Screening CHOPN

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ÚZIS ČR

Proč screening ?

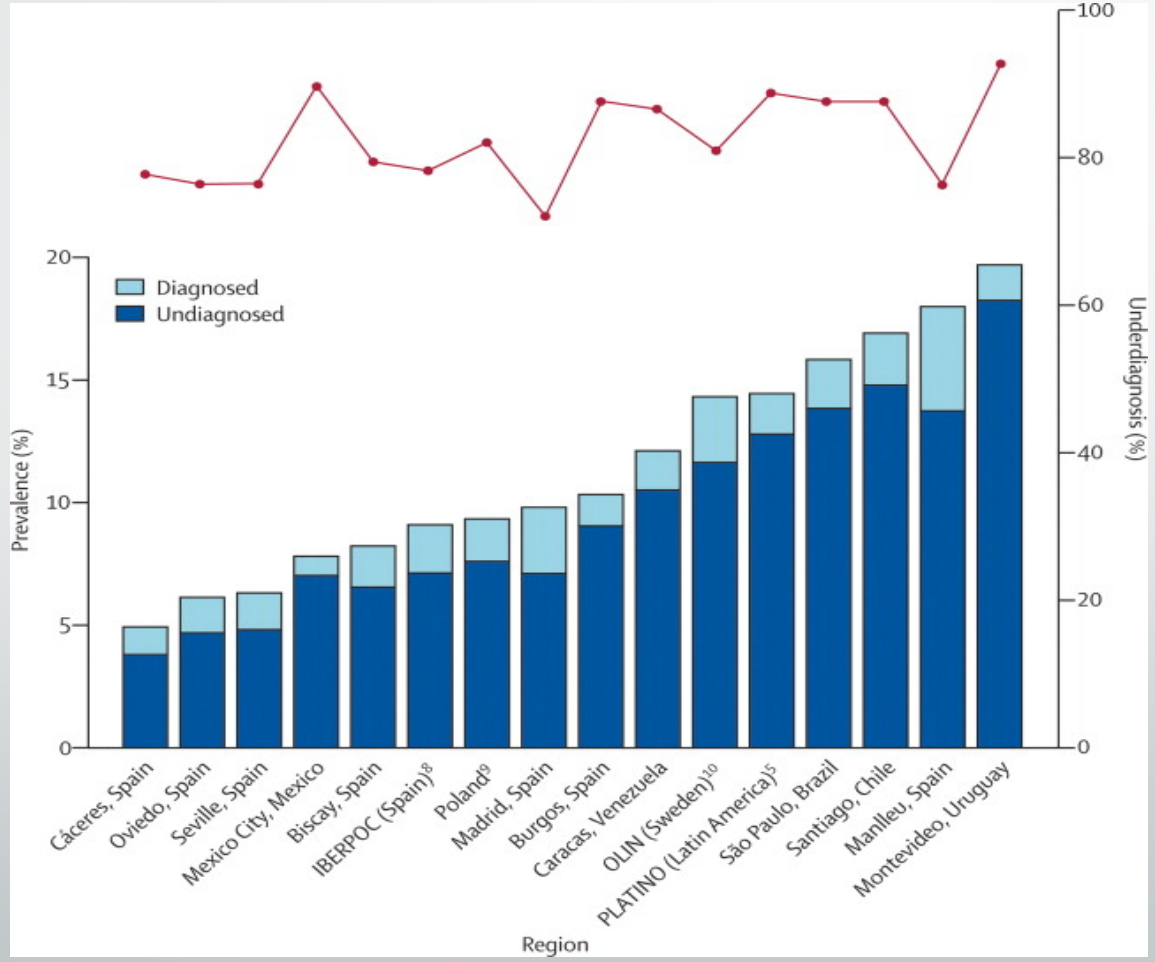
Tab. 2. Mortalita v důsledku CHOPN v ČR (data ÚZIS 2016)

rok	2007	2008	2009	2010	2011	2012	2013	2014	2015
				CHOPN[1]					
příčina úmrtí	2 016	2 052	2 290	2 022	2 479	2 429	3 411	2 918	3 500
				přepočet na 100 000 obyvatel					
příčina úmrtí	19,5	19,7	21,8	19,2	23,6	23,1	32,5	27,7	33,2

[1]list o prohlídce zemřelého (LPZ), ÚZIS ČR 2016
výskyt diagnózy – daná diagnóza byla u zemřelého jedince přítomna, ale nemusela být příčinou úmrtí
analyzované diagnózy dle MKN: J41.0–8, J42, J43.0–9, J44.0–9

