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Title: Blood urea nitrogen/ albumin ratio: Is it a new predictor for prognosis of community-acquired pneumonia?

Dr. Eylem 15706 Akpinar drevrimeylem@yahoo.com MD ¹, Dr. Derya 15707 Hosgün deryahosgun@gmail.com ¹, Dr. Beyza 15708 Doganay beyzadoganay@gmail.com ² and Prof. Dr Meral 15709 Gulhan meralgulhan@yahoo.com ¹. ¹ Chest Diseases, Ufuk University, Ankara, Turkey and ² Biostatistics, Ankara University, Ankara, Turkey .

Body: Background: Community-acquired pneumonia (CAP) is an important cause of morbidity and mortality. CURB-65 (confusion, urea nitrogen, respiratory rate, blood pressure, ≥65 years) and pneumonia severity index (PSI) are the most frequently used scoring scales to assess the disease severity However, their accuracy is lower regarding the evaluation of mortality and need for ICU treatment. Aim was to evaluate the role of the BUN/Alb ratio in the prediction of disease severity and one-month mortality. Methods: The study included patients hospitalized for CAP. Venous blood samples were obtained to calculate the ratio of BUN/Alb. The correlation of BUN/Alb ratio with the requirement of the intensive care unit (ICU), development of complications and mortality within one month was evaluated. Results: 216 patients were enrolled in the study. Patients who needed ICU treatment had a higher BUN/Alb ratio than those who did not (P=0.02). Multiple logistic regression analysis revealed that BUN/Alb ratio was not an independent risk factor for the development of complications, mortality and for ICU treatment. Low albumin level was an independent risk factor for the need of ICU treatment (OR: 0.190, 95% CI: 0.072 to 0.501. P=0.001). Lower albumin levels and poor PSI were independent predictive factors for the development of complications (OR: 0.204, 95% CI: 0.067 to 0.627, P=0.005; OR: 7.444, 95% CI: 2.565 to 21.605, P<0.0001, respectively). Conclusions: The CAP patients who have higher BUN/Alb ratio are under higher risk of the need for ICU. Larger studies are neccessary to evaluate the exact role and the cutt-off value of the BUN/Alb ratio in predicting the severity and mortality of CAP.