Patient-Reported Monitoring of Symptoms and Spirometry Via the patientMpower Platform in Idiopathic Pulmonary Fibrosis

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Rationale: Idiopathic pulmonary fibrosis (IPF) is associated with progressive deterioration of pulmonary function reflected by decline of forced vital capacity (FVC) and serious limitation of physical activities and quality of life. The patientMpower platform (pMp) is an electronic health journal developed for IPF patients which enables them to record medication adherence, physical activity, objective (e.g. FVC) and subjective (e.g. dyspnoea) measurements and health outcomes. The principal objective of this study was to assess the acceptability and feasibility of pMp added to usual care in IPF patients at a specialist centre. Other objectives included effect on medication adherence, impact of lung fibrosis on daily life [Patient Reported Outcome Measure (PROM)] and correlation between patient-reported and clinic-observed measures. Methods: Pilot-scale, open-label, prospective, usual care-controlled, observational study at single centre (NCT 03104322). MDT-diagnosed IPF patients were invited to participate. pMp was installed on patients' smartphone/tablet. Spirobank Smart spirometer (MIR, Rome, Italy; www.spirometry.com) was used to record home FVC. Patients were asked to use pMp daily for 8 weeks (period 1). Measurements included mMedical Research Council (mMRC) scale, medication adherence, spirometry (seated), step count and weekly PROM. Patients' opinions assessed by 17-point questionnaire at week 8. This was followed by 8 weeks usual care (period 2). FVC, mMRC, 6-minute walking distance, PROM assessed at clinic at baseline, 8 weeks and 16 weeks. Results: 7 patients participated. Baseline demographic data: All patients used pMp regularly: mean 55 days (range 33-76) and recorded FVC at home frequently (median: 33/56 days; range 15-56). mMRC was rarely recorded. PROMs infrequently recorded by patients despite automatic weekly prompts by pMp. There was no significant change in clinic or home FVC during the study. No patient experienced an exacerbation. To date, four patients provided feedback at day 78. All stated they wished to continue using pMp and would recommend it to others. Conclusions: Patients with established IPF and attending a specilaist clinic are willing and able to use an electronic health journal to record data, symptoms and outcomes. Age is not a barrier to this approach and a majority wished to continue using pMp. Support is required at initial set up. Regular home spirometry is feasible and acceptable for these IPF patients. However, stronger prompting may be needed to encourage IPF patients to record dyspnoea and PROM regularly. Funding: Health Service Executive of Ireland Quality Innovation Corridor (grant ICT17-018).

Gender (m:f)	6:1
Age	median 70y (range: 57-79)
%predicted FVC	median 77% (range 49-90)
6-min walking distance	median 515 m (range 200-575)
mMRC	1 (3pts); 2 (1pt); 3 (2pts)
Antifibrotic therapy	none (1); pirfenidone (5); nintedanib (1)
PROM "overall quality of life"	good (5); excellent(1)
PROM "breathing difficulties affected quality of life last week"	none of time (2); little of time (3); most of time (1)

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