211. Epidemiology: risk factors and prognosis in respiratory infections

P1728

Chronic pulmonary diseases and the epidemiology of invasive pneumococcal infection

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Chronic pulmonary disease is an established risk factors for acquiring invasive pneumococcal disease (IPD), but estimates have in most cases been based on studies with aggregated denominator data on co-morbidities and have not been large enough to allow detailed analyses on less prevalent pulmonary diseases. There have also been conflicting results whether or not an underlying pulmonary disease increases the risk of death from IPD.

We examined the association between COPD, asthma, pulmonary fibrosis, sarcoidosis and pneumoconiosis and IPD, and the impact of these diseases on mortality from IPD.

IPD cases ≥18 years of age, 1990-2007, were identified via computerized databases. The associations between IPD and prior pulmonary diseases were assessed using conditional logistic regression, comparing IPD cases to 10 control subjects randomly selected from the general population (matched for sex, year of birth and county of residence). Adjustments were made for other chronic diseases, educational level and socio-economic position. Information on these was obtained through record linkage with other national databases.

4,085 cases of IPD were identified. COPD was associated with increased risk of IPD, (adjusted OR [aOR]: 4.7 (95% CI 4.0-5.6), as well as asthma (aOR: 2.2 [95% CI: 1.6-2.8]) and pulmonary fibrosis (aOR: 5.3 [95% CI: 2.8-10.0), whereas sarcoidosis and pneumoconiosis were not independently associated with increased risk of IPD. In-hospital mortality and 28-days mortality was not increased for patients suffering from the pulmonary diseases studied.

Several but not all pulmonary diseases increase the risk of IPD although this seems not be a risk factor for increased case-fatality rate.

P1729

Comparison of clinical characteristics between healthcare-associated pneumonia and community-acquired pneumonia in patients admitted into secondary hospitals

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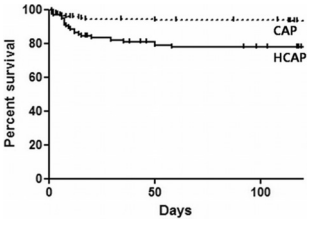
Background: To evaluate the clinical characteristics of HCAP patients admitted into secondary hospitals in Korea.

Methods: This study was retrospectively conducted between March 2009 and January 2011.

Results: Among 303 patients, 31.7% had HCAP. 42 (43.7%) resided in a long-term care facility, 36 (37.5%) were hospitalized in an acute care hospital for ≥ 2 days within 90 days. The rates of patients with CURB-65 ≥3 (22.9% vs. 9.1%) and PSI IV or more (82.2% vs. 34.7%) were higher in the HCAP group. Drug resistant pathogens were more frequently detected in the HCAP group (23.9% vs. 0.4%; $p<0.001$). Despite lower overall survival rate ($p<0.001$), multivariable analyses failed to show that HCAP was a prognostic factor for mortality.



Only PSI class was associated with mortality (p=0.005).

Cox's proportional hazard model for mortality in patients with pneumonia

Variables	Odds ratio	95% CI	p
Male	0.911	0.435-1.908	0.805
Age≥ 65	1.956	0.559-6.851	0.294
Polymicrobial pathogens	0.421	0.054-3.255	0.407
Polymicrobial pathogens	1.029	0.375-2.826	0.956
Use of Anti-pseudomonal agent	1.597	0.669-3.816	0.292
Use of Anti-MRSA* agent	1.460	0.308-6.917	0.634
CURB-65 score ≥ 3	1.926	0.933-3.973	0.076
PSI class IV and V	9.182	1.951-43.219	0.005
HCAP	0.906	0.377-2.179	0.826

Conclusions: Although HCAP should be distinguised from CAP, current definition of HCAP seems not to be prognostic for death.

