264. Respiratory infections: prognosis and outcome

P2473
Prediction of prognosis in healthcare-associated pneumonia
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Rationale: Healthcare-associated pneumonia (HCAP) is a new category of pneu-
monia. Since patients with HCAP are at risk for infection with drug-resistant
pathogens and increased mortality compared to patients with community-acquired
pneumonia (CAP), predicting their prognosis is an important issue in HCAP.

Purpose: To apply prognostic scoring systems of CAP (PSI, CURB-65 and
Japanese A-DROP systems) in prospectively collected patients with CAP and
HCAP.

Methods: Patients admitted in three educational hospitals in Japan were analyzed.
Receiver operator characteristic curve (ROC) analyses were performed for the
three scoring systems in CAP and HCAP. Further, better system was sought in
HCAP.

Results: 927 cases with CAP (mean age 73.2 years) and 469 cases with HCAP
(81.8 years) were enrolled. Compared to HCAP, CAP showed larger values of area
under the curve (AUC) in all scoring systems (CAP vs HCAP: PSI 0.77 vs 0.64,
CURB-65 0.76 vs 0.65, A-DROP 0.80 vs 0.65). To develop a better scoring system
for HCAP, candidate factors for predicting prognosis were extracted by univariate
analysis followed by stepwise method. By logistic regression analysis, serum value
of albumin (Alb) was related to the prognosis. Each of AUC in prognostic ROC
Thrombocytosis is a marker of poor outcome in community-acquired pneumonia

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Background: Thrombocytosis, often considered a marker of normal inflammatory reaction of infections, has recently been associated with increased mortality in community-acquired pneumonia (CAP).

Methods: We evaluated 2,423 hospitalized patients with CAP. We excluded patients with immunosuppression, neoplasm, tuberculosis or haematological disease. The aim was to assess characteristics and outcomes of patients with CAP and thrombocytosis and thrombocytopenia.

Results: Fifty-three patients (2.2%) presented thrombocytopenia, 204 (8.3%) thrombocytosis, and 1,966 (80.7%) a normal platelet count. Patients with thrombocytosis were younger (p < 0.001), while those with thrombocytopenia more frequently had chronic heart and liver disease (p < 0.001). Patients with thrombocytosis more frequently presented respiratory complications such as complicated pleural effusion/empyema (p < 0.001), whereas those with thrombocytopenia more frequently presented severe sepsis (p < 0.001), septic shock (p = 0.009), need for invasive mechanical ventilation (p < 0.001) and ICU admission (p < 0.01). Patients with thrombocytosis had longer hospital stay (p < 0.004), higher mortality (p < 0.001), septic shock (p < 0.009), need for invasive mechanical ventilation (p < 0.001) and ICU admission (p < 0.011).

Conclusions: Thrombocytosis in CAP is associated with poor outcome, complicated pleural effusion/empyema. Therefore thrombocytosis in CAP should encourage new respiratory complications and could be considered for severity evaluation.

P2475
eCURIOutperforms CURB-65 and A-DROP for predicting 30-day mortality in pneumonia

Barbara Jones1,2, Jason Jones1,2, Al Jephson1,2, Naresh Kumar2, Ben Briggs1,2, Caroline Vines3,4, Todd Allen4,5, Nathan Dean1,2

Rationale: Severity assessment tools that use objective data available in the electronic medical record include CURB-65, A-DROP, and eCURI, an electronic version of CURB-65 using continuous variables (Jones et al. Chest. 2011;140:156-163). Our aim was to compare eCURI, CURB-65, and A-DROP versus 30-day mortality in a contemporary, emergency department pneumonia cohort.

Methods: We identified pneumonia patients by ICD-9 code plus compatible radiograph in 7 emergency departments Dec 1, 2009-Dec 1, 2010. Patients with community-acquired pneumonia (CAP) and health-care acquired pneumonia (HCAP) were included. We extracted initial clinical features and triage information from the electronic medical record. We determined mortality from the Utah Population Database. Receiver operator characteristic (ROC) analysis of mortality was conducted.

Results: We studied 2394 patients. 30-day mortality was 3.5% for 2061 patients with CAP and 16.2% for 333 patients with HCAP. The table shows areas under the curve (AUC) versus 30-day mortality.

