The burden of persistent cough in idiopathic pulmonary fibrosis (IPF) and other interstitial lung diseases (ILDs): a systematic evidence synthesis

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INTRODUCTION

- Cough remains a prevalent and persistent symptom in patients with IPF and other ILDs[1–3]
- To inform future research, treatment and care models, it is vital to understand the burden of persistent cough in these patient groups

AIM

- To provide the first systematic synthesis of evidence on the burden of cough in IPF and other ILDs

METHODS

Protocol pre-registered on PROSPERO as CRD42022369379

Literature search performed for English-language articles published between Jan 2010 and Aug 2022, using databases including:
- Embase
- MEDLINE
- Cochrane

The literature search included observational and interventional studies reporting cough-related measures in IPF and other ILDs

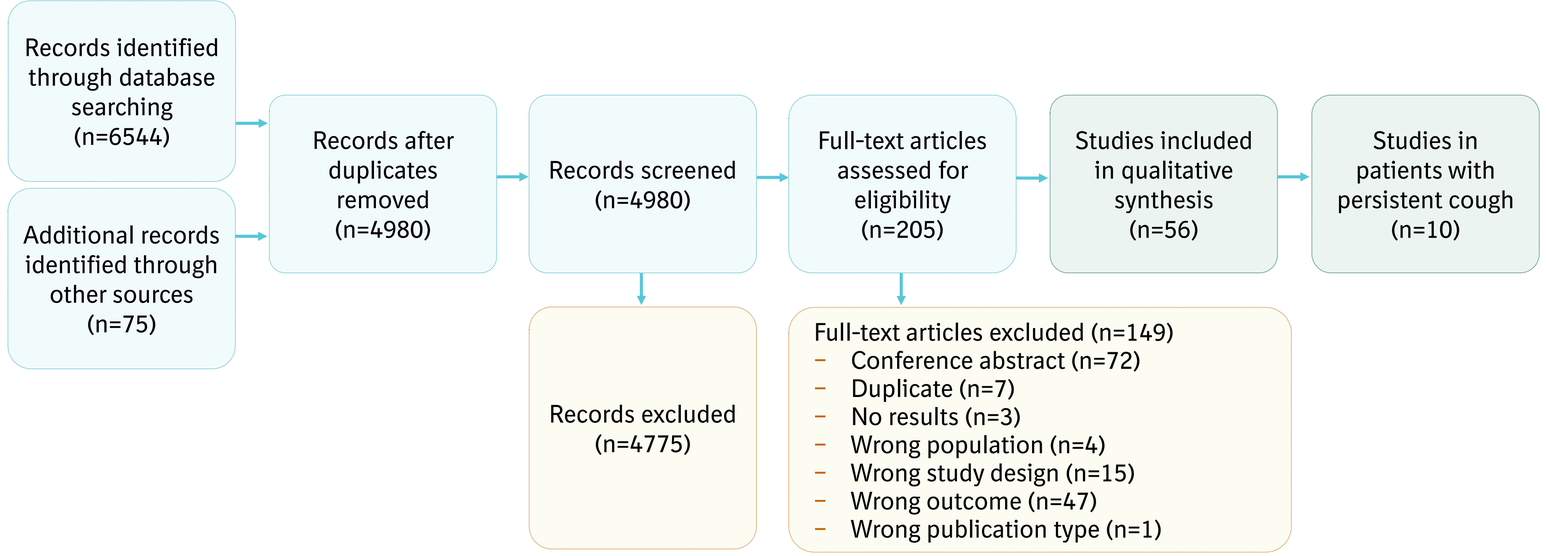
This narrative synthesis focuses on studies in patients with persistent cough investigating associations between cough and impact/health-related QoL measures

CONCLUSIONS

- Our study highlights the heterogeneity in assessing cough and its impact in IPF and other ILDs
- The findings confirm the association of cough with health-related QoL in IPF, with indications of a similar association in other ILDs
- Our synthesis underscores the need for standardised assessment along with dedicated studies, particularly in non-IPF ILDs and on the economic burden of cough

RESULTS

Literature search



Study descriptions

- Ten studies were identified in patients with IPF/ILD and persistent cough

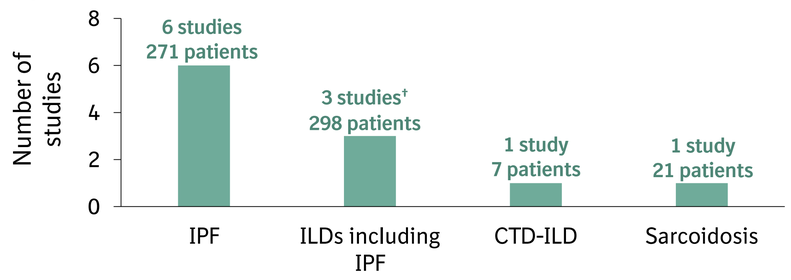
Definitions of persistent cough

Self-reported chronic cough | Stable cough for >4 weeks | Cough for >8 weeks

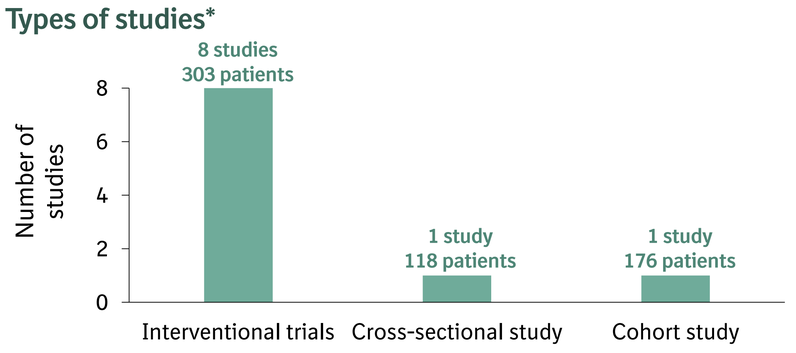
Some studies required additional criteria, such as:

Refractory cough | 24-hour cough count of >10/15 coughs/hour | Cough severity VAS >40 mm

Types of ILD*

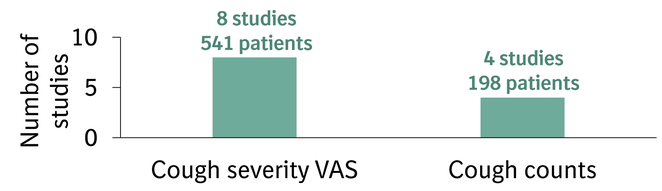


Types of studies*

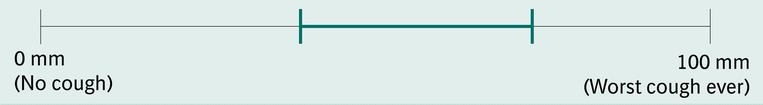


Cough-related measures and PROs‡

Most frequently used cough measures*

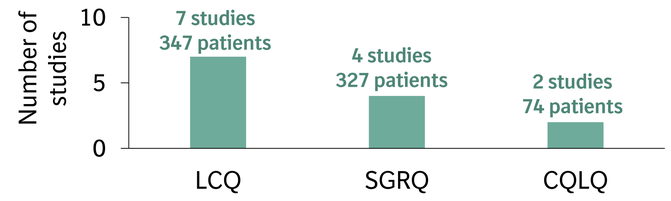


Cough severity VAS mean range: 38.8–73.4

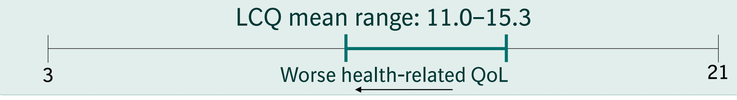


24-hour cough count mean range: 10–40 coughs/hour

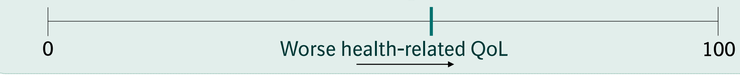
Most frequently used impact/health-related QoL measures*



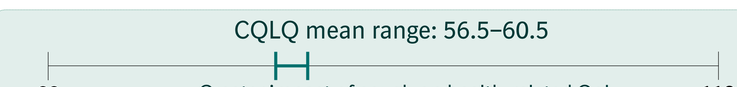
LCQ mean range: 11.0–15.3



SGRQ mean range: 57.2–57.4



CQLQ mean range: 56.5–60.5



*Patient numbers shown in bar charts only include patients with IPF or other ILDs. Other indications were excluded. †Two patients with IIPs including IPF and two patients with IIPs with unclassifiable idiopathic interstitial pneumonia were included.[4] ‡The SGRQ has been validated in IPF and SSc-ILD. The CQLQ has been validated in IPF, but not other ILDs. Neither cough severity VAS nor the LCQ have been validated in IPF or other ILDs.

Association between cough and impact/health-related QoL measures

- Four studies assessed concurrent/baseline associations between cough and impact/HRQoL measures in patients with persistent cough, with all of these reporting at least one significant association
- Additionally, in a cross-sectional study in ILD, 31% of patients ranked cough as the worst symptom[3]
- None of the studies examined the economic burden of cough

Author, year	N	Study design	Burden of cough
Birring 2017[5]	IPF: 24 CIC: 27	Crossover trial	Significant correlation between daytime cough frequency and VAS cough severity (r=0.683; p=0.0003) and LCQ (r=–0.682; p=0.00002)
Lechtzin 2013[6]	IPF: 23	Crossover trial	CQLQ significantly correlated with cough VAS (r=0.63; p<0.01), SGRQ total score (r=0.79; p<0.01) and all subscales of the SGRQ (r range=0.72–0.81; p<0.05)
Guler 2021[7]	IPF: 20	Crossover trial	LCQ correlated with VAS cough severity (r=–0.42; p<0.001) and SGRQ (r=–0.70; p<0.001); SGRQ correlated with VAS (r=0.42; p<0.001)
Cheng 2017[8]	IPF: 77 cHP: 32 SSc-ILD: 67	Observational study	Cough severity VAS correlated with SGRQ in IPF (r=0.33; p=0.19) and SSc-ILD (r=0.51; p=0.02) but not in cHP (r=–0.1; p=0.62). Cough severity VAS remained an independent predictor of SGRQ after adjustment for age, sex, ILD severity and dyspnoea

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ABBREVIATIONS

cHP, chronic hypersensitivity pneumonitis; CIC, chronic idiopathic cough; CQLQ, Cough Quality-of-Life Questionnaire; CTD-ILD, connective tissue disease-associated ILD; IIP, idiopathic interstitial pneumonia; ILD, interstitial lung disease; IPF, idiopathic pulmonary fibrosis; LCQ, Leicester Cough Questionnaire; PRO, patient-reported outcome; QoL, quality of life; SGRQ, St. George's Respiratory Questionnaire; SSc-ILD, systemic sclerosis-associated ILD; VAS, visual analogue scale.

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