P1730

Prevalence of nontuberculous mycobacteria in diffuse panbronchiolitis

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Background: Nontuberculous mycobacterial (NTM) lung disease secondary to cystic fibrosis is often reported, but prevalence of NTM in other chronic respiratory tract infection is still unknown.
Objectives: We retrospectively investigated prevalence of NTM in diffuse panbronchiolitis (DPB), notorious chronic respiratory tract infection with severe obstruction seen in Japan, and clinical characteritics of DPB with NTM patients.
Methods: We reviewed Mycobacterial culture of 32 DPB patients who regularly visited our hospital (local central hospital with 872 beds) from Jan. 2000 to Dec. 2011. Prevalence was defined as subjects having at least one positive NTM culture. Age, sex, BMI, result of pulmonary function test, immunocompromised state, and time from DPB diagnosis to the first positive result of NTM culture was also investigated.
Result: Of 32 patients, mean age was 51.3 (95% CI 45.9-56.7), follow-up time was 153.8 months (95% CI 107.9-199.6). The overall prevalence of NTM in sputum was 12.5% (4 patients). Of the 4 patients, 4 had positive culture of MAC and 2 had positive culture more than twice. No patients needed treatment for NTM. Mean time from DPB diagnosis to the first positive result was 166.2 months. DPB with NTM patients tended to have smaller BMI and smaller %FEV1 (table 1). The CT findings showed bronchiectasis and multiple nodules.

	NTM Positive	Not Positive	P value
n	4	28	
Age	48.3 (0.3-96.2)	51.8 (46.9-56.6)	0.832
%FEV1	48.2 (9.1-87.2)	74.1 (63.4-84.9)	0.078
BMI	17.8 (12.1-23.5)	21.3 (19.9-22.7)	0.076

Conclusion: NTM infection sometimes occurs secondary to DPB. The CT findings were similar to those of primary nodular/bronchiectatic MAC disease.

P1731

Respiratory infections in young children with cystic fibrosis: A community-based longitudinal study

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Viral infections in early childhood might play a role in causing lung damage in cystic fibrosis(CF).
Aim: To study the respiratory viral burden during symptomatic and asymptomatic states of children with CF under 3 years in a community setting over one year.
Methods: A longitudinal multi centric pilot study is being done in 3 tertiary care hospitals of Australia with CF Units.Parents of eligible children are enrolled and taught how to collect, mail the nasal swabs and record symptoms with validated methodology (Lambert, S.B. et al. Vaccine 2008; 26(15):1826-3).They were asked to collect one swab every fortnight and one during symptoms. Swabs were mailed to the laboratory in a viral transport tube. Samples were analyzed with PCR for a range of common respiratory viruses.
Results: A total of 78 children were recruited. 946 nasal swabs were collected during 530 child months. Mean ARI rate was 0.4 episodes per child month. 913 swabs have been analyzed to date. 45.1% of parent reported symptom swabs and 19.5% of asymptomatic swabs were virus positive. The pattern of viruses isolated is as shown in Table 1.

Table 1. Isolation pattern in percentage

Virus	Rhino	RSV/Para	hMPV	Coinfections	Adeno/Boca	Polyoma	Corona viruses
Symptom Swabs	21.4	1.7/2.3	2.3	6.4	0.6/1.7	2.9	5.2
Routine Swabs	9.6	0.4/0.3	0.3	2.2	0.7/2.3	2.4	4.9

Conclusions: ARI rate, viral isolation in asymptomatic swabs, pattern of viruses is similar to previous studies. Isolation in symptom swabs(45.1%) is less than expected. Acute respiratory infections, viral isolation and virus carriage in children with CF is similar to that reported in children without lung conditions.
Acknowledgements: Australian Cystic fibrosis Rsearch Trust & Telethon Foundation.