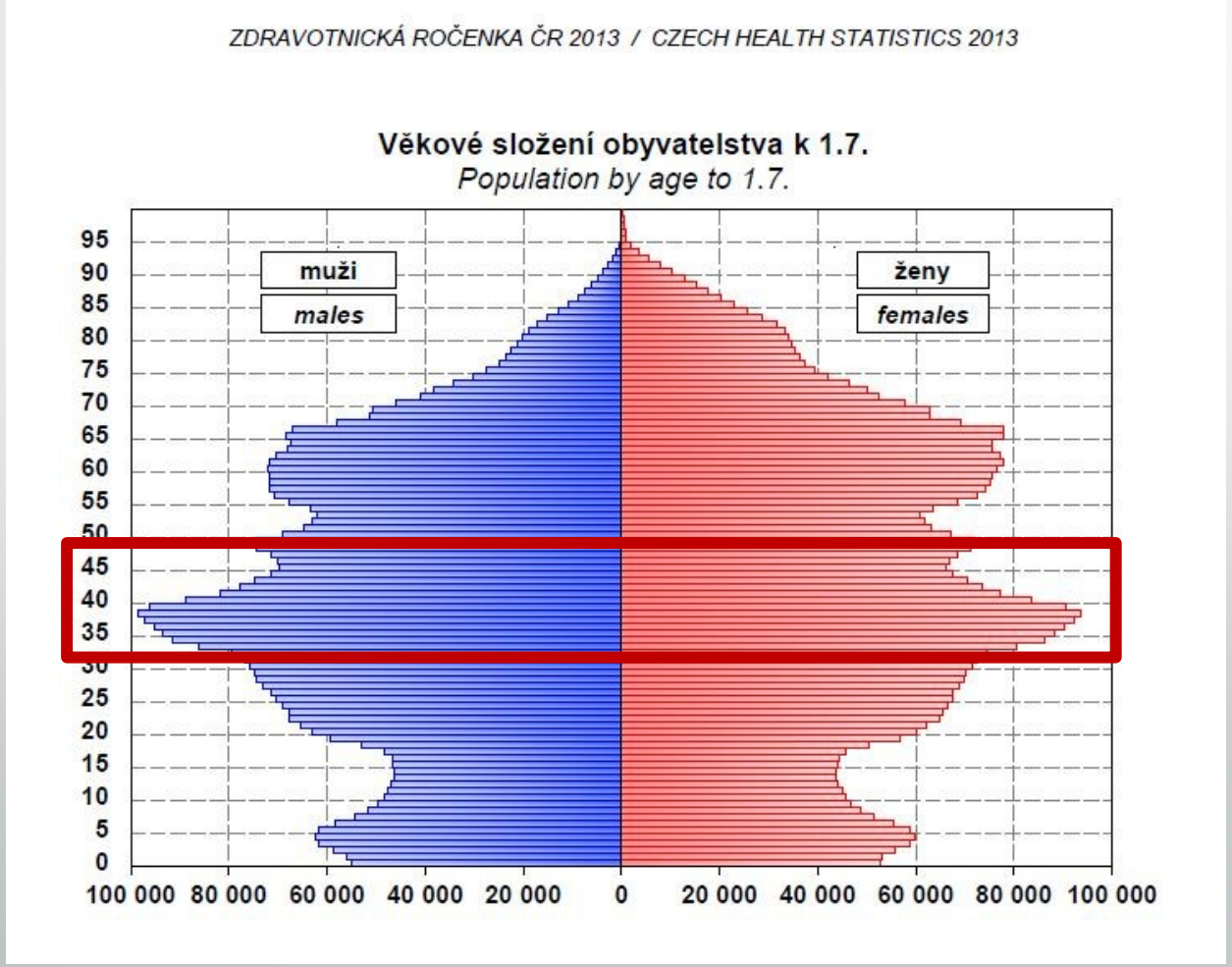
Koblizek a Svoboda Vnitrni lek 2016

Proč screening ?



