

ORIGINAL ARTICLE

Clinical status of a cohort of patients with type 1 diabetes diagnosed more than 2 decades before. Results of a specific clinical follow-up program[☆]



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KEYWORDS

Type 1 diabetes mellitus;
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Abstract

Background and objective: The clinical course of type 1 diabetes mellitus (T1DM) has changed in recent decades. The aim of our study was to assess the long-term (>20 years) clinical status of a patient cohort with T1DM under a specific treatment and follow-up program.

Patients and methods: A single center, observational, cross-sectional study was conducted of a patient cohort diagnosed with T1DM in the 1986–1994 period at our tertiary university hospital. Clinical characteristics, metabolic parameters, and occurrence of chronic complications and comorbidities after >20 years of follow-up were collected. All subjects entered our specific program for patients with newly diagnosed T1D and were followed up using the same clinical protocol. Data are shown as mean (standard deviation) or as number of patients and percentage. The appropriate test was used to compare quantitative and qualitative data. A *P* value < 0.05 was considered statistically significant.

Results: A total of 279 patients were recorded, of whom 153 (53.6% women; mean age 46.6 ± 8.6 years; age at onset 23.3 ± 8.8 years; disease duration, 23.3 ± 2.6 years) continued to attend our diabetes unit at the time of the analysis. Of these patients, 24.8% were administered continuous subcutaneous insulin infusion (CSII). Mean HbA1c in the past 5 years and in the last year were $7.8 \pm 0.9\%$ and $7.7 \pm 1.1\%$ respectively ($7.3 \pm 1.5\%$ in those given CSII). Smoking was reported by 19.6% of patients, while 15.7% had high blood pressure and 37.9% dyslipidemia. Diabetic retinopathy was diagnosed in 20.4%, and 11.3% of the total cohort had nephropathy. Only 1.3% of our patients had a history of CVD.

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PALABRAS CLAVE

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Conclusions: Data collected from a cohort of patients with T1DM for more than 2 decades regularly followed up with a specific program in a tertiary university hospital suggest a remarkably low prevalence of diabetic complications.

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Situación clínica de una cohorte de pacientes con diabetes tipo 1 más de 2 décadas después del inicio. Resultados de un programa específico de seguimiento en una unidad de referencia

Resumen

Antecedentes y objetivo: El curso clínico de la diabetes tipo 1 (DT1) ha cambiado en las últimas décadas. Nos propusimos describir las características de una población con DT1 de más de 20 años de evolución bajo el mismo programa de seguimiento desde el inicio.

Pacientes y método: Estudio observacional de corte transversal en el que incluimos los pacientes del registro de inicios de DT1 entre 1986 y 1994 de nuestra Unidad de Diabetes. Desde 1986 todos siguen el mismo protocolo de seguimiento y tratamiento. Recogimos la presencia de complicaciones micro- y macrovasculares, factores de riesgo cardiovascular, control metabólico y tratamiento. Los datos se obtuvieron de la historia clínica informatizada. La comparación entre variables cuantitativas y cualitativas se realizó con el test apropiado en cada caso. Se consideró estadísticamente significativa una $p < 0,05$.

Resultados: De 279 pacientes del registro, 153 continuaban en nuestro centro (edad media $\pm$ desviación estándar: $46,6 \pm 8,6$ años) con una duración media de la DT1 de $23,3 \pm 2,6$ años. De estos, un 53,6% eran mujeres. El 24,8% estaba en tratamiento con infusión subcutánea continua de insulina (ISCI). La media de HbA1c en el último año fue de $7,7 \pm 1,1\%$ ($7,3 \pm 1,5\%$ en el grupo de ISCI) y de $7,8 \pm 0,9\%$ en los últimos 5 años. Un 19,6% fumaban, 15,7% tenían hipertensión arterial y 37,9% dislipidemia. Un 20,4% presentaban retinopatía diabética y el 11,3% nefropatía. Únicamente un 1,3% presentaba antecedentes de enfermedad cardiovascular.

Conclusiones: Tras más de 2 décadas de evolución de la DT1, consideramos que la prevalencia de complicaciones micro- y macrovasculares en nuestros pacientes con DT1 en un programa específico de seguimiento desde el inicio de la enfermedad es baja o, en algún caso, sustancialmente inferior a la esperada.

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Introduction

The clinical course of type 1 diabetes mellitus (T1DM) has changed in recent decades due to multiple factors. After the Diabetes Control and Complications Trial (DCCT) and the Epidemiology of Diabetes Interventions and Complications (EDIC) studies showed a reduction in microvascular and macrovascular complications with intensive insulin therapy, this has become the standard treatment for all patients with T1DM.^{1,2} Intensive insulin therapy has changed over time with the advent of rapid- and slow-acting insulin analogs, the incorporation of capillary blood glucose monitoring into treatment and specific therapeutic education schemes, the use of continuous subcutaneous insulin infusion (CSII) and, more recently, the possibility of using interstitial glucose monitoring.^{3,4} All these factors, together with the improved prevention and management of all other cardiovascular risk factors, have had an impact on the prognosis of patients with T1DM.

Despite all these advances, metabolic control is still sub-optimal in a majority of patients, as shown by the update

of the Exchange registry, where only 30% of adults with T1DM over 30 years of age achieved glycosylated hemoglobin (HbA1c) levels $<7\%$.⁵ In the same study, the rates of diabetic ketoacidosis and severe hypoglycemia in the previous three months in this patient group were approximately 3% and 6% respectively.⁵ Moreover, data have been reported in recent months regarding the prevalence of macrovascular complications and mortality in this population. Thus, cardiovascular events are the most common cause of death, especially in patients in whom the disease was diagnosed in childhood, and even in those with no nephropathy. It is estimated that the life expectancy of a 20-year-old patient with T1DM decreases by approximately eight years as a result of the disease.^{6,7} In clear contradiction with the above, some studies have reported that the mortality of patients with T1DM who have no renal disease is similar to that of a control population.⁸

The data available on the degree of metabolic control and the prevalence of microvascular and macrovascular complications in patients with long-standing T1DM in our environment are still very sparse.^{9,10} Based on the foregoing,

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