P1732

Impact of age and comorbidity on presentation, aetiology and outcome in patients with community-acquired pneumonia

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Background: Community-acquired pneumonia (CAP) is currently undergoing re-evaluation. The aim of the study was to determine the influence of age and comorbidity on microbial patterns in elderly patients with community-acquired pneumonia (CAP).
Methods: In a prospective observational study of adult patients with CAP, excluding those residing in nursing homes, we compared patients aged 65 -74 years, 75 - 84 years and 85 years or older for potential differences in clinical presentation, comorbidities, severity on admission, microbial investigations, aetiologies, antimicrobial treatment, and outcomes.
Findings: We studied a total of 2149 patients. The number of patients in each age group was as follows: 759 (35·3%) patients aged 65-74 years, 941 (43·7%) aged 75-84 years, and 449 (20·8%) patients aged 85 years or older. At least one comorbidity was present in 1710 (79·6%) patients. *Streptococcus pneumoniae* was the most frequent pathogen in all age groups, regardless of comorbidity. Pathogens such as *S. aureus (including MRSA), H. influenzae*, enterobacteriaceae, and *P. aeruginosa* were present in 15% and were found almost exclusively in patients with comorbidities. Increasing CAP severity on admission and mortality but decreasing ICU admission rates and use of mechanical ventilation suggested an increasing frequency of treatment restrictions across age groups.
Interpretation: Age did not significantly affect pathogen patterns. Potential multidrug-resistant (MDR) pathogens were not frequent and were found almost exclusively in patients with comorbidities. Excess mortality in the elderly was not related to aetiology but to age and disability.

P1733

Bacterological assessment of healthcare-associated pneumonia (HCAP) using 16S rRNA gene sequencing analysis

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Background: ATS/IDSA guideline for HCAP was released in 2005. HCAP seems to be closer to HAP than CAP, but few reports has been documented according to the bacteriological incidence in HCAP. Molecular biological methods have been used in addition to ordinary cultivation methods, and we evaluated bacterial incidence of HCAP using molecular methods in addition to cultivation.
Patients and methods: From April 2010 to December 2011, patients with HCAP were enrolled, and the bronchial washing were obtained from the pathological lesions using bronchoscopy. The partial 580 bp of 16S rRNA gene were amplified by PCR, and clone libraries were constructed. Then 96 clones in each sample were randomly chosen, and sequences of 16S rRNA gene were determined. Homology of the sequences was searched using BLAST.
Results: Thirty patients (22 males and 8 females, average age 70.9 (45-84)) with HCAP were enrolled. In relation to severities of pneumonia, 13.3% were mild, 63.3% were moderate and 23.3% were severe using Pneumonia Severity Index. First dominant phylotypes were *P. aseruginosa* (13.3%), *S. pneumoniae* (10%), *H. influenzae* (7.0%), *S. aureus* (6.7%), and about 40% of these patients showed anaerobes (14%) and oral streptococci (24%). Ordinary cultivation could not detect some organisms detected by this molecular method, especially anaerobes (0 in cultivation and 4 in molecular analysis) and oral streptococci (2 and 7, respectively).
Conclusion: It is speculated that anaerobic pathogens and oral streptococci were

important in addition to potentially drug-resistant pathogens (*P. aeruginosa* and *S. aureus)*, and oral streptococci were more important than previously reported in patients with HCAP.

P1734

Effect of excluding ICU-admission on clinical outcomes in a randomized control trial studying the effect of corticosteroids in patients hospitalized with CAP

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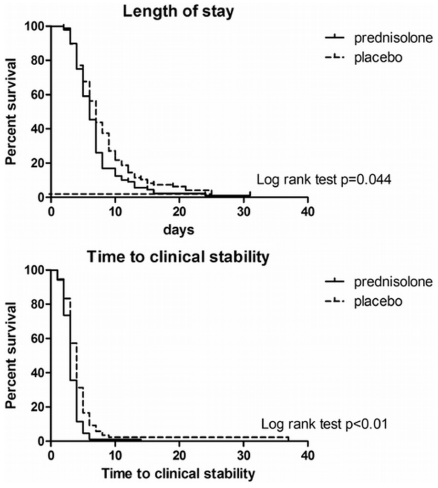
Introduction: Recently 2 Dutch studies were performed investigating the effect of adjunctive steroids in patients with CAP. The study of Snijders (AJRCCM 2010) showed no difference in outcome, whereas de study of Meijvis (Lancet 2011) yielded a significant reduction in Length of Stay (LOS) by one day. However the Meijvis study did not include patients admitted to the ICU.
Aim: Exploring the effect of ICU admission in the Snijders study on clinical outcomes.
Results: Out of 213 patients 22 (10,3%) patients were admitted to the ICU. Clinical outcomes are shown in table 1 and fig. 1. In the non-ICU group there were more late failure in the prednisolone group than in the placebo group (17 (19.1%) patients vs 6 (5.9%), p=0.007).

