中文題目：糖尿病慢性腎臟病第 3-4 期糖化血色素變動性越大較慢進展至透析

英文題目：Greater HbA_{1C} Variability is Associated with Decreased Progression to Dialysis in Type 2 Diabetes with Chronic Kidney Disease Stage 3-4

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Background: Diabetic nephropathy is one of the major complications of diabetes mellitus and one of the major reasons for end-stage renal disease (ESRD). In advanced chronic kidney disease (CKD), less is known about the predictive value of glycosylated hemoglobin (HbA_{1c}) variability. The aim of this study is to assess whether HbA_{1c} variability is associated with progression to ESRD in diabetic patients with CKD stage 3-5, and tests whether different CKD stages affected these associations.

Materials and Methods: This longitudinal study enrolled 388 diabetic patients with CKD stage 3-5. Intra-individual HbA_{1C} variability was defined as standard deviation (SD) of HbA_{1c}. The renal end point was defined as commencement of dialysis. The study patients were stratified into 3 groups according to tertiles of SD of HbA_{1C} (< 0.43, ≧0.43 – < 0.89, and ≧0.89%).

Results: During the median follow-up period of 3.5 years, 108 patients entered dialysis. In an adjusted Cox model, the highest tertile of HbA_{1c} SD (tertile 3 *vs.* tertile 1) was associated with a decreased renal end point (hazard ratio, 0.175; 95% confidence interval, 0.059–0.518; $p = 0.002$) in patients with HbA_{1c} ≧ 7% and CKD stage 3-4. But this association was not seen in those with HbA_{1c} < 7% and CKD stage 5. Further subgroup analysis in patients with HbA_{1c} ≧ 7% and CKD stage 3-4 showed that the highest two tertiles of HbA_{1c} SD were associated with a decreased renal end point in the group with downward HbA_{1c} trend, but not in upward HbA_{1c} trend.

Conclusions: Our results demonstrated that greater HbA_{1c} variability with downward HbA_{1c} trend, which may be related to intensive diabetes control, is associated with a decreased risk for progression to dialysis in patients with CKD stage 3-4 in poor glycemic control ($HbA_{1c} \geqq 7\%$), but not in CKD stage 5. Our results support the potential role of aggressive glycemic control on clinical outcomes and highlight the importance in diabetic patient with CKD stage 3-4.

Key words: HbA_{1C} variability; chronic kidney disease; end-stage renal disease