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EDITORIAL

Type 2 Diabetes: An Overlooked Consequence of Chronic Stress

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Type 2 diabetes mellitus (T2DM) has long been recognized as a multifactorial metabolic disorder driven by genetic susceptibility, lifestyle choices, and environmental influences. In recent years, however, increasing evidence has highlighted a less acknowledged yet highly significant contributor chronic psychological stress[1]. While the public health discourse often focuses on obesity, poor diet, and physical inactivity, the silent role of stress as a precipitating and aggravating factor in T2DM deserves urgent attention[2].

The human stress response, mediated by the hypothalamic pituitary adrenal (HPA) axis and the sympathetic nervous system, is an adaptive survival mechanism. However, when stress becomes chronic, this system remains persistently activated, leading to prolonged secretion of cortisol and catecholamines[3]. These hormonal changes promote insulin resistance, dysregulated glucose metabolism, and visceral fat deposition hallmarks of T2DM. Furthermore, stress-induced inflammation contributes to beta-cell dysfunction, impairing the pancreas's ability to regulate blood sugar effectively[4].

Real-world data reveal that individuals in high-stress occupations, those experiencing financial strain, or those facing chronic caregiving responsibilities have a disproportionately higher incidence of T2DM. This association is further exacerbated in developing countries like Pakistan, where socioeconomic instability, urban crowding, and limited mental health support amplify stress exposure. The result is a vicious cycle: stress worsens glycemic control, and poor glycemic control fuels emotional distress, leading to deteriorating health outcomes[5,6].

Despite this growing body of evidence, clinical guidelines for T2DM prevention and management rarely incorporate structured stress assessment and management strategies[7]. Incorporating routine screening for stress levels, providing access to cognitive-behavioral therapy, mindfulness training, and community-based support systems could substantially improve disease outcomes. Addressing mental health is not an optional adjunct to diabetes care it is an essential component[8,9].

Public health campaigns must shift towards a more integrated approach, recognizing that stress is not merely a psychological burden but a biological risk factor with tangible consequences[10]. Without acknowledging and addressing stress as a driver of T2DM, efforts to curb the global diabetes epidemic will remain incomplete. In the era of holistic and preventive medicine, the time has come to bridge the gap between mental health and metabolic health, placing stress management at the forefront of diabetes prevention strategies[11,12].

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