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# CLINICS IN GERIATRIC MEDICINE

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Diabetes

GUEST EDITOR  
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**SAUNDERS**

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Diabetes mellitus has long been recognized as a cause of accelerated aging. As the understanding of the metabolic syndrome has evolved, it has been recognized that the interaction of a panoply of factors in the presence of insulin resistance results in accelerated aging. This article explores the increasing prevalence of diabetes mellitus with aging and how insulin resistance leads to accelerated frailty, disability, hospitalization, institutionalization, and death.

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Diabetic neuropathy is a heterogeneous disease with diverse pathology. Recognition of the clinical homolog of these pathologic processes is necessary in achieving appropriate intervention. Treatment should be individualized so the particular manifestation and underlying pathogenesis of each patient's clinical presentation are considered. In older adults, special care should be taken to manage pain while optimizing daily function and mobility, with the fewest adverse medication side effects. Older adults are at great risk for falling and fractures because of instability and weakness, and require strength exercises and coordination training. Ultimately agents that address large fiber dysfunction will be essential to reduce the gross impairment of quality of life and activities of daily living that neuropathy visits older people who have diabetes.

**Insulin Resistance Syndrome and Glucose Dysregulation  
in the Elderly**

Angela D. Mazza

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The incidence of insulin resistance in the geriatric population is growing as this population grows. The management of hyperglycemia and its associated risk factors depends on an expanding understanding of the underlying pathophysiology and progression of disease and of the currently available and future therapeutics, which are continually evolving. There is a major need for studies in the long-term care setting to determine the appropriate standard of care in prevention and treatment of metabolic dysregulation.

**Diabetes, Sarcopenia, and Frailty**

John E. Morley

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Frailty is a pre-disability condition. It now can be defined clinically. The major factors leading to frailty are sarcopenia and a decline in executive function. Stressors precipitate frail individuals into a state of disability. Diabetics develop the conditions necessary for frailty earlier than other aging individuals. Appropriate treatment of diabetes mellitus and frailty precursors can result in a slowing of the aging process.

**Hyperlipidemia in the Elderly**

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People are now living longer, largely because of a combination of falling rates of fertility and mortality, thus producing a greater proportion of older people in society. Thirty times more centenarians were alive in 2000 than in 1900, and the population growth in the elderly segment of society is expected to continue at an exponential rate. Vascular disease is responsible for more than a quarter of all deaths worldwide. More than 80% of individuals who die of coronary heart disease are older than 65 years. Although a myocardial infarction may be perceived as fatal, heart attacks do not always lead to death but to conditions such as congestive heart failure, ischemic cardiomyopathy, and angina, which greatly impact quality of life. These issues are only a few that must be contemplated when considering the clinical and economic effects of preventive therapies in the elderly population.

**Hypertension and the Older Diabetic**

Wilbert S. Aronow

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Hypertension is a common comorbidity in persons with diabetes mellitus, and its prevalence increases with advancing age. Both diabetes mellitus and hypertension are independent risk factors for development in older persons of coronary artery disease, ischemic

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stroke, peripheral arterial disease, and of congestive heart failure. This article reviews studies addressing the implications of hypertension and the older diabetic.

**Nutrition and the Older Diabetic**  
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Diabetes mellitus is among the most common and complex chronic diseases that affect approximately 20 million individuals in the United States. An additional 26% of the population has impaired fasting glucose, making diabetes an epidemic. MNT in diabetes addresses not only glycemic control but also other aspects of metabolic status, including hypertension and dyslipidemia, which are major risk factors for cardiovascular disease. MNT is an integral component of diabetes management, which includes the process and system through which nutritional care and specific life style recommendations are provided to diabetic individuals. Cultural and ethnic preferences are taken into account and patients are involved in the decision-making process.

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**Eye Disease and the Older Diabetic**  
Nina Tumosa

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Elderly diabetic persons are 1.5 times more likely than age-matched nondiabetic persons to develop vision loss and blindness. Annually, between 12,000 and 24,000 diabetic patients in the United States become legally blind because of complications caused by diabetic retinopathy. Even more diabetic persons experience vision loss caused by comorbid ocular and periocular conditions such as dry eye syndrome, cataracts, macular degeneration, and glaucoma. This article discusses the synergy between these conditions and diabetes. Standards of care that slow the progression of vision loss and exciting new research on new strategies of care that may reverse vision loss are presented.

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**Anemia in Diabetic Patients**  
David R. Thomas

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Anemia is common in diabetic patients and is associated with increased morbidity and mortality. The observations that diabetes-related chronic kidney disease is more common than chronic kidney disease of other etiologies, that anemia may occur earlier in diabetes-related chronic kidney disease than in other types of chronic kidney disease, and that anemia in diabetes-related kidney disease often is found without measurable renal impairment suggest that the diabetic population may have a predilection to the development of anemia. Anemia is associated with a poorer prognosis in diabetic-associated comorbid conditions, but targeted correction of anemia has improved diabetic patients' quality of life.

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**Oral Diabetic Medications and the Geriatric Patient** 541  
Alan B. Silverberg and Kenneth Patrick L. Ligaray

Current medications for management of diabetes mellitus in older individuals include first and second generation sulfonylurea medications, meglitinides, incretin medications, alpha glucosidase inhibitors, metformin, and thiazolidinediones. This article discusses indications for their usage, along with their beneficial and adverse effects.

**Diabetic Foot Management in the Elderly** 551  
E. Sharon Plummer and Stewart G. Albert

Guidelines for diabetes foot care are available and should be part of the routine care and evaluation of all elderly patients who have diabetes. Those individuals who have good sensation, good vascularity, without foot deformities, and are capable of reaching and seeing their feet may do well with education and reasonable approaches to footwear and foot care. Those who have advanced diabetic complications of neuropathy or vascular insufficiency should be seen by professionals and given intensive education. An experienced team familiar with the progression of illness should follow those who have ulcers. Guidelines are presented for the management of outpatient and inpatient therapy of foot ulcers.

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