<table>
<thead>
<tr>
<th></th>
<th>All Patients</th>
<th>CAP Patients</th>
<th>HCAP Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>eCURB</td>
<td>0.85</td>
<td>0.87</td>
<td>0.74</td>
</tr>
<tr>
<td>CURB-65</td>
<td>0.81</td>
<td>0.83</td>
<td>0.74</td>
</tr>
<tr>
<td>A-DROP</td>
<td>0.82</td>
<td>0.83</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Conclusion: eCURI outperformed CURB-65 and A-DROP for mortality prediction in patients with CAP. For HCAP patients, all mortality predictors performed poorly.

P2476
The incidence and risk factors of ventilator associated pneumonia on the mortality in patients with traumatic brain injury

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Background and Goal of Study: Our objective was to describe the incidence, risk factors and evaluate the influence of Ventilator associated pneumonia (VAP) on the mortality and morbidity in patients with traumatic brain injury (TBI).

Methods: During December 2008-January 2012, 133 patients with TBI requiring mechanical ventilation more than 48 hours and GCS<8 were studied. 83 males and 50 females. The mean age was 36 yrs. On admission to the intensive care unit (ICU) they had body mass index 23.4±7 kg/m2 and APACHE II score 18±4.4. On average 33 patients the 34 had coexisting medical illness.

Results: VAP occurred in 40 out of 133 TBI patients There was no difference in predomiance as far as gender was concerned. Incidence of VAP was significantly associated to patients requiring longer mechanical ventilation 14 days±2 and longer sedation 10 days±2. Patients with co morbidity medical illness and VAP were associated with a significantly greater degree of nonneurological organ system dysfunction, though there was no difference in frequency of VAP development compared to the patients without co morbidity medical illness. Although VAP was not associated with increased hospital mortality, patients who developed VAP had a longer duration of mechanical ventilation (24 versus 8 days, p < 0.0001) and longer ICU length of stays (28 versus 10 days, p < 0.0001).

Conclusions & Discussion: The incidence of VAP in patients with TBI is high; however, its appearance does not affect the prognosis and does not seem to be associated with a significantly increased risk of mortality though increases the mechanical ventilation duration and the ICU length of stay.

P2477
Incidence, etiology and prevention strategies in early and late onset ventilator associated pneumonia in a tertiary care intensive care unit

Nikos Maurox, Panos Kharra, Vipin Kaur, Rajesh Pande, Sharmila Sengupta, Tulis Chugh

Introduction: Ventilator associated pneumonia (VAP) is associated with increased morbidity and mortality. VAP has been characterized into early (E-VAP) and late onset (L-VAP) depending upon the duration of mechanical ventilation.

Objectives: To ascertain the incidence of VAP and its common causative pathogens and compliance to VAP prevention strategies in an intensive care unit (ICU).

Methods: Prospective cohort surveillance of VAP was conducted by applying the definitions of the US Centers for Disease Control and Prevention National Nosocomial Infections Surveillance System (CDC-NNIS). Data on microbial isolates and antimicrobial resistance were also collected along with documentation of measures to prevent VAP.

Result: Between January 2010 to December 2011, 2756 patients who were hospitalized in the ICU, for an aggregate 10,948 patient days acquired 66 VAP infections. The ventilator days were 4190 and this amounts to overall VAP rate of 15.75 infections per 1000 ventilator days. The incidence of E-VAP and L-VAP was 24.2% & 7.8% respectively. The most common pathogens identified were Acinetobacter baumannii, Pseudomonas aeruginosa and Klebsiella spp. Most of these were multidrug resistant. There was low compliance to hand hygiene, head of bed elevation, daily sedation interruption and oral care.

Conclusion: VAP was the commonest nosocomial infection in the ICU. Most of the VAP was late in onset (L-VAP) and was caused by multidrug resistant pathogens. There is a need to maximize compliance to VAP prevention measures as part of the routine management of patients on mechanical ventilation.

