Health related quality of life measures in Idiopathic Pulmonary Fibrosis (IPF): Longitudinal evaluation

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Good Morning

Madainn mhath
ILD
[>200 entities]

- Connective Tissue Disease ILD
- ILD of known Cause e.g. medicines;
- Idiopathic Interstitial Pneumonias [IIP]
- Granulomatous ILD e.g. Sarcoidosis
- Other forms of ILD e.g. LAM

IIP other than IPF

Usual Interstitial Pneumonia [UIP]

Non-specific Interstitial pneumonia [NSIP]
Approximately 15,000 people in the UK have a diagnosis of IPF
Estimated number of deaths from idiopathic pulmonary fibrosis clinical syndrome, age standardised to the 2008 population of England and Wales.

Mortality trends in England and Wales

- Expected number of deaths

![Graph showing mortality trends from 1968 to 2008.](image)


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Disease Progression

Diagram showing the progression of disease over time, with stages labeled as Onset of Disease, Onset of Symptoms, Diagnosis, and Death. The timeline ranges from 1 to 6 years. The diagram indicates sub-clinical, pre-diagnosis, and post-diagnosis periods. Lines labeled A, B, C, and D represent different trajectories. The diagram also includes a patient group illustration.
Idiopathic Pulmonary Fibrosis

Progressive scarring
Goals of Management: curative?

- Fatigue
- Anxiety
- Cough
- Breathlessness

- Improve QoL
- Access to Specialist Care
- Prevention/manage exacerbations
- Symptom Control

Palliation
Rationale

- The management of Idiopathic Pulmonary Fibrosis (IPF) presents a major challenge.
- Patients experience debilitating symptoms which impact upon quality of life.
- New therapies are being explored but there is, as yet, no validated systematic tool for measuring and monitoring HRQoL status in IPF.
- This study explores the value of contemporary HRQoL & symptom measures in an IPF.
Very common side effects (affects more than 1 user in 10):
- skin reactions after going out in the sun or using sunlamps
- feeling sick (nausea)
- tiredness
- diarrhoea
- indigestion or stomach upset.
Pirfenidone in patients with idiopathic pulmonary fibrosis (CAPACITY): two randomised trials

Primary End point:

Treatment effect of pirfenidone was measured by comparing the proportion of patients in the pirfenidone and placebo groups experiencing either: a clinically meaningful change in FVC or death

A 10% decline in FVC in an individual IPF patient is considered clinically meaningful and strongly predicts mortality
### Baseline Disease Severity

<table>
<thead>
<tr>
<th>FVC</th>
<th>FVC%</th>
<th>DLCo</th>
<th>DLCo %</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.61 ± 0.84</td>
<td>74.01 ± 19.31</td>
<td>3.63 ± 1.44</td>
<td>42.75 ± 15.02</td>
<td>49.26 ± 12.93</td>
</tr>
</tbody>
</table>

- 125 patients newly diagnosed with IPF, according to current criteria were recruited.

- Mean age 68.2 years (±8.1).
Idiopathic Pulmonary Fibrosis
A Composite Physiologic Index Derived from Disease Extent Observed by Computed Tomography

Athol U. Wells, Sujal R. Desai, Michael B. Rubens, Nicole S. L. Goh, Derek Cramer, Andrew G. Nicholson, Thomas V. Colby, Roland M. du Bois, and David M. Hansell

- 91.0 - (0.65 x percent predicted diffusing capacity for carbon monoxide [DLCO]) - (0.53 x percent predicted FVC) + (0.34 x percent predicted FEV1)

- CPI Score > 45 – severe disease
HRQoL & Symptom Measures

Participants completed:

- Hospital Anxiety & Depression scale (HADs)
- FACIT Fatigue Scale
- MRC dyspnoea Scale
- Leicester Cough Questionnaire (LCQ)
- St Georges Respiratory questionnaire (SGRQ (original))
- A Tool to Assess Quality of Life in Idiopathic Pulmonary Fibrosis (ATAQ-IPF-V2)

- at entry to the study; at six months and at twelve months – prior to PFTs
RESEARCH

Development of the ATAQ-IPF: a tool to assess quality of life in IPF

Jeffrey J Swigris¹*, Sandra R Wilson², Kathy E Green³, David B Sprunger¹, Kevin K Brown¹, Frederick S Wamboldt⁴

- The ATAQ is the first disease specific quality of life measure to be developed in IPF
- The validity of the ATAQ in an IPF population is as yet unknown
- 13 domains / 89 items

ST. GEORGE’S RESPIRATORY QUESTIONNAIRE
ORIGINAL ENGLISH VERSION

50 items
ATAQ correlates well with the SGRQ HRQoL measure ($R^s 0.72 \ p=0.00001$) according to Spearman rho coefficient.
ATAQ Total Score: FACIT Fatigue