Table 1. Clinical outcomes

With ICU admission	Prednisolon (n=104)	Placebo (n=109)	p-value
Clinical cure at d ay 7	84 (80.8%)	93/109 (85.3%)	0.38
LOS – days (IQR)	6 (5-8)	7 (5-8)	0.16
Time to clinical stability (IQR	3 (2-4)	3 (2-4)	0.97
30 day mortality	6/106 (5.8%)	6/109 (5.5%)	0.93
Without ICU admission	**Prednisolone (n=89)**	**Placebo (n=102)**	**p-value**
Clinical cure at day 7	80 (89.9%)	89 (87.3%)	0.57
LOS – days (IQR)	6 (4.3-8)	7 (5-10)	0.07
Time to clinical stability (IQR)	3 (2-4)	4 (3-5)	0.001
30 day mortality	1 (1.1%)	6 (5.9%)	0.12



Conclusions: When excluding ICU-patients prednisolone did have an impact on LOS and TTCS with an increased rate of late failures.

P1735

Characterization of community acquired pneumonia (CAP) with severe sepsis at diagnosis

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Background: CAP is a serious respiratory infection that may cause severe sepsis in around 30% of patients, thus increasing severity and mortality.
Objective: To characterize patients who develop CAP with early or late severe sepsis at presentation.
Results: A prospective multicentric cohort study was performed in 13 hospitals. Severe sepsis was diagnosed using Drenmsizov criteria (Chest 2006;129;968-978). 4,137 patients were included: 1,171(28.3%) without sepsis, 1,394(33.7%) with non severe sepsis and 1,572 (38%) with severe sepsis: 521(33.1%) of these had early (≥48 hours) and 1,051 (62%) late onset. There were no gender differences in early vs. late sepsis. Early sepsis was associated to elderly patients (≥65 years: 72.2% vs. 65.2%, p=0.006). Statistical differences in clinical presentation and comorbid conditions are depicted in Table 1. Early severe sepsis showed higher CURB65 scores than late sepsis (49.6% of patients vs. 41.5% with score 3).

Table 1. CAP with severe sepsis characteristics

	Early onset (≤48h) 521 (33.1%)	Late onset (>48h) 1051 (66.9%)	p
Comorbidities			
Diabetes	121 (23.2%)	184 (17.5%)	0.007
Cerebrovascular disease	85 (16.3%)	85 (8%)	<0.001
Clinical and radiological data			
Tachypnea ≥30	177 (37.5%)	312 (32%)	0.041
Hypotension <90 mmHg	161 (30.9%)	235 (22.4%)	0.002
Multilobar involvement	116 (22.2%)	329 (31.3%)	<0.001
Pleural effusion	67 (12.9%)	188 (18%)	0.010

Conclusions: Early severe sepsis in CAP presents with greater severity while late onset does with large radiographic involvement. Diabetics, elderly patients and those with cerebrovascular disease are more prone to develop rapid onset severe sepsis in CAP.

P1736

Prognostic impact of the degree of hypoxemic respiratory failure in patients with severe pneumonia (PSI IV-V) and hypoxemia

