

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

Pooley N, et al. The burden of persistent cough in idiopathic pulmonary fibrosis (IPF) and other interstitial lung diseases (ILDs): a systematic evidence synthesis.

Poster presented at ISPOR Europe 2023, 12–15 November, Copenhagen, Denmark

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

ILD, interstitial lung disease; IPF, idiopathic pulmonary fibrosis.

1. Biring SS, et al. Chest. 2018; 154:904–917; 2. Mann J, et al. Front Rehabil Sci. 2021; 2:751798; 3. Lan NSH, et al. Intern Med J. 2021; 51:923–929;

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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



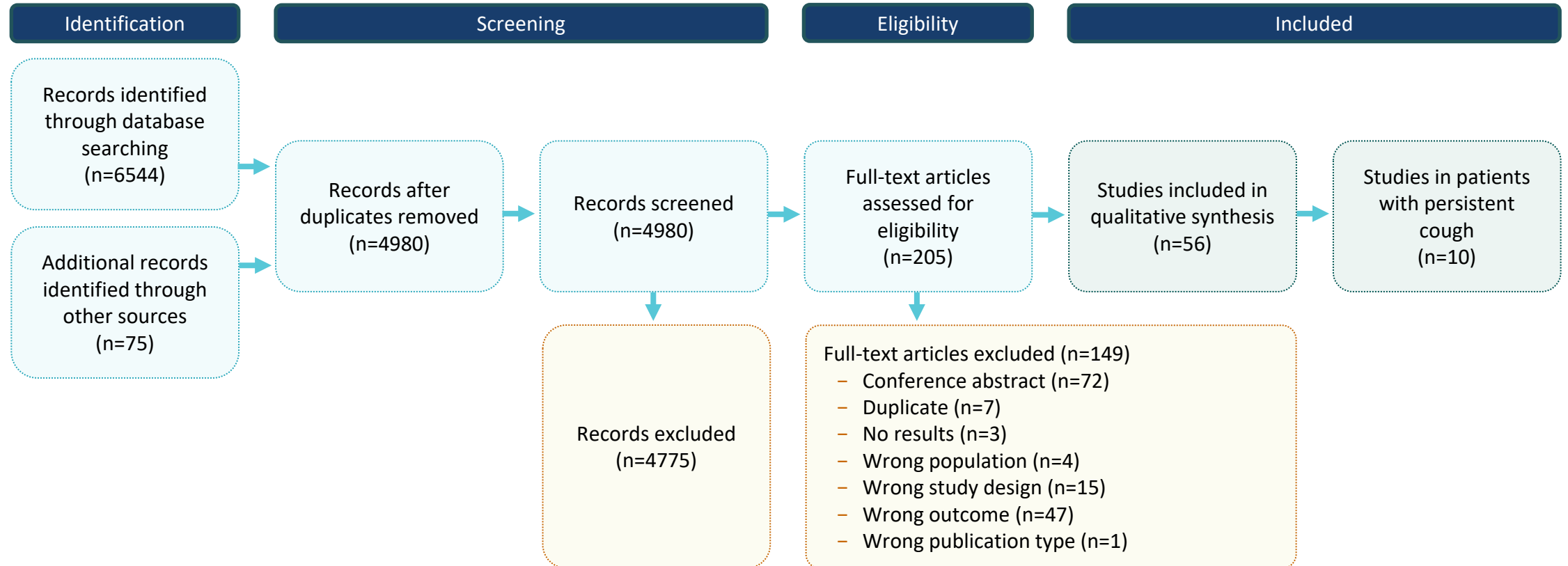
The literature search included observational and interventional studies reporting cough-related measures in IPF and other ILDs



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

Results

Literature search



Results

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

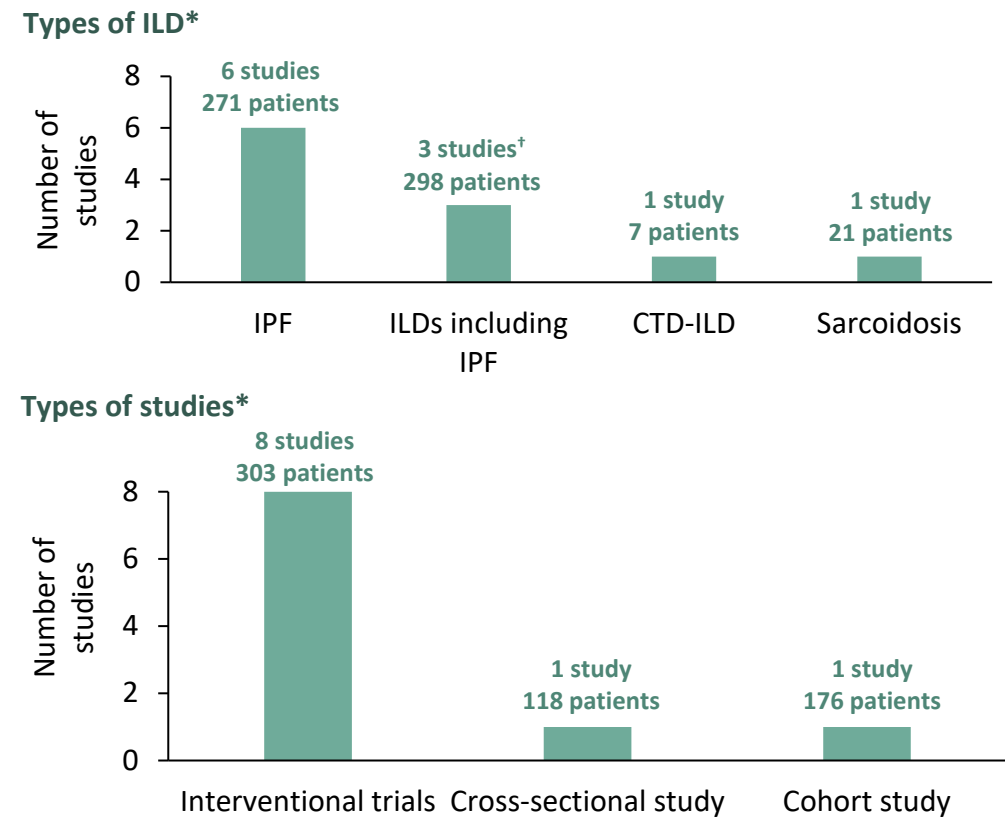
Some studies required additional criteria, such as:

Refractory cough

24-hour cough count of >10/15 coughs/hour

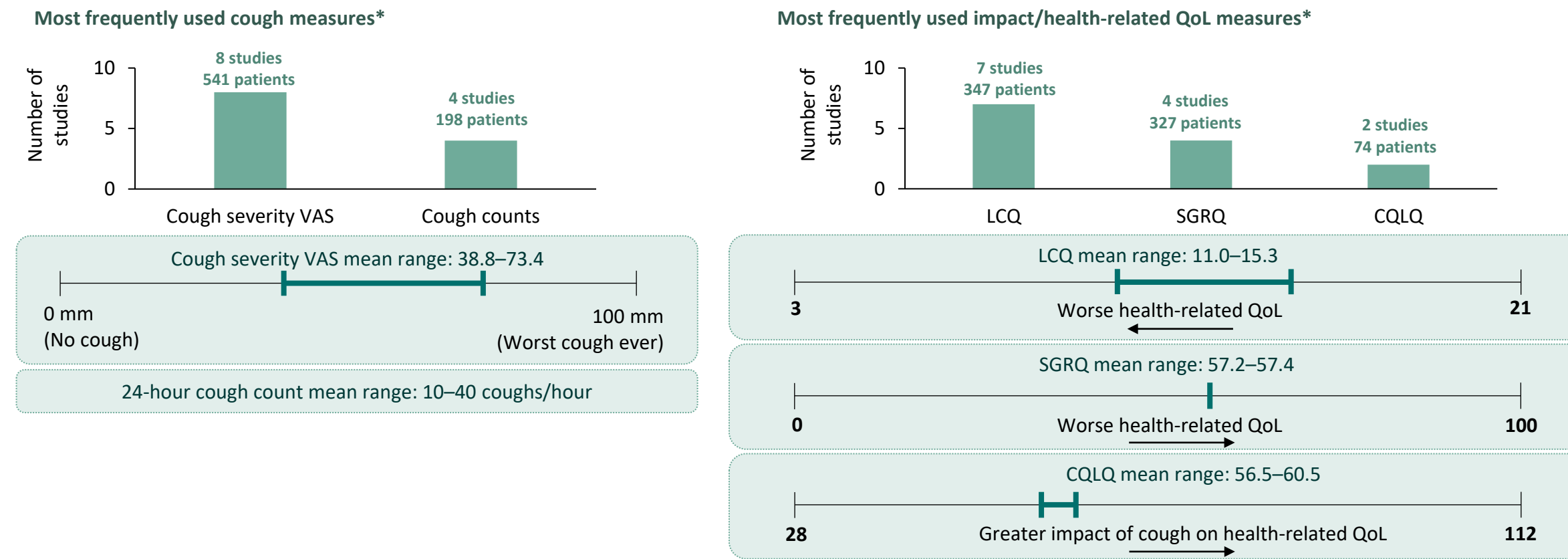
Cough severity VAS >40 mm

*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.¹
CTD-ILD, connective tissue disease-associated ILD; IIP, idiopathic interstitial pneumonia; ILD, interstitial lung disease; IPF, idiopathic pulmonary fibrosis; VAS, visual analogue scale.
1. Sato R, et al. Intern Med J. 2021; 60:3701–3707.
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Results

Cough-related measures and PROs[‡]



*Patient numbers shown in bar charts only include patients with IPF or other ILDs. Other indications excluded. [‡]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.

CQLQ, Cough Quality-of-Life Questionnaire; 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, VAS, visual analogue scale

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Results

Association between cough and impact/health-related QoL measures

- Four studies assessed concurrent/baseline associations between cough and impact/health-related QoL 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 symptom¹
- None of the studies examined the economic burden of cough

Author, year	N	Study design	Burden of cough
Birring 2017 ²	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 ³	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 ⁴	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 ⁵	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

CIC, chronic idiopathic cough; CQLQ, Cough Quality-of-Life Questionnaire; ILD, interstitial lung disease; IPF, idiopathic pulmonary fibrosis; LCQ, Leicester Cough Questionnaire; QoL, quality of life; SGRQ, St. George's Respiratory Questionnaire, SSc-ILD, systemic sclerosis-associated ILD; VAS, visual analogue scale.

1. Sato R, et al. Intern Med J. 2021; 60:3701–3707; 2. Birring SS, et al. Lancet Respir Med. 2017; 5:806–815; 3. Lechtzin N, et al. Chest. 2013; 143:1745–1749; 4. Guler SA, et al. Ann Am Thorac Soc. 2021; 18:2018–2026;

5. Cheng JZ, et al. Respiriology. 2017; 22:1592–1597.

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Conclusions



- Our study highlights the heterogeneity in assessing cough and its impact in IPF and other ILDs
- The findings confirm the negative association of cough on 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

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- BI was given the opportunity to review the poster for medical and scientific accuracy as well as intellectual property considerations