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Editorial

Malnutrition-Related Diabetes: The Forgotten Form

Subramani Parasuraman*

Unit of Pharmacology, Toxicology and Basic Health Sciences, Faculty of Pharmacy, AIMST University, 08100 Bedong, Kedah Darul Aman, MALAYSIA.

INTRODUCTION

Diabetes mellitus is a chronic disease caused by insufficient insulin production or inefficient insulin utilization inside the body, causing hyperglycemia and damage to various body systems, particularly to the nerves and blood vessels. Diabetes mellitus affects approximately 537 million adults worldwide, with projections estimating it to rise as high as 783 million by the year 2045. Many individuals remain undiagnosed, especially in low- and middle-income countries. This increasing trend poses significant public health challenges, making diabetes one of the leading causes of death globally.[1] In the year 2022, 14% of adults aged 18 and older were living with diabetes, with 59% not taking medication. Diabetes treatment coverage is lowest in low- and middle-income countries. In 2021, diabetes caused 1.6 million deaths, with 47% occurring before the age of 70 years. Mortality rates from diabetes have been steadily increasing since 2000, while the probability of dying from noncommunicable diseases decreased by 20% globally between 2000 and 2019.[2]

Diabetes mellitus is a complex metabolic condition with four categories: Type 1 Diabetes Mellitus (caused by beta-cell destruction, leading to absolute insulin deficiency), Type 2 Diabetes Mellitus (T2DM) (ranging from insulin resistance to a predominantly insulin secretory defect), hyperglycaemia in pregnancy (including gestational diabetes) and diabetes that have a specific aetiology which may be genetic (monogenic forms such as maturity-onset diabetes of the young) or secondary to drugs (e.g.: pentamidine, nicotinic acid, glucocorticoids, etc), pancreatic factors or other illnesses.[3] Other specific types can also be caused by infections, diseases of the exocrine pancreas, and post-transplant complications. Currently, the majority of cases (90-95%) are classified as type 2 Diabetes, primarily linked to lifestyle factors such as poor diet, physical inactivity, and obesity.[1] The major risks of Type 2 Diabetes include being overweight, physical inactivity, and an unhealthy diet high in sugars and fats. Additional risk factors are a family history of diabetes, advanced age, hypertension, dyslipidaemia (abnormal cholesterol levels), and a history of gestational diabetes. Pre-diabetic conditions like Impaired Glucose Tolerance (IGT) and Impaired Fasting Glycaemia (IFG) also significantly increase the likelihood of developing T2DM. Early lifestyle interventions can greatly reduce this risk.[4]

On April 8, 2025, The International Diabetes Federation (IDF) officially recognized Type 5 Diabetes Mellitus (T5DM), a once-overlooked form of diabetes that affects 20-25 million individuals globally, particularly in low- and middle-income countries across Asia and Africa. T5DM falls under the classification of Severe Insulin-Deficient Diabetes (SIDD), which stems from impaired pancreatic development due to sustained nutritional deprivation during critical growth periods. This condition was first described in Jamaica in 1955 and later acknowledged by the World Health Organization in 1985. However, due to limited mechanistic evidence, it was removed from formal classification in 1999. Interest in the condition reemerged in the early 2000s through Dr. Meredith Hawkins, Professor of Medicine at Albert Einstein College of Medicine. Dr. Hawkins emphasized the significance of this development, stating that the recognition of T5DM as 'Type 5 diabetes' brings long-overdue visibility to a disease that disproportionately affects vulnerable populations and has been left out of Western-focused medical texts and guidelines. T5DM refers to SIDD, characterised by elevated levels of insulin deficiency and poor metabolic control. Unlike type 2 diabetes, type 5 diabetes, also known as malnutrition-related diabetes, is primarily caused by chronic undernutrition, particularly during childhood or adolescence.[5]

T5DM, first observed in the mid-20th century, has been largely overlooked in global health discussions due to its distinct metabolic profile, often misclassified as type 1 or 2. T5DM patients are insulin deficient but not insulin resistant and may manage their condition with oral medication instead of insulin injections. The IDF's official designation of T5DM closes a long-standing gap in global diabetes taxonomy and brings long-overdue visibility to a disease that disproportionately affects vulnerable populations. The IDF has established a dedicated working group to create formal diagnostic criteria and treatment guidelines, expected to be published within the next two years.[6]

In summary, diabetes Mellitus remains one of the most pressing global health challenges, affecting hundreds of millions of individuals and exerting a disproportionate burden on low- and middle-income countries. While the majority of cases are attributed to T2DM the recent recognition of T5DM by the International Diabetes Federation marks a significant

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advancement in our understanding of the disease's diversity. T5DM, historically overlooked and misclassified, highlights the critical link between chronic undernutrition and metabolic dysfunction-emphasizing the need for inclusive research, diagnosis, and treatment strategies that address socioeconomic determinants of health. As diabetes continues to evolve in both prevalence and complexity, tailored public health policies, increased awareness, and equitable healthcare access are essential to reduce the global burden and improve outcomes across all populations.

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Correspondence:

Dr. Subramani Parasuraman

Unit of Pharmacology, Toxicology and Basic Health Sciences, Faculty of Pharmacy, AIMST University, 08100 Bedong, Kedah Darul Aman, MALAYSIA.

Email: parasuphd@gmail.com, parasuraman@aimst.edu.my