Editorial

Diabetes in India at 75 : Crossroads with History and Future

Introduction : Diabetes is one of the largest global health emergencies of this century, affecting more than half a billion people worldwide[1]. Globally, an estimated 240million people are living with undiagnosed diabetes[1]. Non-Communicable Diseases (NCDs) accounted for 74% of deaths globally in 2019, according to World Health Organization, out of which, diabetes resulted in approximately 1.6 million deaths, therefore becoming the ninth leading cause of death globally[2].

Type 2 Diabetes (T2D), previously considered a disease of affluent "Western" countries has now spread globally, accounting for about 90% of all diabetes cases. T2D is a major cause of disability and death affecting across all age groups. The number of children and adolescents living with diabetes is increasing annually. In 2021, over 1.2 million children and adolescents have been diagnosed with type 1 diabetes. Majority of type 1 diabetes children in India are from a poor socioeconomic background and comprehensive diagnostic, treatment and team based facilities are sparcely available. There is a huge economic burden due to direct health expenditures from diabetes, nearly about one trillion USD[1].

Global burden : Worldwide, an estimated 537 million adults in the age group of 20–79 years(about 10.5% of all adults) have diabetes. By 2030, 643 million and by 2045, 783 million adults (aged 20–79 years) are projected to be living with diabetes. Thus, diabetes is estimated to increase by 46%, while the world's population is estimated to grow by 20%[1].

Burden of Diabetes in India: 74.2 million people live with diabetes in India in 2021 and by 2045 the count is expected to rise to 124.9 million, with estimated 53.1% having undiagnosed diabetes[1]. This has led to a significant increase in mortality due to NCDs.

The prevalence of diabetes in India has risen from 7.1% in 2009 to 8.9% in 2019[3]. Indian Council of Medical Research INDIAB Study on diabetes and prediabetes comprising of data from 15 states / UT, the largest epidemiological, population-based survey conducted at National Level, highlighted the prevalence of diabetes ranging between 3.5 - 8.7% in rural and 5.8 - 15.5% in urban areas. Diabetes prevalence was higher in urban areas (11.2%) compared to that of rural areas (5.2%). The prevalence of prediabetes ranged from 5.8- 14.7% in rural to 7.2-16.2% in urban areas with higher prevalence of prediabetes compared to diabetes in most states, indicating presence of large number of individuals at high risk of developing T2D in near future. Prediabetic Asian Indians progress more rapidly to overt T2D compared to other ethnic groups[4].

Moreover the phase 2 of INDIAB Study suggested that achievement of treatment targets like glycaemic control, lipid and blood pressure control remain suboptimal in Indian diabetes subjects[5].

Combined efforts of both academic and translational science are needed to improve the quality of life and better life expectancy for people with diabetes[6]. The year 2021 marked 100 years of insulin discovery in Toronto in 1921, which brought hope for the first time to people with type 1 diabetes and lead to a Nobel Prize in 1923[6]. Over the years, there has been innovations in the scientific journey of diabetes medications including insulin[7]. Timely insulin initiation may generate a good metabolic memory, reducing chronic complications, but is an important challenge in India[8]. Timely insulin initiation therapy leads to improved beta- cell function and mass by inducing 'beta-cell rest'[9]. The spurt in childhood obesity worldwide and specially in India, has triggered the dramatic rise of T2DM in young in India in recent years[10]. This is linked to the global economic growth and changes in lifestyle and dietery habits. T2DM in childhood can be contained to a large extent through lifestyle modification measures. School based interventions like nutrition and physical education and regular health checkup are essential for prevention of T2DM in children and management of T1DM.

As we look at the future, we see new diabetes treatment and technologies device innovations that will bring greater flexibility and a more holistic approach to diabetes care. Once-weekly dosage of basal insulins, glucose-sensitive and cardio-protective insulins, next generation oral treatments, other innovative approaches such as new digital health solutions, transformational stem-cell therapies and even the hope for curative treatment someday are all going to be a part of our effort to defeat diabetes[7].

In conclusion, our task is cut out, we need a clear population strategy to detect diabetes at an early stage and initiate action to prevent complications, as almost one in two adults with diabetes are unaware that they have the condition. It is quintessential to improve the mass healthcare delivery system and quality of care to support diabetes subjects beyond diagnosis with multifaceted treatment for early and persistant glycemic, lipid and blood pressure control to prevention complications. Insulin therapy is an important component of treatment of diabetes. Concerted effort, to strengthen and empower the public health sector, in health promotion, diabetes screening, prevention and management, will go a long way in reducing the impact of diabetes.

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