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Aims: To assess the role of the degree of hypoxemic respiratory failure (HRF) in the outcomes of patients with severe pneumonia (SCAP) (PSI IV-V) and hypoxemia.
Methods: We analyzed the degree HRF measured as PaO2/FiO2 less than or greater than 250 on admission in a group of patients with SCAP (PSI IV-V) who scored the item hypoxemia in PSI score (PaO2 <60 mmHg, +10 pts). Factors that determined a greater degree of HRF and its influence in the outcome (complications and mortality) were analyzed.
Results: From a cohort of 1,314 pneumonias, 364 (27.7%) were hypoxemic SCAP (PSI IV-V and PaO2<60 mmHg) and 217 (59.6%) presented PaO2/FiO2 <250. PSI IV-V patients with PaO2/FiO2<250 rated higher in PSI score [123.9 (23.4) vs 116.3 (20.2); p<0.01]. Multivariate analysis showed that PaCO2>45 mmHg [OR 5.42, (95%CI 2.78-10.57)], confusion [OR 2.38. (95%CI 1.16-4.89)], and chronic heart failure [OR 2.06, (95%CI 1.15-3.70)] were associated with the highest degree of HRF. PSIV IV-V patients with PaO2/FiO2<250 presented more ICU admissions (14.3% vs 6.1%; p=0.015), need for mechanical ventilation (9.2% vs 2%; p=0.006), and a longer hospital stay (13.4 (14.7) vs 10.2 (6.5) days; p=0.014). Mortality was significantly higher in PaO2/FiO2<250 group (17.1% vs 4.1%; p<0.01).
Conclusions: 1-The higher degree of HRF in hypoxemic PSI IV-V patients is associated with PaCO2>45 mmHg, chronic heart failure, and confusion. 2-The degree of HRF could negatively impact in the outcome (complications and mortality) of SCAP.3-Our data suggest that the assessment of hypoxemia in SCAP should be considered as semi-quantitative data due its prognostic implications.

P1737

Cardiac diseases in patients with community acquired pneumonia (CAP)

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Background: Community Acquired Pneumonia (CAP) and cardiac diseases are mutually aggravating conditions. There is a surge of interest in the association of major cardiac diseases and CAP and this study was done to contribute to the world's literature from the Indian sub-continent.
Materials and methods: In this retrospective analysis of patients admitted with CAP between January 2011 and January 2012 at a tertiary care referral centre we looked for associated cardiac diseases.

Results: Of the total patients included in the analysis (n=73), 34.24% (25) had an associated cardiac disease. There were 45 instances of cardiac problems. 19.17% (14) had pulmonary hypertension, 16.44% (12) had CCF/Acute LVF, 13.69% (10) had Ischemic heart disease, 4.1% (3) had Rheumatic heart diseases, 2.74% (2) had arrhythmias and there was 1 instance each of Infective endocarditis, acute pulmonary thromboembolism, congenital heart disease and MI (1.36%). 14 (56%) out of 25 patients who had cardiac diseases required ICU care while 9 (18.75%) out of 48 patients who did not have cardiac conditions required ICU care(p=0.001). 6 out of 25 patients had new onset cardiac problems. Two patients in the cardiac disease group died, while in the non cardiac disease group, one patient died.
Conclusions: There is a high degree of correlation between pre existing cardiac disease and CAP as also between CAP and new onset cardiac diseases especially CAD.
The cardiac disease in such patients adversely influences the outcome of the pneumonia.
A careful search for pre existing cardiac disease should be made in patients who present CAP.
Patients with identified heart disease should prophylactically receive vaccines to reduce the incidence of CAP.

P1738
The role of procoagulant activity in patients with community acquired pneumonia
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Community acquired pneumonia (CAP) is still one of the most important causes of morbidity in adults. In severe cases, parapneumonic effusions or empyema may develop. In these patients, the increased vascular permeability, mediated by several cytokines, allows migration of inflammatory cells, an increased fluid accumulation and bacterial invasion into pleural space. The activation of the fibrinolytic system produce the D-dimer and follow by increased other procoagulant markers like thrombin anti thrombin (TAT), fragment 1.2. Moreover, serum levels of AT-III, D-D and CRP at admission appear to be useful biomarkers for assessing the severity of CAP. Our study included patients with CAP. Blood D-dimer, TAT and Fragment 1,2 levels were measured by Enzyme Linked Fluorescent assay 24 and 48 hours after admission. The results were correlated with the clinical, laboratory, and severity scoring of pneumonia (PORT and APACHI II). A total of 59 patients with pleural effusion were included in the study. Eleven patients (18%) developed pleural effusion. Only D-dimer levels increased 48 hours following admission compared to the 24 hours levels (1939±1234 vs 1812±1592 ng/ml). Fragment 1,2 and TAT levels decreased after 48 hours. D-dimer at 24 hours was correlated with the age, platelet counts and PORT score. F 1,2 and TAT at 24 hours were correlated with recent of neutrophils. PT at 24 hours was correlated with WBC count. After 48 hours, D-dimer was correlated only with age. F1,2 and TAT had no correlations with clinical parameters after 48 hours. The 24 hours D-dimer predicts severity of CAP. Other coagulation markers and serial monitoring of blood coagulation markers have a limited role in predicting CAP.

