



Dr Sanjay Kalra
Chairperson, Education Working Group, International Society of Endocrinology (ISE)
President, Indian Professional Association for Transgender Health (IPATH)
President, SAFES, Dept. of Endocrinology, Bharti Hospital, Karnal, Haryana, India



Dr Rakesh Sahay
Dept. of Endocrinology
Osmania Medical College,
Hyderabad, Telangana, India



Dr Saptarshi Bhattacharya
Dept. of Endocrinology
Apollo Indraprastha Hospital,
New Delhi, India

Prediabetes: A Platform for Prevention of Diabetes

The diabetes pandemic has created a major clinical as well as public health challenge for the world. This has led to a mammoth infrastructural and financial burden, threatening national economies. While diabetes is a major issue, the worsening prediabetes epidemic is even more worrisome. The Indian Council of Medical Research-India Diabetes (ICMR-INDIAB)-17 report highlights that prediabetes is more prevalent than diabetes in every Indian state.¹ The high diabetes epidemicity index means the worst is yet to come.²

Prevention of Diabetes

The best way of managing diabetes is to prevent it. This can be done by intervening actively at the prediabetes stage. Prediabetes is a well-defined clinical condition. There are clearly delineated diagnostic criteria endorsed by the World Health Organization (WHO) and American Diabetes Association (ADA).^{3,4} As prediabetes is usually asymptomatic, proactive screening is required to identify it on time. The screening methods and the high-risk populations that need to be targeted are well-defined. Screening is simple: a plasma glucose estimation is required to diagnose dysglycemia using WHO cut-offs.⁴

Diagnosis of Prediabetes

It makes sense, therefore, to promote timely screening, diagnosis and management of prediabetes. This should be made a public health priority and be practiced at

all levels of health care, whether primary, secondary, or tertiary. Various national health care programs, e.g., human immunodeficiency virus (HIV) and tuberculosis (TB), integrate screening for diabetes and prediabetes in their protocols.⁵⁻⁷ Such activities can be strengthened and expanded to include a wider population segment in their ambit.

At the clinical level, too, one must practice screening for prediabetes. This can be done cost-effectively in high-risk persons who access the health care system with clinical features, comorbidities, complications or concerns suggestive of dysglycemia. It should also be carried out in asymptomatic persons from high-risk ethnicities.

Caveats and Care

One should be aware of and respect the caveats that accompany any screening intervention. Appropriate tools should be used: glucometers should be Federal Drug Administration (FDA) or International Standard Institute approved; glycated hemoglobin (HbA1c) should be measured in accredited laboratories or by accredited point-of-care testing machines. The right technique should be followed, as reinforced by the principles of glucometric guardianship.⁸

Clinical Responsibility

Screening should not be limited to just sharing a biochemical number or diagnosis with the patient.

It should include counseling about the interpretation and impact of these numbers and the interventions needed to optimize them.

It is not necessary that pharmacological interventions have to be offered to everyone with prediabetes. Lifestyle modification remains the treatment of choice. It can be supplemented with functional foods, nutraceuticals, and drugs to optimize metabolic dysfunction such as obesity, hypertension and dyslipidemia. In selected persons, medication may be indicated. These include persons with established (or at high-risk of) atherosclerotic cardiovascular disease, those at high-risk of developing diabetes, as well as those who are concerned about their health.⁹

Advocacy and Activism

While action is required at both public health and clinical levels, collaborative and concerted activism, and advocacy is necessary to tackle prediabetes and prevent diabetes. Keeping this in mind, the Endocrine Society of India observed the first International Prediabetes Day in 2021. The date 14th August was chosen, as it falls 90 days before World Diabetes Day on 14th November the usual time required to reverse prediabetes and observe a meaningful change in HbA1c levels. Multiple partners added their voices to this initiative. Within 2 years, Prediabetes Day has become a truly international event endorsed by the South Asian Federation of Endocrine Societies (SAFES) and International Diabetes Federation (IDF). While the 2021 theme was Fight Prediabetes, 2023 takes inspiration from the IDF's theme for World Diabetes Day, "Access to Diabetes Care".

Showing solidarity the Asian Journal of Diabetes also lends its voice to advocate for "Access to Prediabetes Care". By this, we mean facilities for regular, timely screening, lifestyle counseling, testing for possible complications and comorbidities, as well as the institution of pharmacological therapy if necessary.

The Way Ahead

To do so, we all need to work together at a mass level. Policymakers, planners, physicians, paramedical personnel, popular personalities, members of the public,

and patients, all need to understand the importance of detecting and dealing with prediabetes. It is not that a new 'disease' is being created by us; rather, we wish to prevent disease from taking root in our society.

References

1. Anjana RM, Unnikrishnan R, Deepa M, Pradeepa R, Tandon N, Das AK, et al. Metabolic non-communicable disease health report of India: the ICMR-INDIAB national cross-sectional study (ICMR-INDIAB-17). *Lancet Diabetes Endocrinol.* 2023;11(7):474-89.
2. Jayawardena R, Ranasinghe P, Byrne NM, Soares MJ, Katulanda P, Hills AP. Prevalence and trends of the diabetes epidemic in South Asia: a systematic review and meta-analysis. *BMC Public Health.* 2012;12:380.
3. ElSayed NA, Aleppo G, Aroda VR, Bannuru RR, Brown FM, Bruemmer D, et al. 2. Classification and diagnosis of diabetes: standards of care in diabetes-2023. *Diabetes Care.* 2023;46(Suppl 1):S19-S40.
4. Alberti KG, Zimmet PZ. Definition, diagnosis and classification of diabetes mellitus and its complications. Part 1: diagnosis and classification of diabetes mellitus provisional report of a WHO consultation. *Diabet Med.* 1998;15(7):539-53.
5. Kalra S, Unnikrishnan AG, Raza SA, Bantwal G, Baruah MP, Latt TS, et al. South Asian Consensus Guidelines for the rational management of diabetes in human immunodeficiency virus/acquired immunodeficiency syndrome. *Indian J Endocrinol Metab.* 2011;15(4):242-50.
6. Lee MR, Huang YP, Kuo YT, Luo CH, Shih YJ, Shu CC, et al. Diabetes mellitus and latent tuberculosis infection: A systematic review and metaanalysis. *Clin Infect Dis.* 2017;64(6):719-27.
7. Riza AL, Pearson F, Ugarte-Gil C, Alisjahbana B, van de Vijver S, Panduru NM, et al. Clinical management of concurrent diabetes and tuberculosis and the implications for patient services. *Lancet Diabetes Endocrinol.* 2014;2(9):740-53.
8. Kalra S, Agrawal N, Kapoor N, Kalhan A, Teelucksingh J, Sahay R. Glucometric guardianship. *Indian J Clin Pract.* 2023;33(8):31-32.
9. Samson SL, Vellanki P, Blonde L, Christofides EA, Galindo RJ, Hirsch IB, et al. American Association of Clinical Endocrinology Consensus Statement: Comprehensive Type 2 Diabetes Management Algorithm - 2023 Update. *Endocr Pract.* 2023;29(5):305-40.

