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When the HbA1c does not tell us the truth...

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Background: Type-2 diabetes(DM2) is a chronic disease with high prevalence and high mortality resulting from micro and macrovascular complications caused by hyperglycemic state. The risk of complications in diabetic patients is inversely proportional to glycemic control, as determined by HbA1c levels.

Case Description: 70 years old women, widow, illiterate, reformed at stage 8 of Duvall life cycle. DM2 diagnosed and treated for the past 6 years, involving hypertension, combined dyslipidemia and class-I obesity. She is treated with bisoprolol 2.5mg id, clonazepam 2mg, enalapril-lercanidipin 20/10mg and metformin-glibenclazid 2.5/500mg. At 07/01/2014, she presented the following analytical results HbA1c=4,6% and fasting glycemia=142mg/dl. The hematocrit showed no change and renal function and lipid record were normal. There was no symptomatic hypoglycemia story. in consultation capillary blood glucose value was 213mg/dl. in view of this low HbA1c value, we decided to replace metformin-glibenclazid 2.5/500mg to metformin 500mg, with consultation marking three months later. At 20/04, HbA1c value was 5% and fasting blood glucose value was 235mg/dl. The patient told us that at home blood glucose values were always greater than 200mg/dl. in view of the poor correlation between HbA1c and blood glucose values, it was requested an electrophoresis of hemoglobin. She returns in 26/05 with the following

Results: HbA1-57%; HbA2-2.1%; HbF-0.3%; HbS-0%; HbD-36.7%. She maintained high levels of blood sugar, so we decided to increase metformin. We recommended the patient to bring the ambulatory recording of blood glucose levels with more frequent measurements to adjust the medication.

Discussion: HbA1c is not always adequate to evaluate the degree of glycemic control in the diabetic patients. Hemoglobin variants can adversely affect the value of HbA1c by high turnover erythrocyte present in these conditions. in these cases, alternative strategies are needed to monitor blood glucose and therapeutic efficacy, as ambulatory recording of blood glucose fasting and/or postprandial.