



ORIGINAL ARTICLE

Determinants of adherence to hypoglycemic agents and medical visits in patients with type 2 diabetes mellitus[☆]

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Received 2 April 2017; accepted 21 August 2017

KEYWORDS

Diabetes control;
Treatment adherence;
Hypoglycemic agents

Abstract

Aim: To assess glycemic control in diabetic patients, to measure the impact on such control of adherence to hypoglycemic agents and to medical visits, and to explore factors that allow for predicting adherence.

Methods: Study of historical cohorts of diabetic patients. The proportion of patients who achieved the target HbA_{1c} levels was estimated. Adherence was assessed using the Haynes-Sackett test. Change in HbA_{1c} from the first to the last visit, adherence, and attendance to visits were analyzed according to comorbidities, cardiovascular risk factors, and treatments used.

Results: The study sample consisted of 639 patients (mean follow-up time, 11.1 ± 11.2 months), of whom 66.6% achieved target HbA_{1c} levels. Change in HbA_{1c} from the first to the last visit was explained in 54.2% of patients by baseline HbA_{1c} ($p < 0.001$), in 13% by treatment adherence ($p < 0.001$), and in 9.6% by visit adherence ($p < 0.001$). Non-insulinization ($p = 0.011$) and smoking cessation ($p = 0.032$) predisposed to greater adherence. Insulinization ($p = 0.019$) and lack of diabetes education ($p = 0.033$) predisposed to visit non-compliance.

[☆] Please cite this article as: García Díaz E, Ramírez Medina D, García López A, Morera Porrás ÓM. Determinantes de la adherencia a los hipoglucemiantes y a las visitas médicas en pacientes con diabetes mellitus tipo 2. Endocrinol Diabetes Nutr. 2017. <https://doi.org/10.1016/j.endinu.2017.08.004>

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<http://dx.doi.org/10.1016/j.endien.2017.08.015>

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PALABRAS CLAVE

Control diabetes;
Adherencia
terapéutica;
Hipoglucemiantes

Conclusions: Improvement in HbA_{1c} is determined by baseline HbA_{1c}, treatment adherence, and attendance to visits. Patients on insulin have poorer adherence and are more likely to miss the appointments, those who stop smoking adhere more to hypoglycemic agents, and those given therapeutic education are more likely to keep the appointments.

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Determinantes de la adherencia a los hipoglucemiantes y a las visitas médicas en pacientes con diabetes mellitus tipo 2

Resumen

Objetivo: Valorar el control glucémico de pacientes diabéticos, medir la influencia en este control de la adherencia a los hipoglucemiantes y a las visitas médicas, y explorar factores que permitan predecir esta adherencia.

Métodos: Estudio de cohortes históricas de pacientes diabéticos. Se midió el porcentaje que alcanzó una HbA_{1c} dentro del objetivo. Se valoró la adherencia mediante la pregunta de Haynes-Sackett. Se estudiaron el cambio en la HbA_{1c} entre la primera y la última visita, la adherencia y la asistencia a las consultas en función de las comorbilidades, los factores de riesgo cardiovascular y los tratamientos utilizados.

Resultados: Se incluyeron 639 pacientes (tiempo medio de seguimiento 11,1 ± 11,2 meses). El 66,6% alcanzó una HbA_{1c} dentro del objetivo. El cambio en la HbA_{1c} entre la primera y última visita se explicó en un 54,2% por la HbA_{1c} inicial ($p < 0,001$), en un 13% por la adherencia terapéutica ($p < 0,001$) y en un 9,6% por la adherencia a las citas ($p < 0,001$). La no insulización ($p = 0,011$) y el cese del tabaco ($p = 0,032$) predispusieron a una mayor adherencia. La insulización ($p = 0,019$) y la falta de educación terapéutica ($p = 0,033$) predispusieron a no acudir a las visitas.

Conclusiones: La mejora de la HbA_{1c} está determinada por la HbA_{1c} inicial, la adherencia terapéutica y la asistencia a las citas. Los insulizados tienen peor adherencia y faltan más a la consulta, los que dejan de fumar se adhieren más a los hipoglucemiantes y los que reciben educación terapéutica acuden más a la consulta.

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Introduction

The COSt of Diabetes in Europe–Type 2 (CODE-2) study¹ showed that in 2002 only 31% of European patients with diabetes achieved adequate blood glucose control, defined as HbA_{1c} ≤ 6.5%. The more recently published PANORAMA study² assessed the degree of blood glucose control of 5817 diabetic patients enrolled in 2010 in nine European countries; 37.4% of these patients were found to have HbA_{1c} values >7% (poor metabolic control). These data suggest that glucose control may be improving throughout Europe, as in other regions of the world,³ and lead us to ask about the factors that continue to cause lack of blood glucose control in many patients.

The factors that most increase the probability of having HbA_{1c} values outside the target range (>7%), according to the PANORAMA study,² are young age (for each additional year, the probability of poor blood glucose control decreases by 2%), diabetes duration (for each additional year, the probability of poor control increases by 2%), poor adherence to medication and lifestyle (these multiply the

risk of poor control by 3.98 and 2.16 respectively), and treatment complexity (the greater the complexity, the poorer the control). Other studies have suggested that clinical inertia, i.e., lack of therapy adjustment by physicians in uncontrolled patients, may also contribute to inadequate blood glucose control in patients with type 2 diabetes mellitus.⁴

Among these factors, lack of treatment adherence is particularly relevant because of its modifiable nature and its serious consequences (it increases the risk of diabetic complications, hospitalization,⁵ and healthcare expenses⁶). Because of this, more intensive research has been conducted in recent years on the causes of this lack of treatment adherence in patients with high cardiovascular risk. The Fixed-dose Combination Drug for Secondary Cardiovascular Prevention-1 (FOCUS-1) study,⁷ which assessed adherence to statins, aspirin, beta-blockers, and ACE inhibitors in patients with acute myocardial infarction in the past two years, showed that treatment non-adherence affects 45% of these patients and is related to use of multiple drugs, age (the younger the age, the lower the adherence) and presence of

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