

**GLYCATED ALBUMIN VERSUS GLYCATED
HEMOGLOBIN IN DIABETIC PATIENTS WITH
CHRONIC KIDNEY DISEASE**

Thesis

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(Internal Medicine)**

by

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Summary

Glycated albumin (GA) is thought to more accurately reflect glycemic control status in diabetic patients with advanced CKD or ESRD on HD than glycated hemoglobin (HbA1c), because the latter can be influenced by various clinical factors such as reduced red-blood cell lifespan, recent transfusions, iron deficiency, metabolic acidosis or frequent erythropoietin injection. So, HbA1c tends to underestimate the glycemic status.

To test this, HbA1c and GA were measured in 75 Egyptian patients: 25 were ESRD on HD (group I), 25 were CKD at different stages (group II), and 25 non-diabetic but ESRD on HD (group III). It was found that GA/HbA1c ratio was significantly increased in dialysis patients (3.8 ± 0.38 %) and CKD patients (3.6 ± 0.2 %), compared with the control (2.7 ± 0.5 %), which is consistent with the reported GA/HbA1c ratio of approximately 3 %.

Also, in Group I and II, the proportions of glycemic control that were based on the HbA1c values, were significantly different from those that were based on the GA values (p -value < 0.001). On the basis of the regression line between GA or HbA1c and FBS in the study subjects, the GA of 24% reasonably categorized into a poor category was reflected by the FBS of 150 mg/dl. However, categorization of the HbA1c of 8% into a poor category definitely was an underestimation, as reflected by FBS as high as 190 mg/dl. So, HbA1c may underestimate glycemic control in diabetic patients with CKD and ESRD on HD. In these patients, GA may

reflect the reliable glycemic control status and should be the preferred marker of it.