PRS3

A VALIDATION STUDY ON USING MORTALITY RISK STRATIFICATION TOOL TO STRATIFY ECONOMIC RISK IN PATIENTS WITH ACUTE EXACERBATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (AECOPD)

Tabak YP[1], Sun X[1], Johannes RS[1], Gupta V[1], Darin R[1], Shorr AF[2]
[1]Cardinal Health, Marlborough, MA, USA, [2]Washington Hospital Center, Washington, DC, USA

OBJECTIVES: AECOPD is a leading cause of hospitalization. A valid and easy-to-use risk stratification tool applicable not only for clinical but also economic outcomes would facilitate population-based outcome studies. We sought to validate an AECOPD clinical risk stratification tool previously reported and determine its utility for economic outcomes. **METHODS:** We analyzed 57,791 AECOPD admissions in 2004–2005 across 191 USA hospitals. The AECOPD risk stratification tool identified three factors with the highest discrimination of mortality risk: BUN > 25 mg/dl, Altered mental status, and Pulse > 109 per minute (BAP). Based on the number of risk factors present on admission, the BAP classified patients into four risk categories, ranging from Low (0 risk factors) to High (3 factors). We examined mortality, length of stay (LOS), and cost outcomes using the BAP classification algorithm. The cost outcome was calculated using the Centers for Medicare and Medicaid Services (CMS) cost/charge ratio for each hospital for a given calendar year. **RESULTS:** Overall, median age was 72 (IQR: 63–79) and 55% were women. Crude mortality was 2.4%. The prevalence for each of the BAP risk categories was 51.6% (low), 39.7% (Intermediate I), 7.9% (Intermediate II), and 0.8% (High). The corresponding mortality was 1.0%, 2.7%, 8.2%, 17.6%; the mean LOS was 4.7, 5.4, 6.6, 6.8 days; the mean cost were $5,700, $6,900, $9,400, $11,400 respectively. The trend-analyses revealed a graded association between number of BAP risk factors and worsening outcomes. For every addition of BAP risk factors, there was an exponential increase in mortality risk (OR: 2.89, CI: 2.70–3.09), 0.81 day increase of LOS (CI: 0.76–0.87), and $1600 increase of cost (CI: $1500–$1700). P-values for all trends were <0.0001. **CONCLUSIONS:** The BAP classification tool accurately differentiates mortality risk. It may also be used to identify high risk cohorts for prolonged LOS and excess cost among hospitalized AECOPD patients.

PRS4

PROGNOSTIC FACTORS OF PATIENTS TRANSFERRED TO CHRONIC RESPIRATORY CARE WARD

Hung MC[1], Yan YH[2], Lin MS[3], Chen CR[3], Wang JD[4]
[1]National Taiwan University and National Taiwan University Hospital, Taipei, Taiwan, [2]National Taiwan University and Chia-Yi Christian Hospital, Chiayi City, Taiwan, [3]Chia-Yi Christian Hospital, Chiayi, Taiwan, [4]National Taiwan University, Taipei, Taiwan

OBJECTIVE: To determine factors predictive to survival for patients transferred to respiratory care ward after prolonged mechanical ventilation. **METHODS:** We reviewed medical records in a hospital in southern Taiwan between January 1, 2003 and December 31, 2006 to collect clinical data while transferred to respiratory care ward. The National death certification database of Taiwan was linked to ascertain the date of death. Kaplan-Meier estimation was performed for survival analysis; Cox proportional hazards model was constructed based on various patient characteristics, including age, gender, education, co-morbidity with diabetes, stroke, chronic obstructive pulmonary disease, end stage renal disease and blood platelet. A strategy of backward selection was taken. **RESULTS:** Two hundred and eighty-seven patients who required chronic mechanical ventilation in intensive care unit were included in this study. Their median age was 77 years, 56% were male. Survival rate of 90 days and 180 days following transfer to respiratory care ward were 70 and 50%, respectively. After taking age, gender, and various co-morbidity into consideration, the adjusted hazard ratios for end stage renal disease and abnormal blood platelet count were 1.56 (95% confidence interval (CI), 1.12–2.15) and 1.40 (95%CI, 1.04–1.90), respectively. **CONCLUSION:** Overall survival of patients with prolonged mechanical ventilation was poor, especially for patients with end stage renal disease or/and abnormal blood platelet count.

PRS5

IMPACT OF TOBACCO SMOKE EXPOSURE ON EXACERBATION FREQUENCY, SEVERITY, AND INHALER USE IN ASTHMATIC CHILDREN

Everett BL, Hong SH
University of Tennessee Health Science Center, Memphis, TN, USA

OBJECTIVE: Each year, asthma accounts for 3 million clinic visits, 550,000 emergency room visits, 150,000 hospitalizations, and 150 deaths in children under fifteen. Literature suggests that asthmatic children exposed to tobacco smoke experience complications of greater frequency and severity than those unexposed. This study proposes to test the hypotheses that asthmatic children exposed to household tobacco smoke experience more frequent and severe exacerbations and have greater inhaler use than those unexposed. **METHODS:** NHANES' 2003–2004 database was queried to identify a cohort of 421 asthmatic children (ages 0–17) with current diagnosis of asthma and complete demographic, examination, and questionnaire data. The cohort was analyzed based on exposure to household tobacco smoke. Logistic regression was used to examine emergency room (ER) visit, wheezing frequency, and recent inhaler use. **RESULTS:** Results revealed no significantly greater frequency or severity of asthma outcomes in children exposed to tobacco smoke. Household smoke exposure was only significantly associated with inhaler use. Oddly, asthmatic children living in smoking households were highly unlikely to have used an inhaler in the past month (Odds Ratio = 0.493, p = 0.0406). Tobacco smoke exposure was associated with higher odds of wheezing attacks, but lower odds of ER visit (though neither was significant). **CONCLUSION:** Despite results, opportunities to improve asthma outcomes exist. In the sample, children in smoking households were more likely to be African American, female, live below the poverty level, and be exposed to other indoor pollutants that trigger asthma exacerbations. Initiatives targeted to this group may improve asthma outcomes through education on reduction/elimination of unnecessary indoor allergens. Study limitations include small sample size, potential recall bias due to self or parental-report, lack of data related to family smoking and asthma history and other exposures, and time variation in data collection.

RESPIRATORY-RELATED DISORDERS—Cost Studies

PRS6

A COST-EFFECTIVENESS MODEL FOR SMOKING CESSATION THERAPY USING VARENICLINE

Viswanathan S, Neville W, Patel E, Raparla S, McGhan WF
University of the Sciences in Philadelphia, Philadelphia, PA, USA

OBJECTIVE: Smoking, a leading cause of morbidity and mortality in the US, results in approximately 440,000 deaths, economic costs of $96.8 billion, and losses of more than 5.6 million years of potential life each year. The aim of this study was to compare the costs and effectiveness of the new drug varenicline