Mortality (8/50p)	1 (6%)	2 (20%)	5 (23%)	0.29

Reference:
[1] J Infect Dis. 2003 May 1; 187 (9):1424-32.

P2468

Pneumococcal pneumonia – Are the new severity scores more accurate in predicting adverse outcomes?

Carla Ribeiro[1], Inês Ladeira[1], Gabriela Abreu[2], Ana Rita Gaio[3], M. Céu Brito[1]. [1]*Pulmonology Department, Centro Hospitalar Vila Nova de Gaia, Vila Nova de Gaia, Portugal;* [2]*Clinical Pathology, Centro Hospitalar Vila Nova de Gaia, Vila Nova de Gaia, Portugal;* [3]*Mathematics Department, University of Porto, Porto, Portugal*

Background: The severity scores are validated prognostic tools for community-acquired pneumonia mortality and treatment site decision.
Aim: To compare the discriminatory power (DP) of 4 scores – the classic PSI and CURB65 and the most recent SCAP (Yandiola P et al. Chest 2009;135;1572-1579) and SMART-COP(Charles P et al.Clinical Infectious Diseases 2008; 47:375–84) – in predicting major adverse events: death, ICU admission, need for invasive mechanical ventilation or vasopressor support.
Methods: A 5-year retrospective study of patients admitted for pneumococcal pneumonia (PP). The patients were stratified based on admission data and assigned to risk classes (low-medium-high) for each score, as validated by previous studies. Statistical analysis was done based on sensitivity, specificity and area under the curve (AUC) under the ROC curve.
Results: We assessed 142 episodes of hospitalization for PP. We observed 2 deaths, 22 admissions to the ICU, 10 patients needed mechanical ventilation and vasopressor support. The AUC for each score/event is summarized on the following table.

AUC for each score/event

	Mortality	ICU admission	Mechanical ventilation	Vasopressor support
PSI	0.96 (p=0.02)	0.62 (p=0.07)	0.62 (p=0.09)	0.59 (p=0.3)
CURB65	0.96 (p=0.02)	0.70 (p=0.07)	0.66 (p=0.09)	0.72 (p=0.02)
SCAP	0.95 (p=0.03)	0.85 (p=0.049)	0.88 (p<0.001)	0.83 (p=0.001)
SMART-COP	0.88 (p=0.07)	0.85 (p=0.055)	0.81 (p=0.001)	0.82 (p=0.001)

Conclusions: The rate of all adverse outcomes increased directly with increasing risk class in all scores. The new gravity scores (particularly the SCAP score) appear to have a higher DP to all adverse events in our study.

P2469

***Clostridium difficile* infection following community-acquired pneumonia**

Gourab Choudhury, Ahsan Akram, Pallavi Mandal, Gillian Fleming, James Chalmers, Adam Hill. *Respiratory Unit, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom*

Introduction: In this prospective observational study of hospitalized community acquired pneumonia (CAP) patients, we determined the incidence *Clostridium difficile* infection (CDI) and its contribution towards treatment failure.
Methods: Data were recorded for 1883 consecutive CAP patients. All patients with 2 or more loose stools during these admissions, had samples sent for *Clostridium difficile* toxin testing. The association of specific risk factors and development of CDI was assessed by multivariable logistic regression (MVR).
Results: There were 51 cases of CDI following CAP (2.7% of CAP cases). The most frequent antibiotic regimes implicated were amoxicillin/clavulanic acid +/- macrolide (54.9%) or regimes containing cephalosporins (35.3%.).
37.3% of CDI cases received more than 2 antibiotics (excluding those used to treat CDI), while only 3 patients were on monotherapy.
Mortality secondary to CDI was 21.6% as inpatient, rising to 43.1% at 1 year (compared to 1 year mortality for all CAP patients of 21.3%, p=0.0001). Overall mortality rate for CAP patients was 9% at 30 days.
In MVR analysis, the factors associated with development of CDI were age (AOR 1.04 95% CI 1.01-1.08, p=0.03), duration of admission (AOR 1.06 95% CI 1.04-1.09, p<0.0001), total number of antibiotics during admission (AOR 2.59 95% CI 1.22-5.51, p=0.01), and total duration of antibiotic therapy (AOR 1.14 95% CI 1.02-1.27, p=0.02).
Conclusion: CDI is a relatively uncommon complication of CAP, occurring predominantly in elderly patients. Post CAP, it is, however, associated with increased in-hospital and 1 year mortality.
Reducing total antibiotic exposure and duration of treatmentmight be as important as changing antibiotic class in reducing CDI rates.

