



Type 2 Diabetes in Youth

Mary Kars*

Department of Pharmaceutical Sciences, University of Sao Paulo, Sao Paulo, Brazil

Type 2 diabetes in youth was almost unprecedented only 20 years ago. However, tracking the recent dramatic rise in childhood obesity, type 2 diabetes has become increasingly prevalent. Thus, there's an urgent need for high-quality clinical trials to extend in-depth knowledge about pathophysiology, optimal treatment, and prevention.

The incidence of type 2 diabetes in adolescents and young adults continues to rise at an alarming rate, and far remains to be learned about etiology and pathophysiology so as to develop effective prevention and treatment approaches. Data from the look for Diabetes in Youth study showed that within the year 2002, 3700 youths were newly diagnosed with type 2 diabetes within the USA, approximately 25% of the annual incidence of type 1 diabetes in children and adolescents. Rates of type 2 diabetes were as high as 49.4 per 100 000 among 15- to 19-yr-old adolescent minority populations. Altogether ethnic groups, females were significantly more affected than males. Although a good array of treatment options is out there for type 2 diabetes in adults, only two medications, insulin and metformin, are approved to be used in children and adolescents with this condition.

Clinical trials in children with type 1 diabetes were initiated soon after the invention of insulin in 1921 and have markedly improved our knowledge about the immunologic and metabolic characteristics of this condition. However, interventional and prospective long-term clinical studies in pediatric type 2 diabetes are sparse. One reason is certainly the low prevalence of this disease until about 20 yr ago. Another issue is that the incontrovertible fact that recruitment for these clinical trials remains challenging. An example is that the necessity to prolong the anticipated recruitment period for the massive, multicenter Treatment Options for Type 2 Diabetes in Adolescents and Youth trial (TODAY) from 3 to 4 years so as to finish enrollment

of 750 children and adolescents nationwide.

In contrast to individuals with type 1 diabetes, patients with type 2 diabetes frequently have a robust case history of the disease and share many high-risk features. Recently a study reported that first-degree relations of adolescent patients (aged 11–17 yr) with type 2 diabetes, including healthy siblings, shared many or all the subsequent high-risk features: marked central obesity, poor dietary habits, and a sedentary lifestyle. The strong hereditary component of type 2 diabetes may present a big barrier to participation in clinical research, particularly if relatives with the disease aren't sufficiently concerned about their own disease management and aren't supportive within the management of the affected adolescent. Furthermore, unless a high degree of independence has been achieved, lifestyle interventions of diet and exercise often got to target the whole family so as to be effective within the adolescent.

Lower socioeconomic status and lack of a strong political and medical lobby are additional challenges affecting youth with type 2 diabetes. In contrast, children with type 1 diabetes enjoy support by organizations like the type 1 diabetes Research Foundation (JDRF), which is that the largest charitable funder and advocate of type 1 diabetes research within the world. Since its founding in 1970, JDRF has awarded over 1.3 billion dollars to research, including quite 156 million dollars within the 2008 financial year. No comparable private funding organization exists to market research in youth with type 2 diabetes.

Finally, several studies in adolescent type 2 diabetes report that an outsized percentage of screened patients don't meet eligibility criteria. This might flow from partially to the high prevalence of obesity-related comorbidities, like hypertension, hyperlipidemia, non-alcoholic liver disease, menstrual irregularities, and obstructive apnea, which end in failure to satisfy strict inclusion or exclusion criteria.

Correspondence to: Mary Kars, Department of Pharmaceutical Sciences, University of Sao Paulo, Sao Paulo, Brazil, E-mail: kars121@usp.br

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