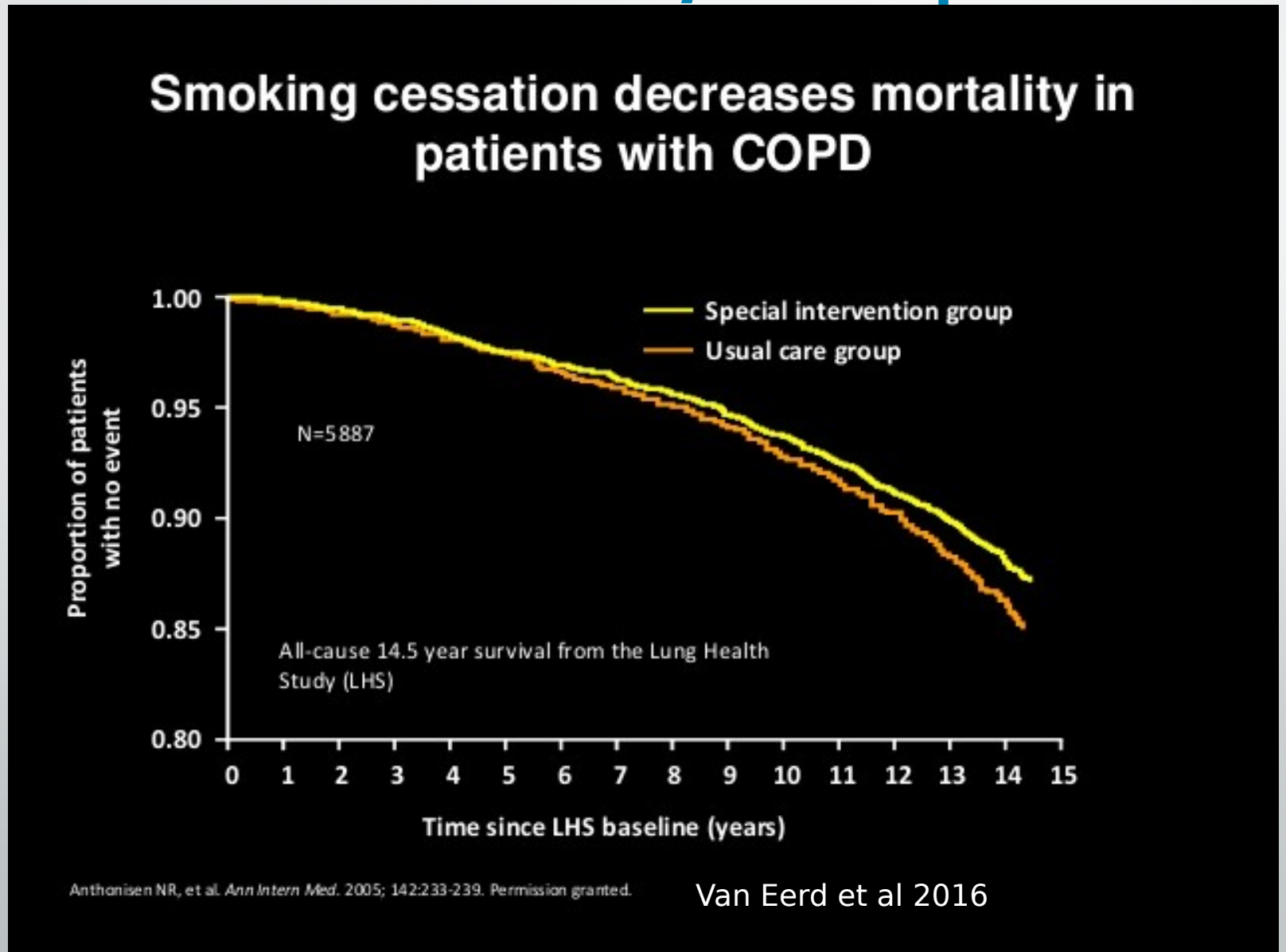
Soriano et al. Lancet 2009

Kdy screening ?



Koblizek a Hejduk Vnitrni lek 2017
Zdravotnická ročenka ČR 2013

Čím dříve, tím lépe



Van Eerd et al 2016

Čím dříve, tím lépe

Thomayerova nemocnice

CSL Behring web 2017

Základní východiska

- Nejvýraznější riziko – cigarety
- **28-32 % populace** ČR – aktivními kuřáky (2011)
- **25 % dětí** (Praha a SČ) 8-12 let – kuřácká zkušenost
- Přídatná rizika (průmysl a doprava)
- Pasivní kouření – zejména dětského věku
- Hranice prokazatelného rizika – 20 balíčkoroků

Sovinová et al 2013
Kucerova et al 2017
Ferrante et al 2017
GOLD 2017

Okénko příležitosti
možnost sekundární prevence

- První detekovatelné patologické změny (CT, zátěžové testy) po **30. roku věku** u časných kuřáků
- Většina nových pacientů má nějaké "dechové obtíže", ale nehledá pomoc a **zůstává nadále** v **rizikové expozici**
- Vývoj CHOPN je **nejrychlejší** ve stadiu **GOLD 2**
- První stanovení diagnózy (CEE) **58 let**
- Průměrný věk (CEE) **66 let**

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GOLD 2017
Liang et al 2017
Tantucci, Modina et al 2012
Koblizek et al 2017
Csikesz, Gartman 2014
Kudelova, Blažková 2018

Luděk Peřina ČTK 9.11.2017

Background

COPD can be diagnosed early using spirometry, but spirometry use is only recommended in symptomatic smokers, even though early stages of COPD can be asymptomatic. We investigated the prognosis of individuals with asymptomatic and symptomatic, undiagnosed COPD in the general population in Denmark.

Methods

GOLD 2-3-4 20-100 let

In this prospective cohort study, we analysed data from 95 288 individuals aged 20–100 years from the Copenhagen General Population Study. 32 518 (34%) of these individuals were regarded as being at high risk for COPD (defined as individuals aged 40 years or older, with cumulative tobacco consumption of ten pack-years or higher, and without self-reported or a previous hospital contact for asthma). COPD was defined as FEV_1/forced vital capacity (FVC) of less than 70% and less than the lower limit of normal, and FEV_1 of less than 80% of the predicted normal value. Individuals were considered undiagnosed if neither a previous COPD hospital contact, nor medical treatment for COPD, was registered. We obtained information on exacerbations and pneumonia from the National Danish Patient Registry and vital status from the National Danish Civil Registration System, and cause of death from the National Danish Causes of Death Registry. We used Cox proportional hazard models to assess risk of exacerbations, pneumonia, deaths due to respiratory causes, and deaths from all causes from 2003 to 2014.

Findings

GOLD 2-3-4

Between Nov 26, 2003, and July 10, 2013, 95 288 individuals were screened and 32 518 (34%) were at high risk of having COPD. 3699 (11%) of these participants met the COPD criteria and 2903 (78%) were undiagnosed, of whom 2052 (71%) were symptomatic. During a median follow-up of 6·1 years (IQR 4·9), we recorded 800 exacerbations, 2038 cases of pneumonia, and 2789 deaths in the 32 518 individuals at high risk of having COPD, including 152 deaths due to respiratory disease. Compared with individuals without COPD, the age and sex adjusted hazard ratio (HR) was 5·0 (95% CI 2·8–8·9) for exacerbations, 1·7 (1·3–2·2) for pneumonia, 0·7 (0·2–3·0) for death from respiratory causes, and 1·3 (1·1–1·6) for death from all causes in individuals with undiagnosed, asymptomatic COPD. Corresponding HRs were 15·5 (11·0–21·8) for exacerbations, 2·8 (2·4–3·3) for pneumonia, 4·3 (2·8–6·7) for death from respiratory causes, and 2·0 (1·8–2·3) for death from all causes in individuals with undiagnosed, symptomatic COPD.

