Brief Communication

Type 1 diabetes care updates: Tanzania

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ABSTRACT

Tanzania is located in east Africa with a population of 45 million. The country's population is growing at 2.5% annually. The International Diabetes Federation Child Sponsorship Program was launched in Tanzania in 2005. The number of type 1 diabetes mellitus children enrolled in the changing diabetes in children program in Tanzania has augmented from almost below 50 in 2005 to over 1200 in 2014. The country had an overall trend of HbA1c value of 14% in 2005 while the same has reduced over the years to 10% in 2012–13. The program has been able to reduce the proportion of patients with HbA1c values of 11–14%; from 71.9% in 2008 to 49.8% in 2012–13. The challenges, which CDiC faces are misdiagnosis, low public awareness, and stigma especially in the reproductive age/adolescent groups.

Key words: Changing diabetes in children, Tanzania, type 1 diabetes mellitus

Type 1 diabetes mellitus (T1DM) is a growing concern worldwide; while there has been a great improvement in the knowledge, epidemiology and management of this condition in the developed worlds, there has been little or no improvement in sub-Saharan Africa. Much of the available data in sub-Saharan Africa is not population-based and is of limited value for making generalizations about the magnitude of the disease in children.[1]

Tanzania is located in east Africa, with a total area of 945,090 square km, and has a population of 45 million with 44% of these below 14 years of age and 53% in the age group of 15–64 years. The country's population is growing at 2.5% annually, and the life expectancy at birth is 51.9 years, whereas the death rate is 16.75 deaths/1000 population. The literacy rate for females in the age group of 15–24 years is 76.2% and the per capita income is $350.[2]

The International Diabetes Federation Child Sponsorship Program was launched in Tanzania in 2005 with the pilot site at Muhimbili National Hospital, Dar-es-Salaam. The World Diabetes Foundation (WDF) Fund Raiser Program – Tunza Watoto Wenye Kisukari (Take Care of Children with Diabetes) project was launched in 2007 at five sites: Bugando Medical Center, Mwanza; Sekou Toure Regional Hospital, Mwanza; Kilimanjaro Christian Medical Center, Moshi; Mbeya Referral Hospital, Mbeya; and Mnazi Moja Hospital, Zanzibar. The WDF Fund Raiser is now transferred to the changing diabetes in children (CDiC) program which was launched in 2011, and six new sites have been added in the same recently including Karagwe, Bukoba, Tanga, Arusha, Temeke, and Pemba.

The number of T1DM children enrolled in the CDiC program in Tanzania has augmented from almost below 50 in 2005 to over 1200 in 2014. The country has six pediatric endocrinologists, 135 paediatricians, 25 nurse educators, and five dieticians involved in diabetes care. The country has various types of insulin available for diabetes care, including regular insulin, NovoRapid, Mixtard 30/70, NPH, and Lantus, costing around 25–30$/vial, and the cost is borne majorly by the ministry of health, various programs in the country (including CDiC), donors, and by patients. The various types of glucometers available in the country include AccuChek, Ascensia, GlucoPlus, and TRUE balance, costing around 6075$/unit, and the cost is borne majorly by various programs, health insurance, and the patients.

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The country had an overall trend of HbA1c value of 14% in 2005 while the same has reduced over the years to 10% in 2012–13. The CDiC program has increased the proportion of patients with HbA1C ≤7.5%; from 7.8% in 2008–24 to 1% in 2012–13. The program has also been able to reduce the proportion of patients with HbA1c values of 11–14%; from 71.9% in 2008 to 49.8% in 2012–13. The CDiC program enrolment has increased rapidly from 2011 to 2013–14 and led to a very significant decrease in the complications profile including diabetic ketoacidosis and mortality. The program has also resulted in normal school attendance, microfinance projects, peer educators, awareness campaigns, and diabetes registry in each clinic with reliable data. The programs have also helped in developing a teaching model for nurses and doctors both from within and outside Tanzania.

The challenges which CDiC has noticed are misdiagnosis (e.g., cerebral malaria, pneumonia or meningitis), low public awareness, and stigma especially in the reproductive age/adolescent groups. Poverty causes loss to follow up, lack of recommended nutrition and poor insulin storage at the patient end. Trained staffs at the clinics also pose a threat in terms of retention and are sometimes transferred to other departments. The poor commitment of the government to the program leaves the program dependent on donors and hence the threat of sustaining services for children with T1DM exists. Other challenges include poor control of HbA1c among children, poor adherence to insulin injections in terms of dose, time and frequency, lack of proper meal and an adult supervision, mixing other treatment modalities (modern, spiritual and traditional medicine), and poor record keeping of blood glucose measurements.[3]

Effective management and/or prevention of diabetes and its complications in Sub-Saharan African children should adopt multidisciplinary approaches. In order to improve care for diabetes patients in developing countries, specialized clinics need to be established.[1]

Summary

Despite being a limited resource country, great commitment from programmes and efforts to improve care can bring positive results and improve the quality of life of T1DM patients.

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