P2479
On improving assessment of in-hospital mortality and ICU admission in community-acquired pneumonia patients by using the e-CURB

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Background: Severity assessment in CAP is important to decide for the site of care. We aim to evaluate an electronically generated e-CURB elements in predicting in-hospital mortality and ICU admission in CAP.

Material and methods: 134 radiographically confirmed CAP were evaluated. We electronically calculated the area under the receiver-operating characteristic (ROC) curve for eCURI and compared it with conventional CURB-65.

Results: Conventional CURB-65 could predict in-hospital mortality with an area under the curve (AUC) of 0.81 and ICU admission (AUC=0.87). The eCURI proved to be superior to the conventional CURB-65 in predicting in-hospital mortality (AUC=0.83) (P<0.0001) (figure 1). Also, eCURI was better in predicting ICU admission (AUC=0.89) (P<0.0001) (figure 2).
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Monday, September 3rd 2012

**P2480**

PaO2/FiO2 ≤ 250 mm Hg, confusion and uremia predicted more mortalities of severe community-acquired pneumonia with three IDSA/ATS minor criteria.

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**Background:** The CURB-65 scoring system performs well at identifying patients with pneumonia who have a low risk of death. Whether it predicts mortality in community-acquired pneumonia (CAP) better than the 2007 Infectious Disease Society of America (IDSA)/American Thoracic Society (ATS) minor criteria in low-mortality-rate settings is not clear. The purpose of this study was to determine the speculations.

**Methods:** 1230 adult patients admitted to our hospital from 2005 to 2009 for CAP were reviewed retrospectively.

**Results:** The hospital mortality was 1.3%. Percentage mortality increased significantly with CURB-65 score and the increasing number of IDSA/ATS minor criteria present. The number of CURB-65 criteria or IDSA/ATS minor criteria patient had significant increased odds ratios for mortality of 7.547 and 2.711, respectively. The sensitivities of a CURB-65 score of ≥ 3 and the presence of at least 3 minor criteria in predicting mortality from CAP was only 25% and 37.5%, with specificities of 99.2% and 96%, respectively. However, the sensitivities and specificities of CURB-65 score of ≥ 2 and the presence of ≥ 2 minor criteria were 75% and 62.5%, and 91.8% and 85.6%, respectively. The area under the receiver operating characteristic curve for CURB-65 was 0.915 for predicting mortality, and the corresponding area for IDSA/ATS minor criteria was 0.805.

**Conclusions:** CURB-65 score predicted hospital mortality better than IDSA/ATS minor criteria, and a CURB-65 score of ≥ 2 or the presence of 2 or more minor criteria might be more valuable cut-off values for “severe” CAP in a low-mortality-rate setting.

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**Table 1. Hospital mortality and the patterns of minor criteria**

<table>
<thead>
<tr>
<th>Minor criteria</th>
<th>No. patients</th>
<th>No. (%) deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three strongest predictive values</td>
<td>21</td>
<td>7 (33.3)</td>
</tr>
<tr>
<td>Two of the three strongest predictive values plus another minor criterion</td>
<td>36</td>
<td>6 (16.7)</td>
</tr>
<tr>
<td>One of the three strongest predictive values plus other two minor criteria</td>
<td>78</td>
<td>6 (7.7)</td>
</tr>
<tr>
<td>Other three minor criteria</td>
<td>36</td>
<td>5 (8.3)</td>
</tr>
<tr>
<td>Total</td>
<td>171</td>
<td>22 (12.9)</td>
</tr>
</tbody>
</table>

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**P2481**

CURB-65 score predicted mortality in community-acquired pneumonia better than IDSA/ATS minor criteria in a low-mortality-rate setting