Interpretation

Individuals with undiagnosed, symptomatic COPD had an increased risk of exacerbations, pneumonia, and death. Individuals with undiagnosed, asymptomatic COPD had an increased risk of exacerbations and pneumonia. These findings suggest that better initiatives for early diagnosis and treatment of COPD are needed.

GOLD 2-3-4

Funding

The Danish Lung Association, the Danish Cancer Society, Herlev and Gentofte Hospital, Copenhagen University Hospital, and University of Copenhagen.

International Journal of COPD

Dovepress

open access to scientific and medical research

Open Access Full Text Article

ORIGINAL RESEARCH

Voluntary lung function screening to reveal new COPD cases in southern Italy

This article was published in the following Dove Press journal:
International Journal of COPD
11 July 2017
Number of times this article has been viewed

Alberto Capozzolo

Background: Underdiagnosis of COPD is a relevant issue, and most frequently involves

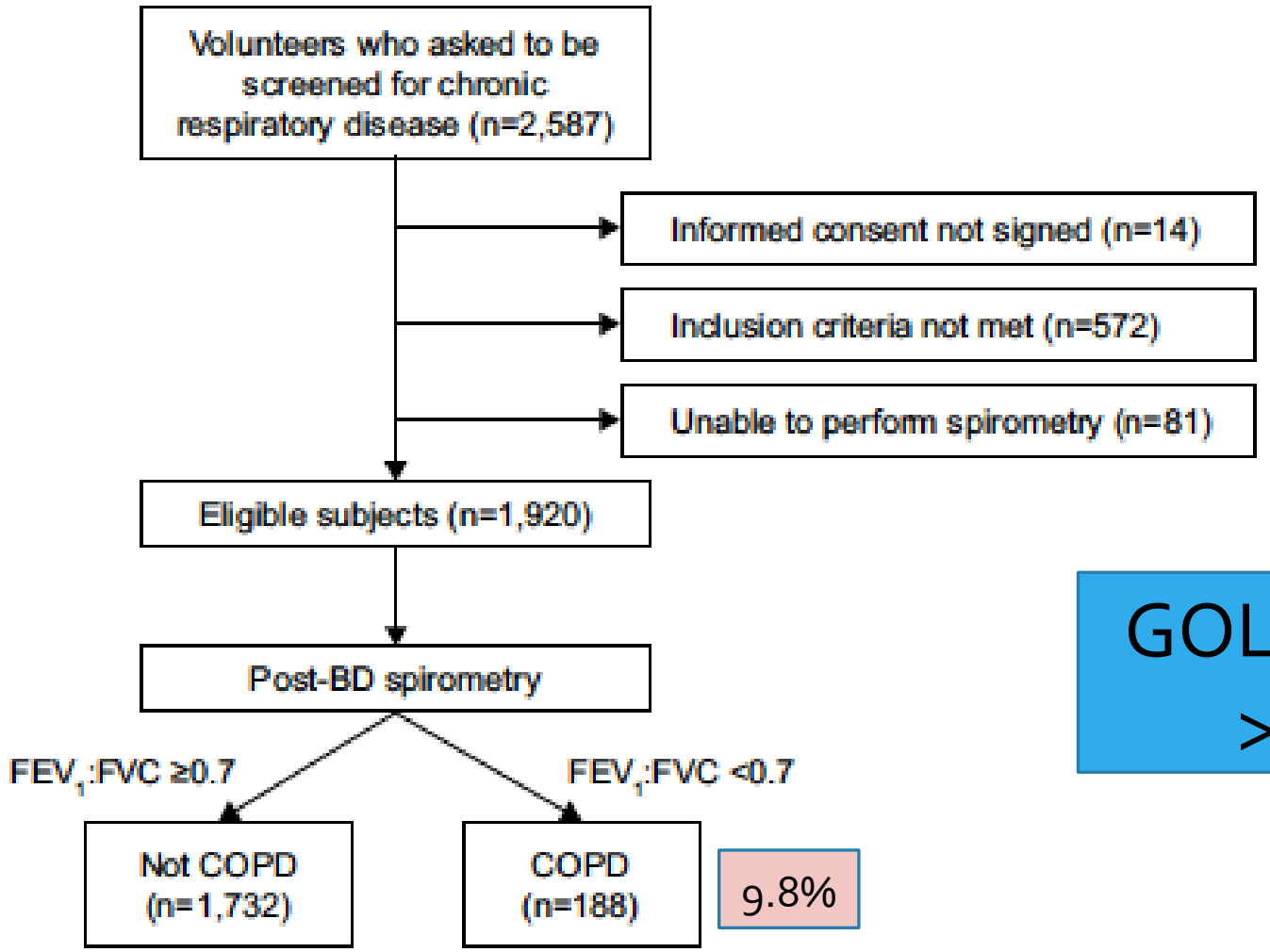

Figure 1 Design of the study.
Abbreviations: BD, bronchodilator (400 µg salbutamol); FEV_1, forced expiratory volume in 1 second; FVC, forced vital capacity.

