CHEST

Management of Idiopathic Pulmonary Fibrosis in the Elderly Patient

Addressing Key Questions

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Idiopathic pulmonary fibrosis (IPF) is strongly associated with advanced age. Making an accurate diagnosis of IPF is critical, as it remains only one of many potential diagnoses for an elderly patient with newly recognized interstitial lung disease. Optimal management of IPF, especially in older-aged patients, hinges on such factors as balancing the application of standard-of-care measures with the patient's overall health status (robustness vs frailty) and considering the patient's wishes, desires, and expectations. IPF is known to be associated with certain comorbidities that tend to be more prevalent in the elderly population. Until recently, options for the pharmacologic management of IPF were limited and included therapies such as immunosuppressive agents, which may pose substantial risk to the elderly patient. However, the antifibrotic agents pirfenidone and nintedanib have now become commercially available in the United States for the treatment of IPF. The monitoring and treatment of patients with IPF, especially elderly patients with comorbid medical conditions, require consideration of adverse side effects, the avoidance of potential drug-drug interactions, treatment of comorbidities, and the timely implementation of supportive and palliative measures. Individualized counseling to guide decision-making and enhance quality of life is also integral to optimal management of the elderly patient with IPF. CHEST 2015; 148(1):242-252

ABBREVIATIONS: 6MWT = 6-min walk test; ASCEND = Assessment of Pirfenidone to Confirm Efficacy and Safety in Idiopathic Pulmonary Fibrosis; CAD = coronary artery disease; CAPACITY = Clinical Studies Assessing Pirfenidone in Idiopathic Pulmonary Fibrosis: Research of Efficacy and Safety Outcomes; CPFE = coexistent pulmonary fibrosis with emphysema; CTD = connective tissue disease; D_{LCO} = diffusing capacity of lung for carbon monoxide; GER = gastroesophageal reflux; GERD = gastroesophageal reflux disease; HRCT = high-resolution CT; ILD = interstitial lung disease; INPULSIS = Safety and Efficacy of BIBF 1120 at High Dose in Idiopathic Pulmonary Fibrosis Patients; IPF = idiopathic pulmonary fibrosis; NAC = N-acetylcysteine; PH = pulmonary hypertension; SLB = surgical lung biopsy; UIP = usual interstitial pneumonia

Achieving age 65 years or older is generally defined as elderly in developed countries and in the medical literature. Because of the aging process, elderly individuals display gradual organ system functional decline that is likely linked to cumulative damage to molecules, cells, and tissues that occurs over a lifetime.[1] However, there are considerable

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interindividual differences in the rate of decline. Some people maintain robust physiologic function well beyond their sixth decade of life, whereas others may be seriously challenged by progressive organ system dysfunction and frailty as they age (Table 1).[2,3]

Various types of interstitial lung disease (ILD) can affect individuals of any age, but idiopathic pulmonary fibrosis (IPF) stands out as a form of ILD strongly associated with advanced age, with resultant high prevalence in the elderly.[4,5] The clinical evaluation of an elderly individual with possible IPF should seek to balance attaining a confident diagnosis while also minimizing risk of harm to the patient. Subsequent management of elderly patients with IPF should include personalized, targeted therapy that optimizes quality of life and survival but limits the risk of significant adverse events associated with any recommended treatment. This article reviews and examines key issues faced by clinicians evaluating and managing IPF in elderly patients.

How Should a Confident Diagnosis Be Made in the Elderly Patient?

IPF is one of many potential diagnoses for a patient with newly recognized ILD. Therefore, accurately diagnosing IPF remains one of the most basic, yet critical steps in providing optimal care for the elderly patient with ILD.[6,7] The American Thoracic Society/European Respiratory Society/Japanese Respiratory Society/Latin American Thoracic Association consensus statement on the diagnosis and management of IPF provides a useful diagnostic algorithm for evaluating a patient with possible IPF.[8]

Most elderly patients with new-onset ILD present with symptoms including dyspnea with exertion, cough, or fatigue. Less commonly, patients are identified when interstitial abnormalities are incidentally detected on radiographs obtained for other purposes. With increasing acceptance of screening CT scan of the chest, it is likely that more cases of ILD in the elderly will emerge. The initial evaluation of a patient with suspected ILD should include careful physical examination that may identify basilar crackles on lung auscultation and the variable presence of digital clubbing. Pulmonary function testing usually shows a reduced FVC and total lung capacity as well as a reduced single breath diffusing capacity of lung for carbon monoxide (DLCO). If symptoms, signs, and physiology are consistent with a restrictive lung disease, then the diagnosis of IPF should be explicitly considered.

The best test for radiographic diagnostic assessment is a noncontrast, thoracic high-resolution CT (HRCT) scan (1-2 mm cuts) performed at full inspiration with supine, prone, and expiratory imaging. Findings consistent with a definite usual interstitial pneumonia (UIP) pattern on HRCT scanning allow clinicians to make a confident diagnosis of IPF. These HRCT scan features include changes that are subpleural, predominantly affecting the lung bases, reticular changes, honeycombing with or without traction bronchiectasis, and the absence of features inconsistent with a UIP pattern. Advanced age combined with extensive interstitial fibrosis on HRCT scanning is highly predictive of a diagnosis of IPF.[9]

The next (and most important) step is the exclusion of alternative causes that include pneumotoxic drug reactions caused by commonly used medications (eg, amiodarone, methotrexate, nitrofurantoin), ILD associated with the presence of connective tissue disease (CTD), and ILD caused by occupational or environmental exposures. Other prominent mimics of IPF include

TABLE 1] Characteristics of Fit vs Frail Elderly Individuals

Fit Elderly	Frail Elderly
Live independently at home or in sheltered accommodation	Dependent on others for activities of daily living
Freely ambulant	Often in institutional care
Lack significant hepatic, renal, cardiac, respiratory, or metabolic disorder on either clinical examination or laboratory investigation	Not independently mobile
Do not receive regularly prescribed medication	Minor abnormalities of organ system function may be revealed on laboratory investigation
	May require regularly prescribed drug therapy
	Exhibit diminished plasma drug protein binding (largely attributable to reduced serum albumin concentration)
	Exhibit impaired homeostasis mechanisms and reduced adaptability
	Show exaggerated responses to many drugs