Effect of Mild Normocytic Normochromic Anemia on Hospitalization and Mortality in Thai Elderly

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Background: Anemia has high prevalence in elderly and may be associated with higher mortality and hospitalization. Prognosis of anemic patients also depends on etiology and degree of anemia. However, the impact of mild unexplained anemia in Thai elderly remains uncertain.

Objective: We aimed to determine the effect of mild normocytic normochromic anemia on hospitalization and mortality in Thai elderly.

Methods: Outpatient electronic medical records of Ramathibodi Hospital were retrospectively reviewed from January 2013 to October 2017. We randomly selected 330 patients with mild normocytic normochromic anemia and matched them with 330 non-anemic subjects using age, sex, and renal function. Primary outcomes were 1) death, 2) composite of death or hospitalization, and 3) composite of death, hospitalization, or emergency visit. We used univariable and multivariable Cox proportional hazard regression with age, sex, renal function, and Charlson Comorbidity Index as covariates to analyze the association between anemia and outcomes.

Results: Overall median follow-up time was 4.14 years. The incidence rate of 3 primary outcomes was 0.71, 4.44 and 5.23 events/person-year, respectively. Hazard ratios of anemia from univariable analyses for the 3 outcomes were not statistically significant (0.63(95%CI 0.24-1.63), 0.81(95%CI 0.56-1.17), and 0.88(95%CI 0.63-1.24)). All multivariable adjusted hazard ratios of anemia were also not significant.

Conclusion: Mild normocytic normochromic anemia in elderly is not associated with higher mortality or hospitalization. Further study is recommended if routine screening for anemia in asymptomatic elderly is of any benefits.

Keywords: Anemia, Elderly, Mortality, Hospitalization