P2470

Potential value of an ELISPOT interferon gamma release assay as a diagnostic tool in Q fever infection

Gijs Limonard[1], John Bouwman[2], Anita Asscheman[2], Steven Thijsen[2], Bart Vlaminckx[3], Aik Bossink[1]. [1]*Pulmonary Diseases, Diakonessenhuis, Utrecht, Netherlands;* [2]*Medical Microbiology & Immunology, Diakonessenhuis, Utrecht, Netherlands;* [3]*Medical Microbiology & Immunology, St. Antonius Hospital, Nieuwegein, Netherlands*

Rationale: Q fever is an emerging zoonosis in the Netherlands, atypical pneumonia being the most common clinical manifestation. Acute disease is followed by resolution in the majority of cases, 10-20% will exhibit the post-Q fever fatigue syndrome (QFS) and 1-5% of patients progresses to chronic disease. Current tests measuring humoral immune response to Coxiella burnetii have considerable limitations in diagnosing these different outcomes. We conducted an exploratory study to determine T cell response to C. burnetii specific antigens using an ELISPOT interferon gamma release assay (Coxiella ELISPOT).
Methods: An in-house developed Coxiella ELISPOT interferon gamma release assay, using both phase I and phase II antigens was performed on blood samples of Q fever patients.
Results: Coxiella ELISPOT was performed for 7 patients reconvalesced after acute Q fever and 2 chronic Q fever patients (n=1 newly diagnosed, n=1 after completion of treatment). Mean (± SE) spot count for reconvalesced patients was 11±5 (range 1-42) for phase I and 31±15 (range 1-120) for phase II. One patient was diagnosed with QFS and had the highest spot count in both phase I (42 spots) and phase II (120 spots). The newly diagnosed chronic Q fever patient (male, 64 ys) showed a predominant responsiveness to phase I antigen (spot count Phase I 209, Phase II 177). The other chronic Q fever patient (male, 67 ys) had finished a 18 month antibiotic treatment for Q fever endocarditis. Coxiella ELISPOT showed a marked T cell unresponsiveness to both phase I (3 spots) and phase II antigens (0 spots).
Conclusion: Different clinical Q fever outcomes are associated with marked differences in Coxiella ELISPOT results.

P2472

Bacterial co-infections in community acquired pneumonia cases of 2009 pandemic-influenza A (H1N1) virus in Spain

Catia Cillóniz, Rosario Menendez, Santiago Ewig, Eva Polverino, Miquel Ferrer, Albert Gabarrus, Maria Angeles Marcos, Josep Mensa, Antoni Torres. *Pneumolgy, Institut Clinic del Tórax, Hospital Clinic of Barcelona - Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), University of Barcelona (UB) – SGR 911- Ciber de Enfermedades Respiratorias (CIBERES) Barcelo Pneumology, University Hospital la Fe Valencia, Spain. CIBERES, Valencia, Spain Pneumologie und Infektiologie, Thoraxzentrum Ruhrgebiet, Kliniken für Pneumologie und Infektiologie, EVK Herne und Augusta-Kranken-Anstalt, Bochum, Germany Pneumology, Institut Clinic del Tórax, Hospital Clinic of Barcelona - Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), University of Barcelona (UB) – SGR 911- Ciber de Enfermedades Respiratorias (CIBERES) Barcel Pneumology, Institut Clinic del Tórax, Hospital Clinic of Barcelona - Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), University of Barcelona (UB) – SGR 911- Ciber de Enfermedades Respiratorias (CIBERES) Barcel Pneumology, Institut Clinic del Tórax, Hospital Clinic of Barcelona - Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), University of Barcelona (UB) – SGR 911- Ciber de Enfermedades Respiratorias (CIBERES) Barcel Microbiology, Hospital Clinic of Barcelona, Barcelona, Spain Infectious Disease, Hospital Clinic of Barcelona, Barcelona, Spain Pneumology, Institut Clinic del Tórax, Hospital Clinic of Barcelona - Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), University of Barcelona (UB) – SGR 911- Ciber de Enfermedades Respiratorias (CIBERES) Barcel*

