

OBSERVATIONS

Incidence of Type 1 Diabetes in Mexico: Data From an Institutional Register 2000–2010

The incidence of type 1 diabetes is increasing worldwide. However, scant data exist about the prevalence or the incidence of type 1 diabetes in children (1,2). The aim of this study was to describe the number of new cases with type 1 diabetes reported in a pediatric population covered by the Instituto Mexicano del Seguro Social during a 10-year period (2000–2010).

Data registered by the Dirección de Prestaciones Médicas of the Instituto Mexicano del Seguro Social collected during 2000–2010 were the source of information. Children with incident type 1 diabetes were identified using ICD-10-CM diagnostic codes. The Instituto Mexicano del Seguro Social provides health care to workers nationwide.

During the study years, the number of new cases with type 1 diabetes increased from 3.4 to 6.2 per 100,000 insured cases aged ≤ 19 years. In the year 2000, 367 new cases were reported in a population composed of 10,642,811 children and adolescents. During the first half of the decade, the incidence remained fairly steady. The highest rate of new cases was seen in 2006, with 1,029 new cases in a population of 11,739,112 (8.8 new cases/100,000 insured pediatric subjects). The incidence rate decreased in 2007 and 2008 (5.2 and 4.5, respectively) and then surged again in 2009 (7.5). By 2010, 698 cases were registered in a sample of 11,284,768 persons. The 2006–2010 incidence rates were statistically greater compared with that observed in 2000 ($P < 1 \times 10^{-5}$).

The age-groups with the biggest increment in number of cases were the 10–14 years old (2.1-fold increase between 2003 and 2010) and 15–19 years old (1.9-fold increase between 2003 and 2010). When we contrasted the incidence of type 1 diabetes in children under 5 years of age with those between 5 and 19, we found a statistically significant difference. For the years in which the information was available by sex (2003–2010), an increment in the incidence rates was observed in both sexes. In those younger than age 5 years, incidence was higher in males than in females (ranging from 1.5 males vs. 1.0 females in 2003 to 1.4 males vs. 1.2 females in 2010) ($P < 0.001$). On the other hand, in minors over 5 years of age, females had a consistently higher rate of incidence than males (5.7 females vs. 4.7 males in 2003 to 8.6 females vs. 7.2 males in 2010) ($P = 1 \times 10^{-7}$).

In summary, this study demonstrates a substantial upward trend in diagnosed type 1 diabetes incidence during 2000–2010 among children under 19 years of age in Mexico.

There are various possibilities that might be helpful to explain this rapid increase. Perinatal infections, weight increase in the first months of life, and increase in maternal age are among the potential explanations (3,4).

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R.A.G.-D. carried out the study, verified the classification of the cases, and wrote the manuscript. G.P.-P. offered initial data, analyzed results, contributed to discussion, and reviewed and edited the manuscript. I.T.H.-C. analyzed data and results. J.d.C.R.-G. and R.G.-L. researched data and reviewed the manuscript. C.A.A.-S. contributed to discussion and reviewed and edited the manuscript. N.H.W. analyzed results, contributed to discussion, and reviewed and edited the manuscript. R.A.G.-D. is the guarantor of this work and, as such, had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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