**INTRODUCTION**

- Idiopathic pulmonary fibrosis (IPF).
- Chronic, progressive, interstitial lung disease of unknown cause that occurs predominantly in older adults.
- Median survival from diagnosis is approximately 3 years.
- IPF is associated with an increased risk of cardiovascular (CV) comorbidities.

**AIM**

To determine the risk of CV comorbidities among Medicare patients with IPF.

**METHODS**

**Study Design**

- Retrospective cohort study using Medicare data to examine CV and other comorbidities among beneficiaries with IPF compared to beneficiaries without IPF.

**Patient Selection**

- IPF Patient Selection Criteria
  - Patients newly diagnosed with IPF were identified in the Medicare Research Case Identifiable Files (100% of beneficiaries) between 1/1/2010 and 12/31/2010 (identification [ID] period). An IPF patient was defined as following the meeting 3 criteria:
    - ≥ 1 inpatient claim or ≥ 2 outpatient claims (within 12 months) with IPF as a listed diagnosis (ICD-9-CM: 513.6) in the ID period.
    - Had no claim with codes for "other interstitial lung diseases" (ICD-9-CM: 500.9, 506.x, 508.x, 516.0, 516.1, 516.2, 516.8, 516.9, 517.2, 518.3, 518.9, 520.x, 520.9, 521.x, 521.9, 522.x, 522.9, 523.9, 524.x, 524.9, 525.x, 525.9, 526.x, 526.9, 527.x, 527.9, 533.x, 535.x, 537.x).
    - Had no claims with codes for prior myocardial infarctions, other acute and subacute forms of IHD, angina, and other chronic IHD, congestive heart failure, venous thromboembolism, stroke, and atrial fibrillation.
- General comorbidity measures were measured using inpatient, outpatient, and carrier (physician) claims files basing the baseline period.

**RESULTS**

- We identified 13,615 IPF patients and their matched controls (Figure 1).
- Mean age (SD) in the groups was 78.9 years (7.1).
- 50.3% were male.
- Compared to controls, patients had Table 1: (Table 1).
- Greater number of chronic conditions (mean [SD] 6.3 [2.2] vs 4.7 [2.4]; P<.001).
- Higher Charlson Comorbidity Index (3.6 [2.9] vs 2.3 [2.7]; P<.001).
- Rates of CV comorbidities were consistently higher in IPF patients, overall (RD: 23.4%) and by condition: Table 2.
  - Congestive heart failure (RD: 19.8%).
  - Ischemic heart disease (RD: 17.6%).
  - Atrial fibrillation (RD: 8.2%).
  - Venous thromboembolism (RD: 4.7%).
  - Stroke (RD: 0.9%).

**CONCLUSION**

- Newly diagnosed IPF patients are typically sicker than non-IPF patients and have significantly higher rates of CV conditions prior to diagnosis.
- The higher rate of CV conditions needs to be taken into consideration for the management and treatment of patients with IPF.

**REFERENCES**


**Table 1:** Demographic and General Comorbidity Characteristics of Matched IPF and DFC Patients

<table>
<thead>
<tr>
<th>Measure</th>
<th>Matched IPF Patients</th>
<th>Matched DFC Patients</th>
<th>Risk Difference (%)</th>
<th>P Value</th>
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<tbody>
<tr>
<td>Age, year, mean (SD)</td>
<td>78.9 (7.1)</td>
<td>78.7 (7.3)</td>
<td>0.9</td>
<td>.27 230</td>
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<tr>
<td>Female, no. (%)</td>
<td>7,068 (49.7)</td>
<td>7,606 (49.7)</td>
<td>7,536 (49.7)</td>
<td>.47 230</td>
</tr>
<tr>
<td>Region, no. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midwest</td>
<td>3,499 (25.7)</td>
<td>3,499 (25.7)</td>
<td>6,998 (25.7)</td>
<td>.7 230</td>
</tr>
<tr>
<td>Northeast</td>
<td>2,559 (18.8)</td>
<td>2,559 (18.8)</td>
<td>5,118 (18.8)</td>
<td>.3 230</td>
</tr>
<tr>
<td>South</td>
<td>5,238 (38.5)</td>
<td>5,238 (38.5)</td>
<td>10,476 (38.5)</td>
<td>.004 230</td>
</tr>
<tr>
<td>West</td>
<td>2,311 (17.0)</td>
<td>2,311 (17.0)</td>
<td>4,622 (17.0)</td>
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<tr>
<td>Other/Less</td>
<td>0 (0.1)</td>
<td>0 (0.1)</td>
<td>0 (0.1)</td>
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<tr>
<td>Other/Less/Less</td>
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<td>0 (0.1)</td>
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</table>

**Table 2:** Association between Cardiovascular Conditions and Idiopathic Pulmonary Fibrosis

<table>
<thead>
<tr>
<th>Condition</th>
<th>Matched IPF Patients</th>
<th>Matched DFC Patients</th>
<th>Difference (%)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary hypertension</td>
<td>903 (6.6)</td>
<td>1,047 (7.7)</td>
<td>13,536 (49.7)</td>
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<tr>
<td>Venous thromboembolism</td>
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<td>5,238 (38.5)</td>
<td>10,476 (38.5)</td>
<td>.004 230</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>2,311 (17.0)</td>
<td>2,311 (17.0)</td>
<td>4,622 (17.0)</td>
<td>.004 230</td>
</tr>
<tr>
<td>Stroke</td>
<td>0 (0.1)</td>
<td>0 (0.1)</td>
<td>0 (0.1)</td>
<td></td>
</tr>
</tbody>
</table>