P1739
Pancreatic stone protein predicts positive sputum bacteriology in exacerbations of COPD
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Background: Pancreatic Stone Protein/regenerating protein (PSP/reg) is increased in bacterial inflammatory processes. PSP/reg might therefore be also useful as a predictor of bacterial infection in COPD.
Methods: 200 consecutive patients presenting to the emergency department due to acute exacerbation of COPD were prospectively assessed. Patients were evaluated based on clinical, laboratorial and lung-functional parameters at admission (exacerbation) and after short term follow-up (14-21 days). PSP/reg serum values were measured by a new developed enzyme linked immunosorbent assay (ELISA).
Results: PSP/reg levels were elevated in subjects with COPD exacerbation (23.8 ng/ml 95% CI [17.1-32.7]) when compared to those with stable disease (19.1 ng/ml 95% CI [14.1-30.4]) and healthy controls (14.0 ng/ml [12.0-19.0], p<0.01). Higher PSP/reg values were observed in exacerbations with positive (26.1 ng/ml 95% CI [19.2-38.1]) as compared to those with negative sputum bacteriology (20.8 ng/ml [15.6-27.2], p<0.01). Multivariate regression analysis revealed PSP/reg as independent predictor of positive sputum bacteriology. A combination of a PSP/reg cut-off of >33.9 ng/ml and presence of discolored sputum had a specifity of 97% to identify patients with pathogen bacteria on sputum culture. In contrast, PSP/reg levels <18.4 ng/ml and normal sputum color ruled widely out positive bacterial sputum culture (sensitivity 92%). In survival analysis, high PSP/reg levels at hospital admission were associated with increased 2-year mortality.
Conclusions: PSP/reg might represent a promising new biomarker to identify bacterial etiology of COPD exacerbation in future.

P1740
Healthcare-associated pneumonia among hospitalized patients. Is it really different from community acquired pneumonia?
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Background: Current practice guideline suggested that all patients with healthcare associated pneumonia (HCAP) should receive similar combination empirical therapy like hospital acquired pneumonia. This study aimed to determine the differences in etiology and clinical outcomes between HCAP and community acquired pneumonia (CAP) patients.
Methods: We conducted a retrospective study of patients with HCAP and CAP who were hospitalized between January 2010 and December 2011. We investigated the 30-days mortality and occurrence of potentially drug-resistant (PDR) pathogens.
Results: A total of 483 patients (208 HCAP patients, 275 CAP patients) were evaluated. HCAP patients were older than patients with CAP (mean 72.3 yr [SD 13.7] vs. 63.4 yr [SD 17.8]; $p < 0.0001$) and more frequently infected PDR pathogens (18.8% vs. 4.9%; $p < 0.0001$). Patients with HCAP had higher initial severity compared to CAP patients (Pneumonia Severity Index score, mean 122.8 [SD 35.1] vs. mean 85.8 [SD 41.6]; $p < 0.0001$) and mortality rate was increased in HCAP patients on univariate analysis. (16.3% vs. 5.1%; $p < 0.0001$). Multivariate logistic regression analysis after adjusting for sex, age, and inital severity, revealed that HCAP, use of antipseudomonal combination antibiotics, and occurrence of PDR pathogens are no more independent risk factors for 30-day mortality.
Conclusions: HCAP is common cause of hospital admission and is associated with a high mortality. This increased mortality was primarily related to age and initial severity rather than HCAP and presence of PDR pathogens. It may suggest that HCAP patients could be treated in the same way as patients with severe CAP.