R²=0.59 \( p\leq0.00001 \)
ATAQ Total Score: HADS Depression

$R^2 = 0.62 \ p \leq 0.00001$

ATAQ Total Score: HADS Anxiety

$R^2 = 0.65 \ p \leq 0.00001$
The cough domain of ATAQ has a stronger correlation with the total LCQ score ($R^s=0.44$ $p=0.00001$) than the ATAQ as a total score ($R^s=0.42$ $p=0.003$).
Baseline (B/L)– 12 Months

- 62 patients completed follow-up at 12 months
- In this sub group of patients:
  - mean B/L FVC 2.8 (±0.8); mean 12 month FVC 2.2 (±0.9)
- All pulmonary function tests conducted in the Brompton Respiratory Physiology Laboratory
- Spearman’s rho coefficient determined the correlation between absolute change in HRQoL & symptom measures with FVC% change from B/L to 12 months
- Multivariate regression analysis explored the interrelationship of the domains of HRQoL questionnaires & the individual item components of the symptom measures
Change in HRQoL / Symptom Scores & FVC Base Line: 12M

<table>
<thead>
<tr>
<th></th>
<th>Base Line Mean/SD</th>
<th>12 months Mean/SD</th>
<th>Spearman’s Rho (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SGRQ Symptoms Domain</strong></td>
<td>51.9 (±20.6)</td>
<td>56.0 (±26.1)</td>
<td>-0.22 (0.1000)</td>
</tr>
<tr>
<td><strong>SGRQ Activity Domain</strong></td>
<td>63.0 (±22.8)</td>
<td>67.1 (±23.6)</td>
<td>-0.27 (0.0368)</td>
</tr>
<tr>
<td><strong>SGRQ Impacts Domain</strong></td>
<td>33.1 (±17.7)</td>
<td>40.2 (±23.2)</td>
<td>-0.34 (0.0063)</td>
</tr>
<tr>
<td><strong>SGRQ Total</strong></td>
<td>45.4 (±16.9)</td>
<td>49.7 (±21.7)</td>
<td>-0.40 (0.0026)</td>
</tr>
<tr>
<td><strong>HADs Depression</strong></td>
<td>4.1 (±3.0)</td>
<td>5.6 (±4.2)</td>
<td>-0.47 (0.0028)</td>
</tr>
<tr>
<td><strong>FACIT Fatigue Score</strong></td>
<td>37.5 (±12.3)</td>
<td>30.7(±13.6)</td>
<td>0.31 (0.0150)</td>
</tr>
<tr>
<td><strong>LCQ Psychol Domain</strong></td>
<td>5.0 (±1.5)</td>
<td>4.7 (±1.8)</td>
<td>0.26 (0.0444)</td>
</tr>
<tr>
<td><strong>LCQ Social Domain</strong></td>
<td>5.0 (±1.6)</td>
<td>4.8 (±1.8)</td>
<td>0.27 (0.0370)</td>
</tr>
<tr>
<td><strong>LCQ Total Score</strong></td>
<td>15.2 (±4.0)</td>
<td>14.3 (±4.7)</td>
<td>0.28 (0.0307)</td>
</tr>
</tbody>
</table>
Strongest correlations were observed with the SGRQ ($R^s=0.40 \ p=0.0026$)
Strongest correlations were observed with the depression component of the HADS ($R^s - 0.47 \ p = 0.0028$)
Results

- ATAQ correlates well with the SGRQ HRQoL & symptom measures
- Strongest correlations were observed with the SGRQ ($R^s$-0.40 $p=0.0026$) and the depression component of the HADS ($R^s$-0.47 $p=0.0028$)
- Multivariate regression demonstrates an independent relationship between change in FVC from BL and the SGRQ total score ($p=0.002$) and the HADs depression component ($p=0.001$)
Discussion

- This large cohort of IPF patients offers some insight into HRQoL & symptom measures over 12 months
- The HADs Depression score captures a component of FVC decline that is not captured by the SGRQ
- The relationship between HRQoL instruments, symptom measures and disease severity warrants further longitudinal evaluation
- Given the mortality associated with this disease how to account for missing data requires careful consideration
- Identifying the most appropriate HRQoL and symptom measures for an IPF population will relieve the questionnaire burden
Focus Groups x5

FG stratified for Disease Severity

Manchester
Bristol
London

n=24

Deconstructed items

Research Support Group

IPF PROM
O what a canty warld were it,
Would pain and care, and sickness spare it;
And fortune favor worth and merit,
As they deserve
Thank you