Intro The role of bacterial co-infection in complicating the clinical course of H1N1 influenza virus-associated pneumonia is poorly known, although it is often considered a cause of excess morbidity and mortality in community-acquired pneumonia
Objective: To investigate incidence,clinical outcomes and risk factors of bacterial co-infection in patients with H1N1 influenza virus-associated pneumonia
Method: Prospective observational study of hospitalized patients with influenza A (H1N1) virus associated pneumonia We compared cases with and without bacterial co-infection and analysed risk factors associated with bacterial co-infection and mortality in a multivariate analysis
Result: We studied 128 patients of whom 42 (33%) presented bacterial co-infection.The most frequently bacterial pathogen was *S. pneumoniae* 26 (62%) Independent predictors of bacterial co-infection were COPD comobidity (OR 9.6; p=0.002) and increase platelets count (OR1.0; p=0.041).
The mortality rate was 9% and related, independent, risk factors were age ≥65 years (OR5.7,p=0.037),septic shock (OR5.5,p=0.036) and mechanical ventilation (OR8.6,p=0.011). Although H1N1 patients with bacterial co-infection showed more severe clinical presentation (PSI score and length of hospital stay) their mortality was not significantly increased (25% vs 34%,p=0.54)
Conclusion: H1N1 patients with bacterial co-infection showed worse clinical presentation as assessed by PSI, trend to worse renal function and increased need of mechanical ventilation.Nevertheless, the mortality rate was similar in both groups. COPD is a strong, independent risk factors of bacterial co-infection, but is not associated with increased mortality in H1N1 patients.

P2473

Characteristics and predictors of mortality in patients with pleural infection

Rebecca Taylor[1], Stephen Murphy[1], Alice Melville[2]. [1]*Respiratory Department, Sunderland Royal Hospital, Sunderland, Tyne and Wear, United Kingdom;* [2]*Respiratory Department, Wansbeck Hospital, Ashington, Northumberland, United Kingdom*

Background: Pleural infection is increasing in incidence and causes significant morbidity and mortality. Many UK patients are cared for by non-respiratory teams.
Aim of study: To characterise patients with pleural infection, assess standards of care and identify clinical variables predictive of outcome.
Methods: Case records of patients diagnosed with pleural infection were reviewed with reference to British Thoracic Society guidelines. Pleural infection was confirmed if pleural fluid was purulent or turbid with pH<7.20 and/or positive bacterial culture, with associated systemic features of infection.
Results: 45 cases were included, 69% male, median age (IQR) 72 (46-78) years. 36% had a recent pleural procedure prior to developing infection. 36% were immunosuppressed, 13% had an underlying malignancy. 73% were under respiratory care. Inpatient mortality was 20%. Outcomes varied between respiratory and non-respiratory care: Mortality: 9% v 50% OR (95% CI) 0.10 (0.019-0.51) p=0.006; Drain-related complications: 27% v 58% OR 0.26 (0.06-1.06) p=0.056; Length of stay: mean (SD) 18.3 (20.1) v 35.3 (28.8) days HR 4.16 (1.59-10.9) p=0.0035. On univariate analysis mortality was associated with increased age, high urea, low serum albumin and low pleural fluid protein level. On multivariate analysis mortality was predicted by age≥75 years OR 10.7 (1.75-66.6) p=0.010, albumin <30mg/dl OR 6.41 (1.47-35.7) p=0.032, and non-respiratory care OR 6.7 (1.07-42.4) p=0.041.
Conclusion: Pleural infections are often iatrogenic and associated with malignancy or immunosuppression. Complications with chest drains are common. Mortality is highest in older patients with low albumin. Patients under respiratory care have better outcomes.

