

Admission C-Reactive Protein Serum Levels and In-Hospital Mortality in the Elderly Admitted to the Acute Geriatrics Department

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Abstract : Background: C-reactive protein (CRP) serum levels are commonly measured in hospitalized patients. Elevated admission CRP serum levels and in-hospital mortality has been seldom studied in the general population of elderly patients admitted to the acute Geriatrics department. Methods: A retrospective cross-sectional study was conducted at a tertiary medical center. Included were all elderly patients (age 65 years or more) admitted to a single acute Geriatrics department from the emergency room between April 2014 and January 2015. CRP serum levels were measured routinely in all patients upon the first 24 hours of admission. A logistic regression analysis was used to study if admission CRP serum levels were associated with in-hospital mortality independent of age, gender, functional status, and co-morbidities. Results: Overall, 498 elderly patients were included in the analysis: 306 (61.4%) female patients and 192 (38.6%) male patients. The mean age was 84.8 ± 7.0 years (median: 85 years; IQR: 80-90 years). The mean admission CRP serum levels was 43.2 ± 67.1 mg/l (median: 13.1 mg/l; IQR: 2.8-51.7 mg/l). Overall, 33 (6.6%) elderly patients died during the hospitalization. A logistic regression analysis showed that in-hospital mortality was independently associated with history of stroke ($p < 0.0001$), heart failure ($p < 0.0001$), and admission CRP serum levels ($p < 0.0001$) - and to a lesser extent with age ($p = 0.042$), collagen vascular disease ($p=0.011$), and recent venous thromboembolism ($p=0.037$). Receiver operating characteristic (ROC) curve showed that admission CRP serum levels predict in-hospital mortality fairly with an area under the curve (AUC) of 0.694 ($p < 0.0001$). Cut-off value with maximal sensitivity and specificity was 19.7 mg/L. Conclusions: Admission CRP serum levels may be used to predict in-hospital mortality in the general population of elderly patients admitted to the acute Geriatrics department.

Keywords : c-reactive protein, elderly, mortality, prediction

Conference Title : ICI 2017 : International Conference on Inflammation

Conference Location : Amsterdam, Netherlands

Conference Dates : May 14-15, 2017