Qi Guo1, Hai-yan Li2, Yi-ping Zhou3, Ming Li4, Xiao-ke Chen5, Hui Liu5, Hong-lin Peng6, Hai-qiong Yu4, Xue Chen7, Nian Liu8, Li-bua Liang9, Qing-zhou Zhao10,11, Mei Jiang10,11. 1Department of Respiratory Medicine, Affiliated Fuzhou Hospital, Guangdong Medical College, Shenzhen, China; 2Department of Primary Care, Affiliated Fuzhou Hospital, Guangdong Medical College, Shenzhen, China; 3Department of Respiratory Medicine, Affiliated Fuzhou Hospital, Guangdong Medical College, Shenzhen, China; 4Department of Respiratory Medicine, Affiliated Fuzhou Hospital, Guangdong Medical College, Shenzhen, China; 5Department of Respiratory Medicine, Affiliated Fuzhou Hospital, Guangdong Medical College, Shenzhen, China; 6Department of Respiratory Medicine, Affiliated Fuzhou Hospital, Guangdong Medical College, Shenzhen, China; 7Department of Respiratory Medicine, Affiliated Fuzhou Hospital, Guangdong Medical College, Shenzhen, China; 8Department of Respiratory Medicine, Affiliated Fuzhou Hospital, Guangdong Medical College, Shenzhen, China; 9Department of Respiratory Medicine, Affiliated Futian Hospital, Guangdong Medical College, Shenzhen, China; 10Department of Radiology, Affiliated Futian Hospital, Guangdong Medical College, Shenzhen, China; 11Department of Radiology, Affiliated Futian Hospital, Guangdong Medical College, Shenzhen, China; 12Department of Radiology, Affiliated Futian Hospital, Guangzhou Medical University, Guangzhou, China; 13Department of Radiology, Affiliated Futian Hospital, Guangzhou Medical University, Guangzhou, China.

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**Conclusions:** CURB-65 score predicted hospital mortality better than IDSA/ATS minor criteria, and a CURB-65 score of ≥ 2 or the presence of 2 or more minor criteria might be more valuable cut-off values for “severe” CAP in a low-mortality-rate setting.

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**P2482**

Thrombin generation test – As a potential marker of severity and outcome of severe pneumonia with pulmonary sepsis

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**Background:** There is an important interaction between inflammatory mechanisms and coagulopathy in severe pneumonia (SP) with pulmonary sepsis. The aim. Determine the prognostic role of thrombin generation test (TGT) as a marker of severity in patients with SP with sepsis.

**Materials and methods:** 35 adults (18 years old or above) with SP and pulmonary sepsis were enrolled in the study. All patients were divided into two groups: survivors – 30 patients (85.7%, group 1) and died – 5 (14.3%, group 2) and stratified according to APACHE II score.

**Results:** According to TGT, the greater number of patients (84.6%) showed reduction in intensity of thrombin generation. We observed lengthening of Lag time...
of thrombin, reduction of Peak thrombin, and increase in tPeak, and in general - reducing endogenous thrombin potential (ETP) (table 1). Analysis of the average of the absolute values of thrombin generation curve showed that mean values of ETP and Peak thrombin remain below the reference in both groups, and Lag time and tPeak - higher than in control. In group 2, in comparison with the first one, peak thrombin was lower at 82.9%, tPeak was shorter by 15.1%, and ETP was reduced 3.9-fold.

When comparing patients according to severity, in group with APACHE II >20 (compared with APACHE II <10), reduced Peak thrombin by 71.8% and ETP by 58.2% were defined, while lengthening lag time at 70.7% and increasing tPeak by 234.4%.

Conclusion: According to our preliminary data, reducing the intensity of TGT in SP with pulmonary sepsis is associated with more severe course of the disease and can be regarded as a predictor of poor outcome.

P2483 Developing hospital admission criteria for electronic pneumonia decision support
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Rationale: Severity assessment tools that use objective data available in the electronic medical record to predict mortality include CURB-65, <CURB (an electronic version of CURB-65 using continuous variables), and A-DROP. We developed an electronic decision support tool for the emergency department that recommends admission for patients with 1) <CURB (30-day mortality estimate ≥ 5% 2) ≥3 severe acute community acquired pneumonia criteria (2007 IDSA/ATS), or 3) PaO2/FiO2 ratio ≥280. Our aim was to compare the tool’s admission rule to the mortality predictors.

Methods: We identified pneumonia patients by ICD-9 code plus radiograph in 7 emergency departments Dec 1, 2009-Dec 1, 2010. We extracted initial clinical features, triage information and mortality from the electronic medical record; physician identified multifactorial inpatients from radiograph reports. Simple agreement with hospital triage (outpatient versus inpatient) and mortality were compared.

