Abstract: Diabetics with end-stage renal disease (ESRD) exhibit abnormal life span of erythrocytes, and thus, HbAlc is not necessarily a good indicator for blood glucose control. The present study was conducted to reaffirm this point and determine whether glycated albumin (GA) can be used instead of HbAlc.

The following three groups of patients with diabetes served as subjects: 49 predialysis patients with ESRD (predialysis group), 37 patients with ESRD on dialysis (dialysis group), and 40 patients without nephropathy (non-dialysis group). The profile set mean blood glucose was calculated by measuring blood glucose levels seven times a day. The relationship of profile set mean blood glucose with HbAlc and GA levels was then investigated.

Corrected HbAlc levels were calculated by applying the profile set mean blood glucose of each ESRD patient to the regression formula for the HbAlc of non-dialysis patients. The actual and corrected HbAlc levels for the predialysis patients were 5.4 ± 1.1 and 7.9 ± 1.1%, respectively, while those for the dialysis patients were 5.6 ± 1.0 and 7.5 ± 0.9%, respectively (p<0.0001). The changes in GA levels in relation to the blood glucose control in the dialysis patients matched those in non-dialysis patients.

HbAlc levels for diabetics with ESRD were lower than indicated by their blood glucose control. When assessing blood glucose control based solely on HbAlc, erroneous results may be obtained. In such cases, GA may be used instead of HbAlc. J. Med. Invest. 53:223-228, August, 2006

Keywords: glycohemoglobin, glycated albumin, hemodialysis, daily profile of blood glucose, life span of erythrocyte
Relationship between blood glucose control and HbAlc in ESRD patients

Comparison of erythrocyte life span between the ESRD and non-dialysis patients

Relationship between blood glucose control and GA levels in the ESRD patients
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