中文題目：慢性腎臟病患身體組成與血色素濃度之相關性

英文題目：Association of Body Composition with Hemoglobin Concentrations in Patients with Chronic Kidney Disease

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Background: CKD patients with a high body mass index (BMI) are less likely to experience severe anemia. However, the association of body composition with hemoglobin concentrations in patients with CKD has not been well characterized. It is unclear whether increased lean mass or body fat confers the erythropoietic advantage.

Method: Body composition was derived from the impedance data based on a three-compartment model (lean tissue mass, adipose tissue mass, and overhydration) using the Body Composition Monitor, a novel bioimpedance spectroscopy device. Lean mass and body fat were expressed as the lean tissue index (LTI) and fat tissue index (FTI), respectively.

Results: A total of 326 patients age (66±13 years) with stage 3–5 CKD were included in the analysis. Patients with hemoglobin concentrations below median (11.6 g/dL) were older, tended to be female and diabetic, had significantly lower BMI, LTI, eGFR, and serum albumin levels, but had significantly higher overhydration, proteinuria, and IL-6 levels compared to those with hemoglobin concentrations above median. LTI correlated positively but overhydration correlated negatively with hemoglobin. When patients were stratified into male and female groups and analyzed separately, LTI correlated positively with hemoglobin in male while FTI correlated positively with hemoglobin in female patients. Overhydration correlated negatively and strongly with either male or female patients. In a stepwise regression analysis, LTI, FTI, and overhydration, in addition to male sex and eGFR, were all independently associated with hemoglobin concentrations.

Conclusion: All components of body composition are closely associated with hemoglobin concentrations in patients with CKD. Determination of body composition may aid in the assessment of anemia. Appropriate nutritional, pharmacological, and exercise interventions may have positive effects on body composition and benefit CKD patients with anemia.