Results: 57% of all patients were admitted (54% CAP and 76% HCAP) with a 30-day mortality of 5.5% (3.5% CAP 17% HCAP). Table shows simple agreement with triage and mortality. While the actual admission rate was 57% with 13 outpatient deaths, the admission rule would have resulted in a 48% admission rate with 9 outpatient deaths.

% Agreement

<table>
<thead>
<tr>
<th>All (N=2394)</th>
<th>CAP (N=2060)</th>
<th>HCAP (N=334)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triage %</td>
<td>Mortality %</td>
<td>Triage %</td>
</tr>
<tr>
<td>Admit Rule</td>
<td>76</td>
<td>57</td>
</tr>
<tr>
<td>CURB-65 ≥2</td>
<td>70</td>
<td>58</td>
</tr>
<tr>
<td>A-DROP ≥1</td>
<td>78</td>
<td>48</td>
</tr>
<tr>
<td>A-DROP ≥2</td>
<td>63</td>
<td>78</td>
</tr>
</tbody>
</table>

Conclusion: The tool’s admission rule agreed acceptably with observed triage and might lower admission rate with improved patient safety.

P2484 Risk factors predicting mortality in patients with lung abscesses
Shabia Gharial, Nusrat Idrises, Ashok Kumar, Nadeem Rizvi. Chest Medicine, Jinnah Post Graduate Medical Centre, Karachi, Sindh, Pakistan

Introduction: Lung abscesses continue to express high mortality in patients hospitalised with the disease.

Objectives: To identify the factors associated with increased mortality in patients diagnosed with lung abscess.

Methods: Retrospective study performed via hospital records on patients admitted with lung abscesses between January 2009 and January 2011 at the largest state-owned tertiary care centre in Karachi, Pakistan. Out of 41 patients hospitalised, 17 could not survive and were evaluated for factors to determine association with heightened mortality.

Results: Mortality due to lung abscess stood at 41.48% (17/41). Adult male patients were found to have a higher mortality with 13/17 (76.5%) expired patients being male. Majority (21/41, 51.2%) of the cases belonged to the 41-60 year old age group with highest mortality (9/17, 52.9%). Number of patients with blood sugar levels of ≥200 mg/dl who succumb to disease was 9/17, 52.9%. Patients with history of smoking, diabetes mellitus, and alcohol intake expressed mortality rates of 70.6%, 58.8%, and 17.6% respectively, while 29.4% of the mortalities were positive for Pseudomonas aeruginosa on sputum culture. A significant association was found between elevated mortality and low haemoglobin levels at time of admission; mortality was 76.5% (13/17, p<0.013) in patients with Hb between 7-10 mg/dl.

Conclusions: The risk factors involved with heightened mortality included male gender; older age; history of smoking, and diabetes. High blood sugar levels and detection of Pseudomonas aeruginosa on sputum cultures were also implicated. Hb level <10 mg/dl was a statistically significant predictive factor for increased mortality.

P2485 Thrombocytopenia predicts severity and mortality in CAP – Experience of developing country hospital
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Background: Platelets play role in inflammation and host defense mechanisms against microbial agents. We hypothesized that abnormal platelet count in CAP does predict severity and mortality. The objectives of this study were to determine the association of abnormal platelet count with the severity and outcome of CAP patients during their hospital stay.

Methodology: We conducted a retrospective cohort study of 293 consecutive patients admitted to a tertiary care hospital in Pakistan with CAP between January 2006 and December 2010. Patients with CAP who had abnormal platelet count at the time of presentation were placed in one group while those who had normal platelet count in other group. Dependent variable of the study was in hospital mortality.

Results: Thrombocytopenia was strongly associated with in hospital mortality (P = <0.05). It was also associated with complications like respiratory failure, need for mechanical ventilation and complicated para-pneumonic effusion.

Conclusion: Thrombocytopenia at presentation in patients with CAP predicts in hospital mortality. It is cost effective when compared to CRP. It is a good predictor of mortality for CAP in poor countries.

Abbreviations: CAP = Community Acquired Pneumonia. CRP = C Reactive Protein.