P1741
Electronic screening tool for pneumonia: Performance and utilization
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Rationale: We developed a real-time electronic screening tool that identifies patients with pneumonia in the emergency department (ED) using the electronic medical record. Our aim was to evaluate performance and compare utilization rates 6 months after tool initiation.
Methods: Our screening tool uses Bayesian logic to combine electronically recorded clinical data with a natural language program that identifies evidence of pneumonia within radiographic reports. Once a patient is identified, the ED physician can confirm the diagnosis then proceed with a decision support tool for management recommendations. In 4 EDs located in Salt Lake City, among all patients obtaining a chest radiograph for the periods of May 5-Jul 10 2011, and Oct 1-Dec 31 2011, a random selection of 300 as well as 60 tool-positive patient records was evaluated by three physician authors for clinical and radiographic evidence of pneumonia. Sensitivity and specificity compared to physician review, ED physician acknowledgment, and tool utilization were evaluated.
Results: 13,859 patients had chest imaging done; the rate of pneumonia was 8.2%. Sensitivity was 0.74, and positive predictive value 0.51. Among the true- positive cases, ED physicians' recognition and agreement with the tool alert showed a non-significant increase from 37% (15/41) to 53% (21/40) (p=.22). Of all true pneumonia cases, utilization of the decision support tool increased significantly, from 12% (6/49) to 48% (29/60) (p=.004).
Conclusion: Our electronic screening tool demonstrated moderate sensitivity and positive predictive value compared to physician review. Physician recognition and usage increased over time.

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The results of automated data capture following introduction of electronic patient record (EPR) in a specialist bronchiectasis clinic
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We have piloted EPR in a specialist bronchiectasis clinic in Leeds with an aim to combine e-consultation with high quality live coded data for audit, service development and clinical trials. We report a preliminary snapshot of 12 months data.
Method: The software used was a primary care web based solution from Egton Medical Information Systems. Key functions include demographics, alerts, coded history, e-consultations, automated letter generation and e-prescribing. New local, Read and snowmed codes were developed to ensure detail capture of previously un-coded information. Data was entered using templates.

Results: A total of 110 patients (68 F) had a diagnosis of bronchiectasis with a median(range) age of 62(17-87)yrs and median(range) %predicted FEV1 of 65%(12%-133%). Investigations carried out are shown in table 1 & underlying aetiology in table 2.

Table 1. Investigations carried out

Investigations	% of patients
Immunoglobulins	82%
CT chest	77%
IgE levels	62%
Specific Antibodies titre	53%
Aspergillus IgG Levels	49%
Rheumatoid factor	36%
Sweat test	27%
IgG subclass	25%
Alpha-1 antitrypsin levels	14%

Table 2. Underlying Aetiology of Bronchiectasis

Aetiology	% of Patients
No underlying aetiology identified as yet	54%
Asthma	16%
Immunodeficiency	10%
Post infective	9%
Primary Ciliary Dyskinesia	6%
Rheumatoid arthritis	5%

Sputum microbiology was positive for *P. aeruginosa, A. fumigatus* and Methicillin-resistant *S. aureus* in 38%, 21% & 9% of cases respectively.
Conclusion: Early experience has highlighted the successful implementation of EPR. The approach has been shown to work smoothly and provides a strong basis for audit and research for any chronic disease.