GOLD 1-2-3-4
> 35 let

Table 1 Characteristics of the study population

Variables	Not COPD (n=1,732)	COPD (n=188)	*P*-value
Demographic data			
Mean age, years	51.7±14.5	61±10	0.005
Age range, years			
35–39	8.6 (149)	2.7 (5)	0.002
40–49	9.9 (172)	9.5 (18)	NS
50–59	24.5 (423)	26.6 (50)	NS
60–69	38 (659)	39.9 (75)	NS
≥70	19 (329)	21.3 (40)	NS
Male	56.4 (976)	72.3 (136)	<0.001
BMI	26.5±5.1	26.8±5.4	NS
Spirometric data			
Post-BD FEV_1% predicted	100.6±16.5	82.1±17.3	<0.001
Post-BD FVC% predicted	102.7±17	103.1±14.9	NS
Post-BD FEV_1:FVC	80.7±5.9	62.7±8.1	<0.001
History of smoking			
Current smokers	38.5 (666)	44.7 (84)	NS
Ex-smokers	39.5 (685)	31.9 (60)	0.048
Nonsmokers	22.0 (381)	23.4 (44)	NS
Smoking exposure			
Pack-years	14.3±13.9	22.4±12.6	<0.001
Symptoms			
Cough	24.3 (421)	36.8 (69)	<0.001
Sputum production	15.3 (265)	21.9 (41)	0.027
Shortness of breath	37.1 (643)	52.7 (99)	<0.001
Wheezing	12.1 (210)	18.6 (35)	0.015
Symptoms ≥1	68.2 (1,182)	77.7 (146)	0.007
GOLD stage			
1	–	63.8 (120)	–
2	–	36.2 (68)	–
Comorbidities			
Charlson Comorbidity Index	0.41±0.72	1.66±1.1	<0.001

GOLD 1-2-3-4
> 35 let

GOLD 1-2-3-4
> 35 let

Table 2 Frequency of symptoms in smokers and nonsmokers

Variables	Nonsmokers			Smokers ≥5 PYs*			Smokers ≥10 PYs*		
	COPD	Not COPD	*P*-value	COPD	Not COPD	*P*-value#	COPD	Not COPD	*P*-value#
Subjects, n (%)	44 (23.4)	381 (22)		144 (76.6)	1,351 (78.0)		128 (68.1)	957 (55.3)	
Mean age, years	59.4±11.3	48.3±13.5	<0.001	60.6±11.8	52.4±14.9	<0.001	62.6±10.6	53.8±12.7	<0.001
FEV_1% predicted	85.2±14	103.4±15.3	<0.001	79.1±16.4	99.4±15.8	<0.001	76.1±15.2	96.4±14.3	<0.001
BMI	27.2±6.0	25.4±5.3	NS	26.6±5.7	27.1±5.6	NS	26.4±5.3	27.5±5.8	NS
Symptoms, % (n)									
Cough	18.2 (8)	26.8 (102)	NS#	42.4 (61)	23.6 (319)	<0.001	44.5 (57)	27.6 (264)	<0.001
Sputum production	18.2 (8)	16 (61)	NS#	22.9 (33)	15.1 (204)	NS	23.4 (30)	20 (191)	NS
Shortness of breath	75 (33)	55.4 (211)	0.015#	45.8 (66)	32 (432)	0.001	47.7 (61)	34.2 (327)	0.003
Wheezing	36.4 (16)	21 (80)	0.034#	13.2 (19)	9.6 (130)	NS	7 (9)	10.1 (97)	NS
One or more symptoms	100 (44)	100 (381)	–	70.8 (102)	59.3 (801)	0.007	74.2 (95)	65.1 (623)	0.046

Notes: *Includes current/ex-smokers; #Fisher's exact test. If not specified, data presented as mean ± SD.

Abbreviations: BMI, body-mass index; FEV_1, forced expiratory volume in 1 second; NS, not significant; PYs, pack-years.

THE LANCET
Respiratory Medicine

Articles

Targeted case finding for chronic obstructive pulmonary disease versus routine practice in primary care (TargetCOPD): a cluster-randomised controlled trial

Dr Rachel E Jordan, PhD, Prof Peymané Adab, MD, Alice Sitch, MSc, Alexandra Enocson, PhD, Deirdre Blissett, MSc, Sue Jowett, PhD, Jen Marsh, PhD, Prof Richard D Riley, PhD, Prof Martin R Miller, MD, Brendan G Cooper, PhD, Alice M Turner, PhD, Prof Kate Jolly, PhD, Prof Jon G Ayres, MD, Shamil Haroon, PhD, Robert Stockley, DSc, Prof Sheila Greenfield, PhD, Prof Stanley Siebert, PhD, Amanda J Daley, PhD, Prof K K Cheng, FMedSci, Prof David Fitzmaurice, PhD

Background

Many individuals with chronic obstructive pulmonary disease (COPD) remain undiagnosed worldwide. Health-care organisations are implementing case-finding programmes without good evidence of which are the most effective and cost-effective approaches. We assessed the effectiveness and cost-effectiveness of two alternative approaches to targeted case finding for COPD compared with routine practice.

