



The Growing Challenge of Diabetes Management in an Aging Society

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As the global population ages, the prevalence of diabetes in the elderly is becoming a significant public health concern. Korea is one of the most rapidly aging countries, and the latest statistics presented by the Korean Diabetes Association show that the prevalence of diabetes in the elderly (≥ 65 -year-old) is 29.6%. In 2019 to 2020 in Korea, 56.3% or 2.96 million people with diabetes was older than 60 years. Furthermore, more than 50% of the elderly population had prediabetes [1]. With Korea approaching a superaged society, these numbers are expected to increase more steeply.

In this issue, Ko et al. [2] reported the statistics of diabetes in elderly adults in Korea based on data from the Korea National Health and Nutrition Examination Survey 2019 to 2020. The prevalence of diabetes was 26.0% based on fasting plasma glucose (FPG) and 29.6% by both FPG and glycosylated hemoglobin (HbA1c) criteria. Although the overall prevalence of diabetes was stable during the previous 10 years, the actual number of patients steadily increased, with this likely due to the increased elderly population. Awareness and treatment rates of diabetes in the elderly population were 76.4% and 73.3%, respectively. The control rate was low (28.3%) based on HbA1c level $< 6.5\%$ but was much higher (77.0%) at HbA1c level $< 7.5\%$. The rate of triple goal achievement (HbA1c $< 6.5\%$, blood pressure 140/90 mm Hg, and low-density lipoprotein-cholesterol < 100 mg/dL) was only 13.6% but increased to 36.0% when the HbA1c criterion was switched to $< 7.5\%$. The prevalence of comorbidities such as abdominal obesity, hypertension, and hypercholesterol-

emia was approximately 70%. In the elderly population, total daily energy intake remarkably decreased, but the proportion of carbohydrate intake increased. These data show the need for proper management strategies for elderly patients with diabetes.

Management of diabetes in this vulnerable population requires a comprehensive approach that acknowledges the unique challenges faced by older adults. The American Diabetes Association recommends screening for geriatric conditions such as polypharmacy, cognitive impairment, depression, urinary incontinence, falls, persistent pain, and frailty as they may affect diabetes self-management and diminish quality of life [3]. Multiple comorbidities due to age-related changes in metabolism, reduced physical activity, and cognitive decline may complicate diabetes management. Diabetic complications can be more severe in older people, leading to increased risk of cardiovascular diseases, kidney problems, neuropathy, and visual impairment [4]. Interactions between medications for different health conditions also need to be considered to avoid adverse effects [5]. Consequently, these complications and comorbidities may impact individual independence, overall health, and healthcare costs. Elderly people may face difficulties in adhering to complex diabetes management due to limited mobility, financial constraints, or lack of social support; this can lead to unhealthy lifestyle habits. Moreover, health disparities are of greater concern in the elderly.

The target goals for glucose control in the elderly should be individualized based on factors such as overall health status,

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life expectancy, coexisting medical conditions, cognitive function, and functional abilities. For most elderly individuals, a less stringent HbA1c target is often recommended compared to younger adults with diabetes. The American Diabetes Association recommend an HbA1c target <7.0% to 7.5% for healthy older adults with few coexisting chronic illness, intact cognitive and functional status, and longer remaining life expectancy. For those with multiple comorbidities, mild-to-moderate cognitive impairment, intermediate remaining life expectancy, and hypoglycemia vulnerability, higher HbA1c target of <8.0% may be considered to avoid hypoglycemia and to improve overall quality of life. Preventing hypoglycemia is critical in elderly patients due to blunted hypoglycemia awareness and the potential serious consequences, such as falls, confusion, and cardiovascular events. In people with very complex/poor health and limited remaining life expectancy, the goal of glucose control should be to avoid hypoglycemia and symptomatic hyperglycemia [3]. The Korean Diabetes Association recommends target HbA1c <7.5% in elderly patients, but to individualize the goal based on health status and frailty scale [6].

Advancements in medical technology and the growing fields of personalized medicine and remote monitoring offer promising avenues for tailoring diabetes management to individual needs. For example, continuous glucose monitoring systems and connected insulin pens can facilitate real-time data tracking, allowing healthcare providers to make data-driven treatment decisions for better outcomes [7]. This may aid in preventing acute hyperglycemic complications and hypoglycemia, which is often neglected in elderly people. However, evidence on the efficacy of these new technologies in older patients is limited. For patients with frailty and immobility, telemedicine and virtual consultations might enable regular checkups, medication adjustments, and lifestyle counseling by reducing barriers to access and increasing adherence to treatment, although its benefit in clinical outcomes needs further clarification [8]. Also, developing geriatric-focused diabetes education programs can empower them with knowledge and skills to self-manage their diabetes. These programs should focus on diet and exercise capacity and should consider cognitive and learning abilities in older adults. A holistic approach to diabetes management involving a multidisciplinary team of healthcare professionals can ensure comprehensive support for elderly patients. Investing in public health initiatives targeting the prevention and early detection of diabetes in the elderly can have a significant impact on reducing the burden of the disease, especially

because a considerable proportion of the elderly with diabetes are unaware of their disease status.

Collectively, managing diabetes in the elderly population demands a personalized, evidence-based, and multidimensional approach. It is essential that both healthcare systems and society support the elderly population to receive appropriate care for better controlled diabetes and enhanced quality of life.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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