Parkinson's Disease (See also Chap. 449) Most cases of PD begin after the age of 60 years, and the incidence increases up to the age of ~80 years. Brain aging and PD have long been thought to be related. The nigrostriatal system deteriorates with aging, and many older persons tend to develop a mild form of movement disorder characterized by bradykinesia and stooped posture that mimics mild PD. It is interesting that, in PD, older age at presentation is associated with a more severe and rapid decline in gait, balance, posture, and cognition. These age-related motor and cognitive manifestations of PD tend to be poorly responsive to levodopa or dopamine agonist treatments, especially in the oldest old. In contrast, age at presentation does not correlate with the severity and progression of other classic PD symptoms, such as tremor, rigidity, and bradykinesia, nor does it affect the response of these symptoms to levodopa. The pattern of PD features in older persons suggests that late-life PD may reflect a failure of the normal cellular compensatory mechanisms in vulnerable brain regions and that this vulnerability is increased by age-related neurodegeneration, making PD symptoms particularly resistant to levodopa treatment. In addition to motor symptoms, older PD patients tend to have reduced muscle mass (sarcopenia), eating disorders, and poor levels of fitness. Accordingly, PD is a powerful risk factor for frailty and its consequences, including disability, comorbidity, falls, incontinence, chronic pain, and delirium. Use of levodopa and dopaminergic agonists by older PD patients requires complex dosing schedules; therefore, slow-release preparations are preferred. Both dopaminergic and anticholinergic agents increase the risk of confusion and hallucinations. Use of anticholinergic agents should generally be avoided. For dopaminergic agents, cognitive side effects can be dose limiting.

Diabetes (See also Chaps. 417–419) Both the incidence and the prevalence of diabetes mellitus increase with aging. Among persons ≥65 years old, the prevalence is ~12% (with higher figures among African Americans and Hispanics), reflecting the effects of population aging and the obesity epidemic. Diabetes affects all four main aging systems that contribute to frailty. Obesity, especially visceral obesity, is a strong risk factor for insulin resistance, the metabolic syndrome, and diabetes. Diabetes is associated with both reduced muscle mass and accelerated rates of muscle wasting. Diabetic patients have an elevated RMR and a poor degree of fitness. Diabetes is associated with multiple hormone dysregulation, a proinflammatory state, and excess oxidative stress. Finally, diabetes-induced neurodegeneration involves both the central and peripheral nervous systems. Given these characteristics, it is not surprising that patients with diabetes mellitus are more likely to be frail and at high risk of developing physical disability, depression, delirium, cognitive impairment, urinary incontinence, injurious falls, and persistent pain. Thus, the assessment of older diabetic patients should always include screening and risk factor evaluation for these conditions.

In young and adult patients, the main treatment goal has been strict glycemic control aimed at bringing the hemoglobin A1c level to within normal values (i.e., ≤6%). However, the risk/benefit ratio is optimized by the use of less aggressive glycemic targets. In fact, in the context of a randomized clinical trial, strict glycemic control was associated with a higher mortality rate. Thus, a more reasonable goal for hemoglobin A1c is 7% or slightly below. Treatment goals are altered further in frail older adults who have a high risk of complications of hypoglycemia and a life expectancy of <5 years. In these cases, an even less stringent target (e.g., 7–8%) should be considered, with A1c monitored every 6 or 12 months. Hypoglycemia is particularly difficult to identify in older diabetic patients because autonomic and nervous system symptoms occur at a lower blood sugar level than in younger diabetics, although the metabolic reactions and neurologic injury effects are similar in the two age groups. The autonomic symptoms of hypoglycemia are often masked by beta blockers. Frail older adults are at even higher risk for serious hypoglycemia than are healthier, higher-functioning older adults. In older patients with type 2 diabetes, a history of severe hypoglycemic episodes is associated with higher mortality risk, more severe microvascular complications, and greater risk of dementia. Thus, patients with suspected or documented episodes of hypoglycemia, especially those who are frail or disabled, need more liberal glucose-control goals, careful education about hypoglycemia, and close follow-up by the health care provider, possibly in the presence of a caregiver. Chlorpropamide has a prolonged half-life, particularly in older adults, and should be avoided because it is associated with a high risk of hypoglycemia. Metformin should be used with caution and only in patients free of severe renal insufficiency. Renal insufficiency should be assessed by a calculated glomerular filtration rate or, in very old patients who have reduced muscle mass, by a direct measure of creatinine clearance from a 24-h urine collection. Lifestyle changes in diet and exercise and a little weight loss can prevent or delay diabetes in high-risk individuals and are substantially more effective than metformin treatment. The risk of type 2 diabetes decreased by 58% in a study of diet and exercise, and this effect was similar at all ages and in all ethnic groups. The risk reduction with standard care plus metformin was 31%.

APPROACH TO THE CARE OF OLDER PERSONS

Effects of Altered Pathophysiology and Multimorbidity on Clinical Decision-Making The fact that older people are more likely to have atypical manifestations of disease and multiple coexisting conditions has serious consequences for the availability of high-quality evidence for medical practice and clinical decision-making. Randomized clinical trials—the basis for high-quality evidence—have tended to exclude older persons with atypical manifestations of disease, multimorbidity, or functional limitations. Across a wide range of conditions, the average age of a clinical trial participant is 20 years younger than the average age of the population with the condition. Clinical practice guidelines and care-quality metrics are focused on one condition at a time and tend not to consider the impact of comorbid conditions on the safety and feasibility of each set of recommendations. These disease-centric recommendations tend to result in fragmented care. Therefore, clinical decision-making with regard to an older person with multiple chronic conditions must be based on the weighing of several influential factors, including the patient's priorities and preferences, potential beneficial and harmful interactions among the several conditions and their treatments, life expectancy, and practical issues such as transportation, or ability to cooperate with the test or treatment.

Organization of Health Care for Older Adults The complex underlying physiology of aging leads to multiple coexisting medical problems and functional consequences that are often chronic, with recurrent exacerbations and remissions. Combined with the social consequences of aging (e.g., widowhood or lack of an available caregiver), these medical and functional factors mandate that older adults must sometimes use nonmedical services to meet functional needs. The end result of these medical, functional, and social factors is that older adults use many health care and social support services in a variety of settings. Thus, it is incumbent on the internist, whether a generalist or specialist, to be familiar with the scope of settings and services that are used by their patients.

For many settings, Medicare reimbursement requires a medical order based on specific indications, so the hospitalist or referring physician must be familiar with eligibility requirements. Table 11-5 summarizes the types of services and payment sources for common settings of care. Older adults who have experienced new disability during a hospitalization are eligible for rehabilitation services. Inpatient rehabilitation requires at least 3 h per day of active rehabilitative activity and is limited to specific diagnoses. More and more rehabilitative services are provided in postacute settings, where the required intensity of service is less stringent. Postacute settings are also used for complex nursing services such as provision and supervision of long-term parenteral medication use or wound care. Under current policy, Medicare covers postacute care only if there is an eligible medical, nursing, or rehabilitation service. Otherwise, nursing home care is not covered by Medicare and must be paid for with personal assets until all resources have been consumed, at which time Medicaid coverage becomes available.

Medicaid is a state–federal partnership whose greatest single expenditure is nursing home care. Thus, the need for chronic daily assistance with personal care in a nursing home consumes a large part of most state Medicaid budgets as well as personal assets. Accordingly, alternatives to chronic nursing-home care are of great interest to states, patients, and families. Some states have developed Medicaid-funded day-care programs, sometimes based on the Program for All-Inclusive