Methods

In this cluster-randomised controlled trial, participating general practices in the West Midlands, UK, were randomly assigned (1:1), via a computer-generated block randomisation sequence, to either a targeted case-finding group or a routine care group. Eligible patients were ever-smokers aged 40–79 years without a previously recorded diagnosis of COPD. Patients in the targeted case-finding group were further randomly assigned (1:1) via their household to receive either a screening questionnaire at the general practitioner (GP) consultation (opportunistic) or a screening questionnaire at the GP consultation plus a mailed questionnaire (active). Respondents reporting relevant respiratory symptoms were invited for post-bronchodilator spirometry. Patients, clinicians, and investigators were not masked to allocation, but group allocation was concealed from the researchers who performed the spirometry assessments. Primary outcomes were the percentage of the eligible population diagnosed with COPD within 1 year (defined as post-bronchodilator forced expiratory volume in 1 s [FEV_1] to forced vital capacity [FVC] ratio <0·7 in patients with symptoms or a new diagnosis on their GP record) and cost per new COPD diagnosis. Multiple logistic and Poisson regression were used to estimate effect sizes. Costs were obtained from the trial. This trial is registered with ISRCTN, number ISRCTN14930255.

GOLD 1-2-3-4
40-79 let

Findings

From Aug 10, 2012, to June 22, 2014, 74 818 eligible patients from 54 diverse general practices were randomly assigned and completed the trial. At 1 year, 1278 (4%) cases of COPD were newly detected in 32 789 eligible patients in the targeted case-finding group compared with 337 (1%) cases in 42 029 patients in the routine care group (adjusted odds ratio [OR] 7·45 [95% CI 4·80–11·55], p<0·0001). The percentage of newly detected COPD cases was higher in the active case-finding group (822 [5%] of 15 378) than in the opportunistic case-finding group (370 [2%] of 15 387; adjusted OR 2·34 [2·06–2·66], p<0·0001; adjusted risk difference 2·9 per 100 patients [95% CI 2·3–3·6], p<0·0001). Active case finding was more cost-effective than opportunistic case finding (£333 *vs* £376 per case detected, respectively).

Interpretation

In this well established primary care system, routine practice identified few new cases of COPD. An active targeted approach to case finding including mailed screening questionnaires before spirometry is a cost-effective way to identify undiagnosed patients and has the potential to improve their health.

GOLD 1-2-3-4
40-79 let

Funding

National Institute for Health Research.

Hindawi
Pulmonary Medicine
Volume 2017, Article ID 7620397, 5 pages
https://doi.org/10.1155/2017/7620397

Research Article

Guideline-Based Early Detection of Chronic Obstructive Pulmonary Disease in Eight Danish Municipalities: The TOP-KOM Study

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[2]*Municipality of Billund, Department of Health, Sydtoften 102, 7200 Grindsted, Denmark*
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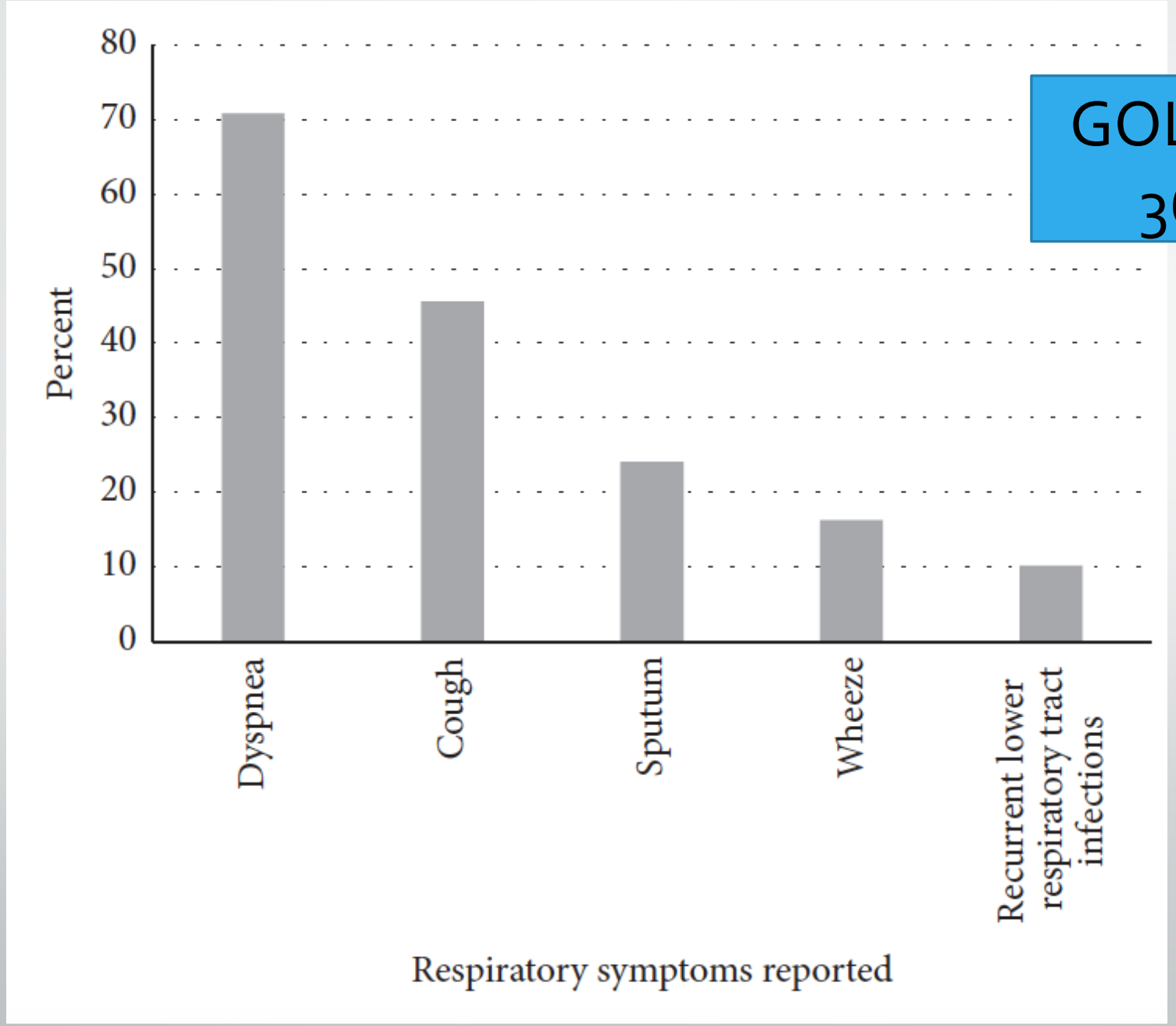
issued by the Danish National Board of Health, that is, age ≥35 years, smokers/ex-smokers and/or relevant occupational exposure, and at least one respiratory symptom (dyspnea, cough, wheeze, sputum, and recurrent lower respiratory tract infections), were offered spirometry to investigate indications



