The Evaluation of Patients with Interstitial Lung Disease (ILD) Now That We Have Drugs for IPF

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Objectives

- Identify new drugs for IPF
- Understand the challenges of making the correct diagnosis of IPF vs the other ILDs
- Recognize the importance of communication between clinicians, radiologists, and pathologists in making the diagnosis of IPF and other ILDs
New Drugs for IPF

• Two drugs approved by FDA in October for IPF
  – Pirfenidone
  – Nintedanib

• Only indicated for IPF. We have no idea what effect these drugs would have on other ILDs.

• We know that immunosuppressive drugs given to patients with IPF are associated with worse outcomes.
Classification of ILD

Diffuse Parenchymal Lung Disease

- DPLD of known cause (e.g., drugs or association, collagen vascular disease)
- Idiopathic interstitial pneumonias
- Granulomatous DPLD (e.g., sarcoidosis)
- Other forms of DPLD (e.g., LAM, LCH)

Idiopathic pulmonary fibrosis
- Desquamative interstitial pneumonia
- Acute interstitial pneumonia
- Nonspecific interstitial pneumonia (provisional)

IIP other than idiopathic pulmonary fibrosis
- Respiratory bronchiolitis interstitial lung disease
- Cryptogenic organizing pneumonia
- Lymphocytic interstitial pneumonia
Overall Approach

- History, physical examination, chest radiograph, lung function tests
  - Not IIP (e.g., associated collagen vascular disease, environmental, drug related)
    - HRCT
      - Confident CT diagnosis of IPF with consistent clinical features
      - Atypical clinical or CT features for IPF
      - Features diagnostic of another DPLD (e.g., LCH)
      - Suspected other DPLD
        - TBBx or BAL?
        - If nondiagnostic
          - Surgical lung biopsy
            - UIP
            - NSIP
            - RB
            - DIP
            - DAD
            - OP
            - LIP
            - Non-IIP confirmed

- Possible IIP
  - TBBx, BAL or other relevant test

Morrison and Noble ACP Medicine
History and Physical Exam

- Symptoms and time frame of illness
- Symptoms of systemic disorder
- Smoking history
- Occupational, environmental, and drug history
- Family history of lung disease
- Examination looking for systemic disease
Laboratory

- Complete blood count and differential
- Complete biochemical screening profile
- ESR, CRP
- SACE
- Hypersensitivity pneumonitis profile
- BNP
- ANA profile, rheumatoid factor, CPK, other serologies
Pulmonary Function Tests

- Spirometry, lung volumes, diffusing capacity, ABG, exercise oximetry indicated

- Patterns can be helpful
  - ILD plus obstruction – sarcoid, LAM, hypersensitivity pneumonitis, COPD with ILD
  - ILD with normal lung volumes and very low DLCO – emphysema and ILD, pulmonary vascular disease, LCH, LAM
Chest Radiograph

- Unsurpassed in the amount of information obtained in relation to cost, radiation dose, availability, ease of performance
- Useful for detection of ILD but can be “normal” in up to 10-15% of cases. Sensitivity – 80%, specificity – 82%
- 23% of cases produce confident diagnosis, and only 77% of the cases with a confident diagnosis were correct
- Comparison to old films helpful in determining time course of illness. Abnormalities have often been missed or ignored
- Should lead to the HRCT of the chest
High Resolution CT Scan

- Has become the important tool for detection and differential diagnosis
- Must be high resolution – ideally ≤1.25mm cuts. Contrast not needed in most cases.
- Radiation dose = ~300 frontal CXR’s
- Must be read by a radiologist or pulmonologist with expertise in the interpretation of HRCT in patients with ILD
Bronchoscopy with Bronchoalveolar Lavage

• Very helpful in the diagnosis of infection

• Can be diagnostic in chronic beryllium disease (+LTT), carcinoma and lymphoma, lipoid pneumonia, alveolar hemorrhage, alveolar proteinosis, eosinophilic pneumonia

• Use in other diseases questionable

• Differential cell count can help narrow the differential diagnostic possibilities
  
  – Increased lymphocytes – sarcoidosis, berylliosis, hypersensitivity pneumonitis, LIP, NSIP
  
  – Increased neutrophils and eosinophils – IPF, ILD associated with CVD
Bronchoscopy with TBLB

- Indicated in some patients based on the leading diseases in the differential diagnosis
- Diseases commonly diagnosed by TBLB
  - Sarcoidosis esp with EBUS
  - Infections
  - Lymphangitic carcinomatosis, lymphoma
  - Eosinophilic pneumonia
  - Alveolar hemorrhage
  - Pulmonary Langerhan’s cell histiocytosis
  - Pulmonary alveolar proteinosis
  - LAM
  - DIPNECH
- The diagnosis must be specific – pulmonary fibrosis on a TBLB is NOT diagnostic
Open Lung Biopsy

- Often needed when prior workup does not yield a definitive diagnosis
- Must be performed by a surgeon that knows how to obtain diagnostic biopsies with the least morbidity/mortality (VATS vs OLB)
Interpretation of Lung Biopsy

- Must be interpreted by a pathologist that is expert in non-neoplastic lung disease
- In our experience, the interpretations of general community pathologists are wrong at least 50% of the time
- Often these incorrect diagnoses have resulted in inappropriate therapy, harmful therapy, or lack of therapy, and much suffering from the anticipated poor prognosis
Role of Interdisciplinary Conference

• From the 2011 ATS guidelines for IPF recommendation #3:
  – “The accuracy of the diagnosis of IPF increases with multidisciplinary discussion between pulmonologists, radiologists, and pathologists experienced in the diagnosis of ILD.

• We are going to demonstrate the process of a multidisciplinary ILD conference