

ORIGINAL ARTICLE

Impact and characteristics of the non-Caucasian population in hospital admissions for diabetes onset during 2003–2010[☆]



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KEYWORDS

Ketosis-prone diabetes;
Type 2 diabetes mellitus;
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Ethnicity

Abstract

Aims: To assess the prevalence of non-Caucasian patients in hospital admissions for onset of symptomatic diabetes mellitus during the 2003–2010 period, and to analyze the characteristics differentiating them from the Caucasian population at diagnosis and 2 years later.

Material and methods: A retrospective, observational study. Inclusion criteria: patients aged 18–40 years admitted for de novo symptomatic diabetes from January 2003 to October 2010. Prevalence of patients of non-Caucasian origin was analyzed, and clinical, biochemical, immunological, and beta-cell function of both populations were compared at diagnosis and 2 years later.

Results: Nineteen percent of patients admitted to hospital for de novo symptomatic diabetes were non-Caucasian, with a progressive increase in recent years. Non-Caucasian patients had milder decompensation (3.0% had ketoacidosis, as compared to 15.2% in the Caucasian group, $p < 0.05$), lower presence of autoimmunity (27.2 vs. 73.1%, $p < 0.01$) and higher stimulated C-peptide levels (0.70 ± 0.56 vs. 0.42 ± 0.39 nmol/L, $p < 0.05$), mainly because of the subgroup with negative autoimmunity (0.82 vs. 0.25). Two years after diagnosis, less non-Caucasian patients were on intensified treatment (39.1 vs. 93.8%).

Conclusions: Non-Caucasian patients had a lower prevalence of autoimmunity, better beta-cell function at diagnosis, particularly due to the subgroup with negative autoimmunity, and less need for intensive treatment 2 years after diagnosis, features which are more characteristic of type 2 diabetes mellitus.

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PALABRAS CLAVE

Ketosis-prone diabetes;
Diabetes mellitus tipo 2;
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Etnia

Impacto y características diferenciales de la población de origen no caucásico en los ingresos por inicio de diabetes durante el periodo 2003–2010

Resumen

Objetivos: Determinar la prevalencia de pacientes de origen no caucásico en los ingresos hospitalarios por inicio de diabetes mellitus durante el periodo 2003–2010 y analizar las características diferenciales respecto a la población caucásica en el momento del inicio y a los 2 años.

Material y métodos: Estudio observacional retrospectivo. Criterios de inclusión: pacientes ingresados por inicio sintomático de diabetes entre enero de 2003 y octubre de 2010, con edad entre 18 y 40 años. Se analizó la prevalencia de pacientes de origen no caucásico, se compararon ambas poblaciones respecto a datos clínicos, bioquímicos, de reserva pancreática e inmunológicos en el momento del inicio y se analizó la evolución a los 2 años.

Resultados: De los ingresos por inicio sintomático de diabetes, el 19% fueron pacientes no caucásicos, con un aumento progresivo en los últimos años. Estos presentaban un grado de descompensación más leve (3,0% de cetoacidosis respecto al 15,2% en el grupo caucásico, $p < 0,05$), menor autoinmunidad (27,2 vs. 73,1%, $p < 0,01$) y un péptido C estimulado mayor ($0,70 \pm 0,56$ vs. $0,42 \pm 0,39$ nmol/L; $p < 0,05$), básicamente a expensas del grupo con autoinmunidad negativa (0,82 vs. 0,25). A los 2 años del inicio, los pacientes no caucásicos tenían un menor porcentaje de tratamiento intensivo (39,1 vs. 93,8%).

Conclusiones: El grupo de pacientes no caucásicos presenta menor prevalencia de autoinmunidad, mejor funcionalismo celular beta al diagnóstico, sobre todo a expensas del subgrupo de pacientes con autoinmunidad negativa, y menor necesidad de tratamiento intensivo a los 2 años del diagnóstico, comportamiento más característico de la diabetes mellitus tipo 2.

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Introduction

Recent studies estimate a 7.6% prevalence of diagnosed diabetes in the Catalan population¹ and a 13.8% prevalence of diabetes (diagnosed and undiagnosed) in the Spanish population.² Consequently, this disease is considered a major health problem. On the other hand, the proportion of the non-Caucasian population has increased in Catalonia, and specifically in the metropolitan area of Barcelona, due to increased immigration in the years prior to the economic crisis. In the specific case of L'Hospitalet de Llobregat, a town with approximately 250,000 inhabitants in 2010, immigrants account for almost 25% of the total population.³

In developed countries where the Caucasian population is predominant, a type of diabetes mellitus with a symptomatic onset showing characteristics different from those seen in the autochthonous population has been reported in non-Caucasian adults. These patients usually have a symptomatic picture with acute ketotic decompensation (ketosis or ketoacidosis) despite being overweight or obese and frequently having a relatively preserved pancreatic reserve. They also have negative pancreatic autoimmunity^{4–6} and a course that allows for disease control with no need for insulin in a substantial proportion of cases, and even for remission to normoglycemia.⁷ This type of diabetes with characteristics halfway between type 1 and type 2 diabetes mellitus has been given different names, including atypical diabetes mellitus,⁸ ketosis-prone diabetes,^{9,10} Flatbush diabetes,⁴ or type one and a half diabetes, and its pathophysiology is not fully known.¹¹

In Spain, despite the increasing percentage of the non-Caucasian population, little attention has been paid to the characteristics of diabetes mellitus at onset in this group. Our objective was to determine the proportion of patients of non-Caucasian origin in hospital admissions for the onset of diabetes mellitus during the 2003–2010 period at the reference area of Hospital Universitari de Bellvitge and to analyze their differences from the Caucasian population regarding clinical, biochemical, immunological, and pancreatic reserve characteristics, both at hospital admission and at 2 years after diabetes onset.

Patients and methods

An observational, retrospective study was conducted at Hospital de Bellvitge, a non-pediatric teaching hospital attached to Barcelona University and acting as reference in its area for patients with symptomatic diabetes onset, with a reference population for admissions for diabetes of 300,561 inhabitants. In all patients admitted for this disease, an established clinical protocol including supplemental tests and treatment, and subsequent monographic monitoring, is followed.

Study patients

All patients admitted to the department of endocrinology and nutrition from January 2003 to October 2010 with a diagnosis of the onset of diabetes mellitus, with ages

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