GOLD 1-2-3-4
36-92 let

1,499 citizens in the eight municipalities were examined (53.6% male) with a mean age of 57.2 (range 36–92). At the time of the examination 96% of the citizens were smokers or ex-smokers, 7% were at risk because of occupational exposure, and 5% had other risk factors. Table 1 shows the

456 out of the 1,499 citizens examined (30.4%: females 26.1%, males 35.5%) were found to have an indication for pulmonary obstruction based on the spirometry examina-

GOLD 1-2-3-4
36-92 let

GOLD 1-2-3-4
36-92 let

Table 2: Medical Research Council (MRC) average score in estimated severity in groups of COPD* (N = 1,499).

Estimated severity of COPD	Mean	SD
No obstruction	1.47	0.68
Mild COPD	1.39	0.66
Moderate COPD	1.76	0.84
Severe COPD	2.25	1.09
Very severe COPD	3.00	1.35

*Chi-square 88.8; $P < 0.001$.

Doporučení ACP/ACCP/ATS/ERS 2011

Annals of Internal Medicine®

Recommendation 1: ACP, ACCP, ATS, and ERS recommend that spirometry should be obtained to diagnose airflow obstruction in patients with respiratory symptoms (Grade: strong recommendation, moderate-quality evidence). Spirometry should not be used to screen for airflow obstruction in individuals without respiratory symptoms (Grade: strong recommendation, moderate-quality evidence).

Amir Qaseem, MD, PhD, MHA; Timothy J. Wilt, MD, MPH; Steven E. Weinberger, MD; Nicola A. Hanania, MD, MS; Gerard Criner, MD; Thys

Screeningový komerční program (USA)

Who should have a 6 for Life screening?

People who want to be proactive about their health, people with relevant risk factors such as high blood pressure, high cholesterol, smoking, being overweight, and anyone with a family history of any of the following:

- Coronary heart disease
- Diabetes
- Stroke
- Congestive heart failure
- COPD (chronic obstructive pulmonary disease)
- Lung cancer

http://www.lifelinescreening.com

Mild COPD versus Early COPD
(stále mnoho otazníků)

- Jsou jiné mechanismy v časné vs pozdní CHOPN ?
- Je každá časná CHOPN současně mírnou CHOPN ?
- Je indikována BD terapie již u první poruchy CPET či ADL limitace ?
- Zabrání brzká BD progresivnímu zhoršování choroby ?

Rossi, Miravitlles et al 2017

Obecně riziková populace pro časnou detekci CHOPN

- > 10-20 balíčkoroků
- >35-40-45 let
- respirační symptomy

Screeningový program CHOPN

(pilotní projet ÚZIS ve spolupráci ČPFS)

II.pololetí 2018 – 2019 – I. pololetí 2020

Koblížek, Hejduk 2017

Kalkulace potenciálních osob pro pilotní screening CHOPN v ČR

- 70 % dospělých osob má dušnost
- 30 % kuřáků v populaci ČR
- 50 % kuřáků někdy dostane CHOPN (GOLD 1-4)
- populace 45-65 let v ČR 2.16 milionu
- riziková kohorta v ČR 227.000
- **plánováno vyšetřit 3 % z nich**
  (7.000 osob/ 14 pneumology/ 500/2roky)