P2486 Clinical characteristics of immunocompetent patients with pulmonary cryptococcosis
Ho-Kee Yum, I-Nae Park, Sang Bong Choi, Young Min Lee, Sung Soon Lee, Hyek Pyo Lee, Soo Jeon Choi. Department of Internal Medicine, Paik Hospital, INHE University, Seoul, Korea

Objective: Pulmonary cryptococcosis typically occurs in immunocompromised patients, but can also occur in immunocompetent patients. According to the host’s immune status, inhaled spores may remain dormant in the lung or may spread to other parts. Thus, clinical manifestations of cryptococcosis can be highly variable, from asymptomatic pulmonary disease to life-threatening meningitis depending on the immunity. Our objective was to describe the clinical manifestations, radiologic findings, management and prognosis of pulmonary cryptococcosis in immunocompetent patients.

Methods: We retrospectively analyzed 12 cases of immunocompetent patients with pathologically proven pulmonary cryptococcosis during ten years.

Results: Mean patients age was 50 years (20-72 years) and 6 patients were male. The major clinical manifestations were cough (7 patients), chest pain (5 patients), and hemoptysis (1 patients). Four patients were asymptomatic. On CT findings, 10 patients showed single or multiple nodules (7 patients vs 3 patient), while 2 patients showed multiple consolidations. One patient was diagnosed by open lung biopsy, 11 patients by needle biopsy. Eight patients were treated with oral flucona-zole and 2 patients with itraconazole. Seven patients of 10 patients with treatment with oral antifungal agents showed completed resolution, 2 patients showed partial resolution, and one patient showed no interval change. During follow-up period, all patients showed favorable outcome without relapse.

Conclusion: These results suggest that pulmonary cryptococcosis was found in all-aged immunocompetent patients with no or mild symptoms. Also treatment with oral fluconazole or itraconazole could achieve favorable outcome.

P2487 WITHDRAWN
### P2488

**Weight of CURB-65 criteria for community-acquired pneumonia in a very low-mortality-rate setting**

Qi Guo1, Hai-yan Li2, Yi-ping Zhou1, Ming Li3, Xue-ke Chen1, Hai Liu1, Hong-lin Peng1, Hai-qiong Yu1, Xin Chen2, Nian Liu1, Li-hua Liang1, Qing-zhou Zhao3, Mei Jiang4, 1Department of Respiratory Medicine, Affiliated Futian Hospital, Guangdong Medical College, Shenzhen, China; 2Department of Primary Care, Affiliated Futian Hospital, Guangdong Medical College, Shenzhen, China; 3Department of Radiology, Affiliated Futian Hospital, Guangdong Medical College, Shenzhen, China; 4Guangzhou Institute of Respiratory Diseases (State Key Laboratory of Respiratory Diseases), First Affiliated Hospital, Guangzhou Medical University, Guangzhou, China

**Background:** The CURB-65 score is a simple well validated tool for the assessment of severity in community-acquired pneumonia (CAP). Weight of each criterion in very low-mortality-rate settings is not clear.

**Objective:** To determine the weight.

**Methods:** 1230 adult patients admitted to our hospital from 2005 to 2009 for CAP were reviewed retrospectively.

**Results:** 30-day mortality rose sharply from 0%, 0.8%, 8.2% and 16.7%, respectively, for patients with CURB-65 scores of 0, 1, 2 and 3 to 100.0% for patients with the scores of 4 (p<0.001). Confusion had the strongest association with mortality.

**Table 1. Association of CURB-65 criteria with 30-day mortality (n=1230)**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alive (%)</th>
<th>Dead (%)</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confusion</td>
<td>18 (81.8)</td>
<td>4 (18.2)</td>
<td>22.148 (6.516–75.288)</td>
</tr>
<tr>
<td>Urea &gt;7 mmol/L</td>
<td>70 (49.7)</td>
<td>8 (10.3)</td>
<td>16.343 (5.957–44.838)</td>
</tr>
<tr>
<td>Respiratory rate ≥30 breaths/min</td>
<td>28 (93.3)</td>
<td>2 (6.7)</td>
<td>6.051 (1.313–27.896)</td>
</tr>
<tr>
<td>Low blood pressure</td>
<td>172 (97.7)</td>
<td>4 (2.3)</td>
<td>2.019 (0.646–6.331)</td>
</tr>
<tr>
<td>Age ≥65 yrs</td>
<td>322 (95.8)</td>
<td>14 (4.2)</td>
<td>19.391 (4.383–85.795)</td>
</tr>
</tbody>
</table>

