News Release

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Location: Area J (Hall B2-C, Ground Level), San Diego Convention Center

Dyspnea Increases Long-Term Mortality Risk

ATS 2014, SAN DIEGO — Individuals with dyspnea, or shortness of breath, have an increased long-term mortality risk compared with individuals without dyspnea, according to a new study presented at the 2014 American Thoracic Society International Conference.

“Dyspnea may be an indicator of serious underlying disease,” said lead author Gene Pesola, MD, MPH, of Columbia University in New York. “In our study of nearly 12,000 individuals who were followed for up to 12 years, we found that those who had dyspnea at baseline had a greater risk of dying, even after adjusting our analyses for other risk factors for mortality, including smoking.”

The population-based study included 11,746 subjects who were recruited between 2000 and 2002 in rural Bangladesh. During 12 years of follow-up, there were 782 deaths. Before adjustment for other possible risk factors, subjects with dyspnea at baseline had a 2.73-fold increased risk of dying compared with those without dyspnea at baseline.

After adjustment for age, gender, education, body mass index (BMI), smoking, arsenic concentrations in drinking water and blood pressure, dyspnea remained associated with a significant 2.10-fold increased risk of death. When nonsmokers were analyzed separately, dyspnea was associated with a 1.9-fold increased risk of death.

Smoking, male sex, and elevated BMI were also associated with an increased mortality risk.

“Dyspnea may be a sign of lung disease, heart disease, or a number of other potentially life-threatening conditions,” said Dr. Pesola. “Identifying the underlying causes of dyspnea in these individuals might offer an opportunity to reduce the high risk of mortality associated with this condition.”
Abstract 49885  
Dyspnea As A Predictor Of All-Cause Mortality In Rural Bangladesh: A Population-Based Prospective Study  
Type: Scientific Abstract  
Category: 01.20 - Occupational and Environmental Respiratory Diseases (EOH)  
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Abstract Body  
**Rationale:** Dyspnea as determined by questionnaire is reliable (1) and may signify serious disease resulting in increased mortality over-time.  

**Methods:** Over 2000-2002 11,746 subjects (aged 18-75) were recruited and followed up to 12-years. Dyspnea, determined by questionnaire at baseline recruitment (1), was the exposure and mortality assessed during follow-up was the outcome. Cox proportional hazards regression models were used to estimate hazard ratios (HR) and 95% confidence intervals for the association between dyspnea at baseline and mortality during follow-up. Both dyspnea and mortality data were collected by trained physicians. The relevant covariates adjusted in the regression model included age, gender, education, body mass index (BMI), smoking, arsenic concentrations in drinking water and blood pressure. A Kaplan-Meier survival curve was generated and the logrank test evaluated whether there was a difference in survival between groups.  

**Results:** There were 782 deaths over 12 years. The survival curve showed a separation between groups with significant logrank test (p < 0.001). The crude HR was 2.73 (2.27 – 3.28) for an increased risk of death with dyspnea at baseline relative to no dyspnea. The HR after adjustment for age, gender, arsenic, education, blood pressure, BMI, and smoking was still elevated at 2.10 (1.74 – 2.52). Smokers, adjusting for all factors, also had a 1.58-fold (1.27–1.65) greater risk of death relative to nonsmokers and males were 1.39-fold (1.09–1.73) more likely to die relative to females. To eliminate potential confounding effects of smoking, nonsmokers (n=7440) were analyzed separately. The Kaplan-Meier curve and logrank test (p < 0.001) were significant. The adjusted HR in nonsmokers was 1.90 (1.32-2.74), consistent with a 1.9-fold greater risk of death in those with dyspnea.
relative to no dyspnea. Males were 1.68-fold (1.24-2.29) more likely to die than females. In addition, those with an abnormal BMI had a 1.38-fold (1.06-1.80) greater risk of death. Finally, higher level of education seemed mildly protective with HR 0.95 (0.91-0.98).

**Conclusion:** Those with dyspnea have an almost two-fold greater risk of all-cause mortality over twelve-years. This easily elicited symptom should be targeted for increased health evaluation to determine etiology to minimize morbidity/mortality.

**References.**
