The Association between blood glucose and length of hospital stay due to Acute COPD exacerbation
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Context: Recent evidence suggests that chronic obstructive pulmonary disease (COPD) complications are more common among patients with metabolic syndrome. However, little evidence exists concerning hyperglycemia specifically and outcomes associated with acute COPD exacerbations (AECOPD).

Objective: The purpose of this study was to examine blood glucose (BG) during AECOPD hospitalization and clinical outcomes.

Design: Retrospective cohort study

Study participants and setting: We studied 215 hospitalized patients (40-80 years of age) with a physician-validated AECOPD diagnosis from 1/1/2004 to 12/31/2008 at the Marshfield Clinic who met the Global Initiative for Chronic Obstructive Lung Disease criteria for COPD, had an AECOPD diagnosis at admission and discharge, and a BG ascertained within 6 hours of admission, and ≥2 BG measurements during hospitalization.

Outcomes: Length of hospitalization, 30 day hospital readmission, 90 day all cause mortality,

Results: Mean hospitalization was 3 days. Adjusting for age and diabetes status, higher BG was associated with shorter hospitalization (OR: 0.72, 95% CI: 0.54-0.96, p-value: 0.03). Forty one patients (19%) were re-hospitalized within 30 days of discharge from their index hospitalization. Adjusting for previous covariates and length of hospitalization, BG was not associated with 30 day hospital readmission (OR: 0.82, 95%CI: 0.54-1.22, p-value: 0.32). Nine patients (4%) died within 90 days of their index hospitalization. Adjusting for previous covariates and readmission, increased BG was associated with decreased odds of 90 day all cause mortality (OR: 0.30, 95% CI: 0.11-0.86, p-value: 0.02).

Conclusion: These findings suggest that BG during hospitalization may be indicative of overall health and therefore may be a useful prognostic tool. This explanation is reasonable in light of the fact that 96% of these patients received corticosteroids during hospitalization. Perhaps BG response (or lack thereof) in light of hyperglycemic agents is a proxy for a patient’s overall physiological status.