P2474

Multicentric penumonia caused by intravenous substances, a series of three cases

Raluca Geamalinga, Dragos Zaharia, Stefan Dumitrache-Rujinski, Miron Bogdan. *Pneumology 4, National Institute of Pneumology "Marius Nasta", Bucharest, Romania*

Background: In the past 2 years, we have encountered in our clinic an increased number of patients with multicentric pneumonia related to non-heroin intravenous drug use (so-called "ethnobotanic substances"), probably favorised by the low cost and legal status of these substances. We present three clinical cases with this pathology, in the attempt not only to describe the well-known clinical picture, but to warn about the severity of this community problem related to the usage of legal etnobotanic drugs.
The clinical cases: The three patients had a very similar clinical picture: poor social background (disorganized families, homeless, prisoners), history of intravenous drug use (especially heroin), recently using etnobotanic powders intravenously, positive HCV, negative HIV and VHB, multiple bilateral lung opacities on X-Ray, similar symptomatology (fever, dyspnea, cough with mucopurulent sputum), tricuspid valve endocarditis (confirmed by echocardiography). The bacteriological exam (hemocultures and sputum) were negative probably related to the empirical antibiotic usage prior hospitalisation. Two patients improuved slowly with antibiotic treatment. One critically ill patient died with septic shock and multiple organ insufficiency.
Conclusions: The increased number of cases with multicentric pneumonia and endocarditis related to the usage of the ethnobotanic drugs of legal status reveal their harmful effect when used intravenously.

P2475

Slow recovering of altered autonomic cardiac control in patients with community acquired pneumonia

Rustem Zulkarneev[1], Shamil Zagidullin[1], Naufal Zagidullin[1], Veronika Bakirova[2]. [1]*Internal Diseases (Propedeutics), Bashkortostan State Medical University, Ufa, Bashkortostan, Russian Federation;* [2]*Pulmonology, Clinical Hospital No. 21, Ufa, Bashkortostan, Russian Federation*

Altered autonomic cardiac control is associated with severe arrhythmia, heart insufficiency and sudden death.
Aim: To evaluate recovering of autonomic cardiac control in patients with community acquired pneumonia (CAP).
73 patients with nonsevere CAP (nCAP) and 14 patients with severe CAP (sCAP) were studied at the day of hospital admission and in follow-up periods of 3 and 14-16 days after admission. Controls (CG) included 48 healthy subjects. Autonomic cardiac control was estimated via analysis of fluctuations of consecutive RR intervals at 10 min.ECG record. Heart rate variability (HRV) indexes included standard deviation SDNN, coefficient of variation CVNN, 0.04-0.15 Hz and 0.15-0.4 Hz bands spectral power.
At admission HRV indexes were significantly lower in both CAP groups than in CG. All patients showed clinical and functional recovery. nCAP HRV indexes reached CG values on the 15th day after admission. sCAP HRV indexes remained lower than in nCAP and CG.

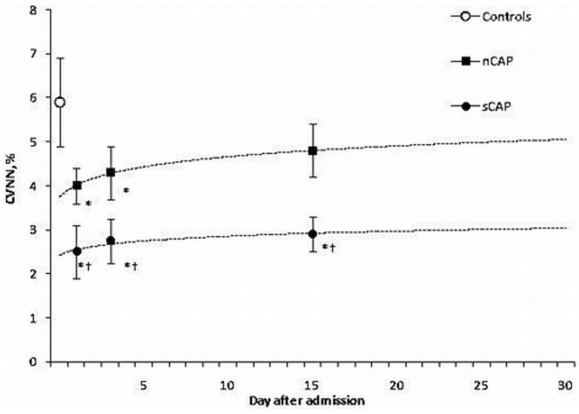

Figure 1. *p<0.05 between nCAP,sCAP and CG, †between nCAP and sCAP. Extrapolation of trend lines predicts long period of autonomic cardiac control recovery. It will take approximately 3-6 months in sCAP group.

Conclusions: Autonomic cardiac control is significantly altered in patients with CAP. Predicted recovery period may take up to 6 months in patients with severe CAP and extreme physical workload should be limited due to increased cardiovascular risk.