Low blood pressure was not associated with mortality. Confusion, urea >7 mmol/L and age ≥65 yrs showed independent relationships with mortality (odds ratio, 11.537, 5.989 and 10.462, respectively). Urea >7 mmol/L was most strongly associated with sequential organ failure assessment (SOFA) scores. Confusion was in closest relation to hospital length of stay. Age ≥65 yrs had the strongest association with costs.

**Conclusions:** The individual CURB-65 criteria were of unequal weight in predicting 30-day mortality. SOFA scores, hospital length of stay and costs in a very low-mortality-rate setting, and low blood pressure was not associated with mortality.

### P2489

**Pulmonary CT findings of visceral larva migrans due to Ascaris suum**

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**Objective:** To retrospectively evaluate the CT findings of pulmonary involvement in patients with visceral larva migrans due to Ascaris suum.

Methods: Institutional review board approval was obtained, and informed consent was waived. Chest CT scans obtained between January 1994 and December 2007 in 35 patients with Ascaris suum were retrospectively evaluated by three chest radiologists. In 4 patients who underwent surgical or transbronchial biopsy, comparisons of the CT images with the actual specimens were performed.

**Results:** On CT scans, abnormal findings were seen in 30 patients. The most common abnormality consisted of nodules (n=20) in which the majority had a halo of ground-glass attenuation (n=18), followed by ground-glass attenuation (n=19), and interlobular septal thickening (n=15). These abnormalities were predominantly seen in the peripheral lung (n=25). Of the 7 patients who underwent follow-up CT scans, nodules (n=6) and ground-glass attenuation (n=5) had migrated in 4 patients. Pathologically, these findings corresponded to marked eosinophilic infiltration into the interstitium.

**Conclusions:** These CT findings are considered to be suggestive of thoracic involvement in patients with visceral larva migrans due to Ascaris suum.
the cellular immunity, the increase of the level of IgG to 9.88±0.41 l/l with the following return to the previous level, and also the real reduction of the level of IgE to 69.2±5.5 among the patients with exogenous asthma.

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Risk factors, etiology and prognosis of adult patients with hospital -acquired pneumonia in Shanghai
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Objective: To investigate clinical features, risk factors, drug resistance, and clinical outcomes of hospital-acquired pneumonia (HAP) in Shanghai.

Methods: From November 2007 to December 2009, HAP was observed and prospectively studied in Shanghai seven large general hospitals. Clinical data and etiology of pneumonia were recorded. Blood and sputum cultures, identification of bacteria in specimen and drug sensitivity test were performed.

Results: We included 204 patients (mean age 68.07±16.61 years [± SD], 58.3% more than 70 years old) mainly from surgical wards, surgical ICU, medical wards, and medical ICU. Patients were complicated with cerebral vascular disease (19.61%), diabetes mellitus (14.22%), or abdominal surgery (11.76%). Ventilator-associated pneumonia occurred in 20.6% of the cases. Total mortality was 15.69%. Increased heart rate, decreased arterial PH, hypoxia, high glucose, increased plasma creatinine and vasopressor use were associated with the poor outcome in patients with HAP. In all bacterial isolates from HAP, 64.90% were gram-negative bacilli bacteria, including Acinetobacter baumannii, Pseudomonas aeruginosa, Klebsiella pneumoniae, and Escherichia coli. 26.5% of the isolates were Staphylococcus aureus and the rate of MRSA was 65.4%.

Conclusion: The elderly, cerebrovascular diseases, and diabetes are risk factors of HAP and septic shock is the most important complication associated with poor prognosis of HAP. In this setting, Acinetobacter baumannii, Pseudomonas aeruginosa, Klebsiella pneumoniae, Escherichia coli, and Staphylococcus aureus (MRSA 60%) should be considered as the common etiologic pathogens of HAP.