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Bacterial aetiology in the Danish pleural empyema project
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Recent publications identified the aetiology of pleural empyema with results varying according to antimicrobials given before sampling.
Objectives: Our aim was to identify the microbiological aetiology in pleural empyema by standard methods and later evaluate, if DNA-amplification methods may supplement culture results by detecting further clinically relevant micro-organisms.
Methods: From 2008-2011 in the Danish Pleural Empyema Project, the respiratory medical departments from 8 Danish hospitals participated. Cases were prospectively identified clinically and pleural fluid samples were collected for standard microbiological analysis (microscopy and culture). Further samples were collected and kept in storage at minus 80 degrees Celsius for later PCR analyses. Cases judged as non-infectious were excluded. Clinical data were collected regarding symptoms, pre-admission treatment, clinical findings, risk factors, co-morbidity, blood test results, radiology, treatment, and outcome.
Results: A total of 434 episodes of pleural empyema were identified. In 242 cases (56%), the cultures were either negative (n=198) or no pleural samples were successfully taken (n=44). Among the 192 cases with proven aetiology, mixed infections were identified in 47 cases (24%), 34 Streptococcus pneumoniae (18%), 53 non-pneumoniae streptococci (28%), 16 Staphylococcus aureus (8.3%), 15 enterobacteriaceae (7.8%), 15 anaerobes (7.8%), and 5 Enterococcus species (2.6%).
Conclusions: 56% of the cases were culture negative by standard methods. Future studies are planned to implement DNA-methods optimised for mixed infections for identification of the micro-organisms. This may expand the identified spectrum of detected micro-organisms and improve the treatment.

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Predictors of rehospitalization after admission for community-acquired pneumonia
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The aim of our study was to examine variations in rates of rehospitalization, and predictors of rehospitalization, for patients hospitalized with community-acquired pneumonia (CAP) in the United States Department of Veterans Affairs (VA) health care system.
We conducted a retrospective national cohort study over 5 years including patients >65 years of age hospitalized with CAP. Our primary outcome was all-cause rehospitalization within 90-days. Our primary analysis was a multilevel regression model, adjusting for admitting hospital, and included 38 variables encompassing demographics, pneumonia severity, antibiotics received, prior outpatient medications, pre-existing comorbid conditions, and prior outpatient utilization (e.g., emergency department, primary care) the year prior to the pneumonia admission.
We identified 50,119 patients with CAP of which 21.8% required rehospitalization within 90-days. Hospital rates ranged from 14.3% to 32.3%. In the regression model, factors significantly associated with increased rehospitalization included alcohol abuse (odds ratio 3.07, 95% confidence interval 1.23-7.61), number of prior outpatient pulmonary medications (1.10, 1.01-1.19), and number of prior emergency department visits (1.1, 1.04-1.14).
A large number of patients required rehospitalization after admission for CAP, and rates varied widely. Only a few factors were significantly associated with rehospitalization and these factors were not related to the pneumonia hospitalization. Additional research is needed to determine which rehospitalizations after pneumonia are preventable and ways to prospectively identify hospitalized CAP patients at risk for rehospitalization.

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Comparison of PSI, A-DROP, CURB-65, CRB-65, and SOAR indices in hospitalized patients with community acquired pneumonia
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We evaluated the relation between PSI, A-DROP, CURB-65, CRB-65, and SOAR indices and investigate the importance of these indices in the follow up of hospitalized patients with community acquired pneumonia(CAP).
Patients hospitalized in Celal Bayar University Chest Disease Clinic between January 2009 and January 2012 due to CAP were included to the study.Socio-demographic findings,symptoms,comorbidities,habits,history,physical examination findings,laboratory and radiological findings,pneumonia severity groups,treatment result,duration of hospitalization,and cost of disease treatment of patients were obtained from "Pneumonia Data Base"prepared by Turkish Thoracic Society Respiratory Infections Scientific Assembly.Indices above were calculated for each patient.
70 patients were included to study.There were 49 male(70%) and mean age was 63,07±18,08 years.Mean duration of hospitalization was 10,08±5,64 days.57 patients(81,4%) were totally cured after one month follow up. Indices mentioned above were correlated with each other(Pearson correlation test) ($p<0,000$).There was no difference between indices according to total cure and development of complication due to pneumonia($p>0,05$).Duration of hospitalization of CAP patients was categorized as 0-14 days and more than 14 days.These indices were found significiantly different when comparison was done according to this categorization($p<0,05$).
PSI, A-DROP, CURB-65, CRB-65,and SOAR indices were found to be correlated with each other.All of the indices mentioned above has low estimation rate for treatment outcomes and development of complication due to pneumonia but high estimation rate for the duration of hospitalization.