Diabetes in Older Adults

Preface

Medha Munshi, MD

Each of us in every field of medicine is experiencing the effects of an aging population. The population of people over the age of 65 years in the United States is expected to greatly increase, reaching up to 70 million by the year 2030. The prevalence of diabetes in this older population is thought to be ~ 20%, compared to ~ 6% in younger populations. Older adults with diabetes constitute > 40% of all adults with type 2 diabetes.[1,2]

As we get better at treating chronic diseases in elderly patients, it becomes clear that treatment strategies need to be altered and tailored to the unique needs and challenges faced by these patients. Management of diabetes in the elderly requires additional considerations because of the need for patient self-management. The number of elderly patients with diabetes is projected to increase significantly in the near future, and thus the medical community providing diabetes care needs to be aware of the differences in appropriate treatment strategies for diabetes management in elderly patients versus younger adults.

In this From Research to Practice section, we have focused on unique aspects of the care of older adults with diabetes. In our first article (p. 221), Steven R. Gambert, MD, and Sally Pinkstaff, MD, PhD, describe the epidemiology, pathophysiology, and overall burden of aging and diabetes. Next, Alan J. Sinclair, MSc, FRCP (Edin), FRCP (Lond), discusses the challenges of treating multiple medical comorbidities in the elderly (p. 229). Emmy Suhl, MS, RD, LD, CDE, and Patrica Bonsignore, MS, RN, CDE, describe educational and nutritional strategies for older adults with diabetes (p. 234). And, finally, Linda B. Haas, PhC, RN, CDE, focuses on numerous challenges facing older adults who are community-dwelling, including polypharmacy, decreased cognition, deficiencies in activities of daily living, functional impairment, decreased health literacy, depression, financial problems, and increased risk of falling (p. 240). She offers information about resources available to assist in addressing these important concerns.

Some of these issues, especially the need to screen for common comorbidities such as cognitive dysfunction, depression, and functional disabilities, are not well recognized by diabetes care providers. Unlike the treatment for many other chronic illnesses, diabetes care is dependent on patients' ability to manage their illness. The ability to perform self-management, including monitoring blood glucose, modifying diet, getting regular physical activity, and understanding and following complex medication and insulin regimens, is affected by the presence of these coexisting conditions.

In addition, complications of the treatment of diabetes, especially hypoglycemia, lead to precipitation of adverse events in cardiovascular and cerebrovascular diseases and accelerate cognitive dysfunction. In frail elderly patients with multiple comorbidities, even mild hypoglycemia can result in poor outcomes (e.g., confusion, dizziness, or weakness leading to falls and fractures) with resultant nursing home placement. The presence of any of these conditions affects diabetes care, reducing patients' ability to perform self-care and follow diabetes treatment plans safely.

Another important aspect of caring for chronic diseases in older adults is the rapidly growing cost of health

care. The combined direct and indirect costs of health care associated with diabetes were estimated to be $132 billion in 2002 and are projected to increase to $192 billion by 2020.[3] Patients with type 2 diabetes have more frequent emergency room visits and hospitalizations and longer hospital stays. Compared with their younger counterparts, elderly patients with diabetes had a higher rate of diabetes-related hospitalizations. They incurred 65.1% of all diabetes-related health care expenditures, compared with 34.8% for patients < 65 years of age.[4] The expenditures attributable to diabetes are greatest for hospital inpatient stays ($40.3 billion), followed by nursing home care ($13.9 billion) and physician office visits ($10 billion).

Several studies have shown that aggressive, comprehensive treatment of diabetes can result in economic savings. In one study,[5] an intervention that resulted in 15 weeks of improved glycemic control was shown to lead to improvements in functional status, overall activity, and multiple components of quality of life, including cognitive functioning. Based on such data, it is clear that we need new and innovative approaches to care for this population in a way that integrates disease management with care management. Disease management (treatment planning, focusing on the entire spectrum of the disease, its complications, and prevention of comorbid conditions), as well as care management (a set of activities whereby the needs of populations of patients at risk for excessive resource utilization, poor outcomes, or poor coordination of services are identified and addressed through improved planning, coordination, and provision of care)[6] can optimize the care of elderly patients with diabetes cost effectively. Although implementation of disease and care management in the elderly can be more time consuming than in young adults with diabetes, the burden to society will be several times higher if the challenges in diabetes management for this population are left unaddressed.

Finally, maintaining acceptable quality of life remains the primary goal in caring for older adults. Management plans that overwhelm these patients physically, emotionally, or financially should be carefully avoided.

In summary, the important differences that set diabetes care for older adults with diabetes apart from diabetes care for younger adults are:

- Elderly patients with diabetes are clinically and functionally a heterogeneous population. The spectrum of clinical condition varies from individuals with few stable medical comorbidities to patients with many disabling medical conditions requiring polypharmacy.[7] Similarly, functionality varies from highly functional independent individuals to functionally impaired patients requiring significant support and caregiving.
- Adverse clinical, functional, and social circumstances act as barriers to elderly patients' ability to perform self-management.
- The risks of tight glycemic control may outweigh the benefits in vulnerable elderly patients because these risks, especially hypoglycemia, can lead to poor outcome (e.g., injurious falls).
- The goals of glycemic control and risk factor management in elderly patients should be formulated after consideration of their clinical and functional status and life expectancy.

Taking care of individuals at either end of the spectrum of life is challenging. With a large increase in the population > 85 years, our challenge is obvious and pressing. We would not dream about treating a 10-year-old child like a 40-year-old adult. Similarly we must learn a different approach in taking care of elderly so as not to treat a 90-year-old patient like a 40-year-old patient. Treatment strategies that consider coexisting medical conditions along with elderly patients' functional and social milieu can improve not only glycemic control but also other morbidities and overall quality of life.

References

[1]Harris MI, Flegal KM, Cowie CC, Eberhardt MS, Goldstein DE, Little RR, Wiedmeyer HM, Byrd-Holt DD: Prevalence of diabetes, impaired fasting glucose, and impaired glucose tolerance in U.S. adults: the Third National Health and Nutrition Examination Survey, 1988–1994. *Diabetes Care* 21: 518–524, 1998

[2]Blaum CS, Ofstedal MB, Langa KM, Wray LA: Functional status and health outcomes in older Americans with diabetes mellitus. *J Am Geriatr Soc* 51:745–753, 2003

[3]Hogan P, Dall T, Nikolov P: Economic costs of diabetes in the U.S. in 2002. *Diabetes Care* 26:917–932, 2003

[4]American Diabetes Associatrion: Economic consequences of diabetes mellitus in the U.S. in 1997. *Diabetes Care* 21:296–309, 1998

[5]Testa MA, Simonson DC: Health economic benefits and quality of life during improved glycemic control in patients with type 2 diabetes mellitus: a randomized, controlled, double-blind trial. *JAMA* 280:1490–1496, 1998

[6]Norris SL, Nichols PJ, Caspersen CJ, Glasgow RE, Engelgau MM, Jack L, Isham G, Snyder SR, Carande-Kulis VG, Garfield S, Briss P, McCulloch D: The effectiveness of disease and case management for people with diabetes: a systematic review. *Am J Prev Med* 22 (Suppl. 4):15–38, 2002

[7]Brown AF, Mangione CM, Saliba D, Sarkisian CA: Guidelines for improving the care of the older person with diabetes mellitus. *J Am Geriatr Soc* 51(Suppl. 5):S265–S280, 2003