Liang et al 2017
Koblížek, Hejduk 2017

1.krok PRAKTICKÝ LÉKAŘ

- Nalézt kuřáky či exkuřáky (> 20 balíčkoroků)
- Věk 45-65 let
- Dušnost mMRC 2

2.krok PNEUMOLOG mMRC a CAT

http://www.copdplatform.com

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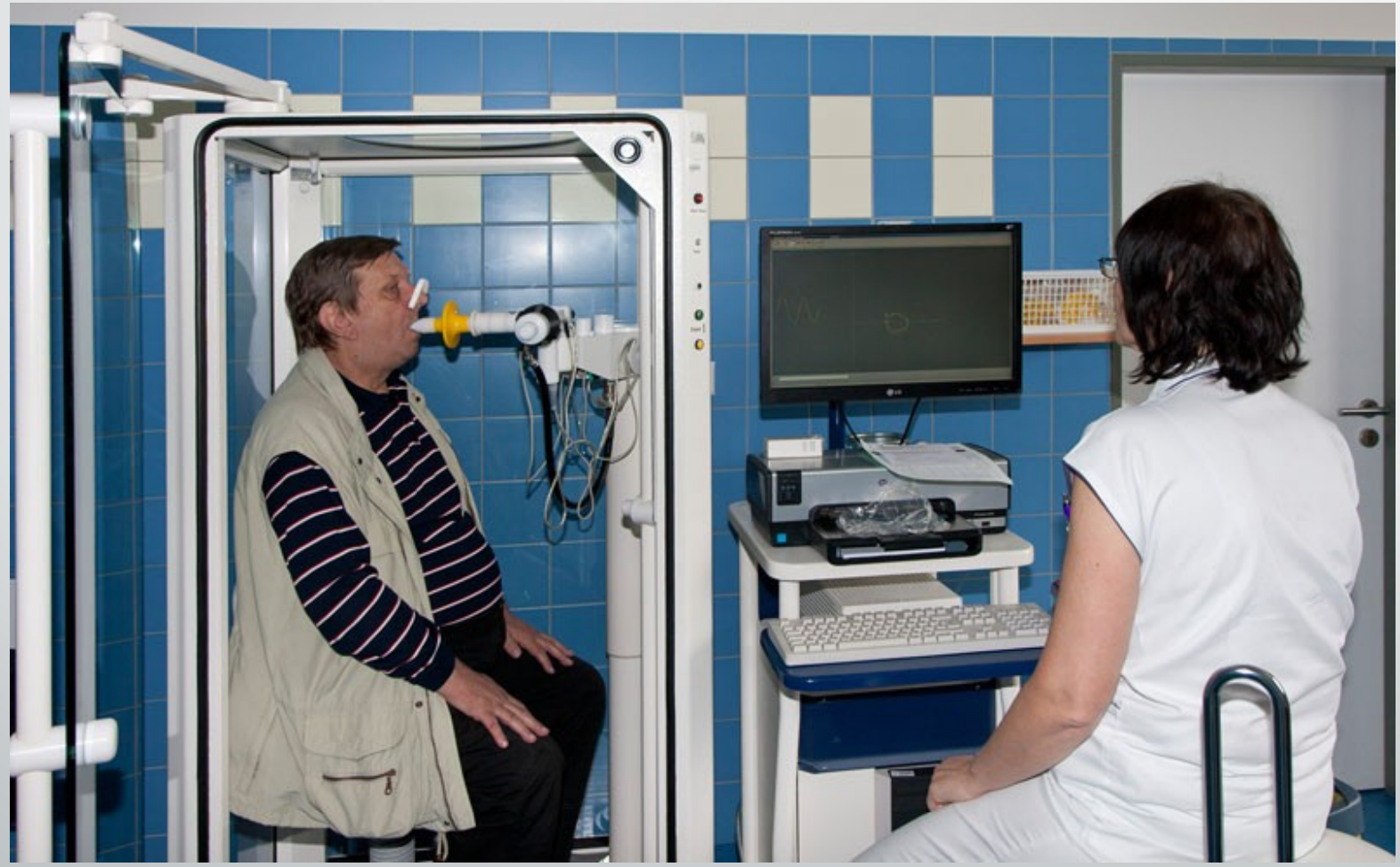
2.krok PNEUMOLOG Funkční vyšetření



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http://www.copdplatform.com

2.krok PNEUMOLOG ZHODNOCENÍ

http://www.copdplatform.com

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Plán pro rok 2018

- Březen-duben 2018 - kontaktování **14 plicních lékařů**
- Každý plicní lékař (1 na kraj) kontaktuje **cca 3 praktické lékaře**
- **Od září 2018 zahájení projektu**
- PL posílá všechny rizikové osoby
- PNE vyšetřuje všechny rizikové od PL, CHOPN si *"ponechá"*

Práce pro PL

- Prohledat aktivně kartotéku
- Nalézt všechny 45-65 let s anamnézou kouření
- Pokud kouření nad 20 balíčkoroků tak telefonát zda se zadýchají při rychlé chůzi
- Pokud ano, tak jejich nasměrování na PNE

Práce pro PNE

- Všechny co přijdou od PL vyšetřit *(mMRC, CAT a post-BD funkční)*
- Výsledky zhodnotit
- Negativní (*NON-COPD*) poučit o vhodnosti nekouření
- Pozitivním (*new COPD*) nabídnout péči a případně zahájit léčbu adekvátně jejich stavu (GOLD 1 a GOLD 2 budou tvořit většinu)
- Intervence na asociované komorbidity, pohyb, vakcinace,..