COPD knowledge in a swiss frail selected population

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Introduction

COPD is an important cause of morbidity and mortality in the general population[1] . The prevalence of COPD in the general population varies from country to country depending on smoking habits and age distribution. The prevalence of bronchial obstruction in Switzerland is similar to that of European countries (8% in > 70-year-old patients, 29.3% of whom are non-smokers)[2]. The estimated number of COPD patients is about 400'000 in Switzerland[3]. Paradoxically, COPD remains underdiagnosed by doctors [2-4]. The term COPD is poorly known in Europe, Latin America and Asia, as less than 10% of the general population recognizes it [5-11]. The aim of this study was to estimate the knowledge of COPD in a population of patients > 45 years old receiving home care in a semi-urban area (Canton of Neuchâtel, *fig. 1*). This study is part of a project aimed at increasing awareness among the general population, general practitioners and caregivers of the main home care institution on COPD in the canton of Neuchâtel.

Figure 1 : Canton de Neuchâtel

Methods

This was an observational, cross-sectional study conducted in November 2016 in the Canton of Neuchâtel. A questionnaire developed by *La Ligue Pulmonaire Suisse* to detect COPD (COPD risk test, *fig. 2*) in the general population based on smoking habits, symptoms of COPD (cough, sputum, wheezing, dyspnea) and history of asthma was offered to all patients aged over 45 and receiving home care through caregivers of a public home care institution (NOMAD) during 3 consecutive weeks. In addition, all patients were asked if they were familiar with the term COPD and/or emphysema and if they already had a spirometry. Weight, size, SpO_2 and the use of inhaled medication or oxygen were also recorded. All caregivers (240 people) of NOMAD involved in the study received prior training on COPD and smoking cessation counselling. Frequencies were obtained of the categorical variables, while in the continuous variables central tendency (mean) and dispersion (standard deviation) were evaluated. The Chi-squared test was used to analyse the relationship between categorical variables. For the continuous variables, ANOVA was used in comparisons of three or more groups. A p value of <0.05 was considered statistically significant.

Do you smoke or have you smoked ?	Yes (5 pts)	No (0 pts)
Do you cough, even if you have no cold ?	Yes (5 pts)	No (0 pts)
When you cough in the morning, do you produce some mucus ?	Yes (5 pts)	No (0 pts)
Are you panting when climbing stairs or walking fast?	Yes (2 pts)	No (0 pts)
Do you wheeze ?	Yes (2 pts)	No (0 pts)
Are you over 45 years old ?	Yes (2 pts)	No (0 pts)
Have you been diagnosed with asthma ?	Yes (2 pts)	No (0 pts)

Group 1	0 pts	You are not in the risk group for COPD.
Group 2	2-4 pts	Your risk of COPD is minimal. If you are still worried, talk to your doctor.
Group 3	5-12 pts	At the next visit, ask your doctor if you need further tests to determine the risk of COPD.
Group 4	14-23 pts	There is a risk that you are suffering from COPD. We advise you to seek medical advice

Figure 2: COPD risk test developed by la Ligue Pulmonaire Suisse

Results

Out of a total of 724 participants, 639 (88.3 %) accepted to participate. We retained 444 (69.5 %) complete questionnaires.

Characteristics of participants (n=444)	
Sex, men / women n (%)	157/287 (35/65)
Age, years (SD)	80 (11.1)
BMI, kg/m² (SD)	26 (5.5)
Smokers n (%)	68 (15.3)
Ex-smokers n (%)	139 (31.3)
Non-smokers (%)	237 (53.4)
Inhaled treatment n (%)	55 (12)
Oxygenotherapy n (%)	24 (5.4)
Ever had a spirometry n (%)	104 (23)
Recognition of « COPD » n (%)	40 (9.0)
Recognition of « emphysema » n (%)	108 (24)
COPD risk group 4 (%)	62 (14 %)

Repartition according to COPD risk group	COPD risk group (total=n)			p¶
	1-2 (188)	**3 (194)**	**4 (62)**	
Sex, men (%)	41 (21.8)	85 (43.8)	31 (53)	<0.001¶
Age, years n (SD)	83 (9.6)	79 (10.8)	75 (13.7)	<0.001†
BMI, kg/m² n (SD)	25.8 (5.4)	26.1 (5.5)	26.6 (5.9)	0.601†
Smokers n (%)	0	43 (22.2)	25 (40.3)	<0.05
Ex-smokers (%)	0	110 (56.7)	29 (46.7)	<0.05
Non-smokers (%)	188 (100)	41 (21.1)	8 (12.9)	<0.05
Inhaled treatment (%)	5 (2.7)	25 (12.9)	25 (40.3)	<0.001¶
Ever had a spirometry n (%)	29 (15.4)	55 (28.3)	20 (32.3)	0.003¶
Oxygenotherapy n (%)	8 (4.3)	8 (4.1)	8 (12.9)	0.019¶

¶ Chi-square test. † ANOVA for continuous variables.

Results

Average age of patients was 80 ± 11.1 with a minority of men (35%). Patients in COPD risk group 4 were statistically younger than in group 1-2 (75 ± 13.7 vs 83 ± 9.6) . Smokers represented 15% of patients. Men were more common in group 4 than women (53 vs 47%). In group 4, 32.3% of patients had spirometry and 40.3 % of patients were treated with inhaled drugs. In total, only 9% of patients were familiar with the term "COPD" compared to 24% for the term "emphysema". There was no difference between men and women, COPD risk group or having had spirometry in regard of recognition of « COPD » and « emphysema » terms. Only patients with inhaled therapy, smokers and ex-smokers were more familiar with the term « COPD » than people without such treatment. Overall, smokers and ex-smokers had more respiratory symptoms than non-smokers (cough, sputum, wheezing) and a history of asthma. Only dyspnea was equivalent in 3 groups. The increasing of body mass index correlates with dyspnoea (p<0.001) and wheezing (p<0.001).

Recognition of COPD and Empysema	n	Recognition of « COPD »	p¶	Recognition of « emphysema »	p¶
COPD risk group			0.238		0.212
Group 1-2 n (%)	188	14 (7.4)		38 (20.2)	
Group 3 n (%)	194	17(8.8)		54 (27.8)	
Group 4 n (%)	62	9 (14.5)		16 (25.8)	
Smoking status			**0.021**		0.072
Non-smoker n (%)	237	16 (6.8)		53 (22.3)	
Ex-smoker n (%)	139	12 (8.6)		31 (22.3)	
Smoker n (%)	68	12 (17.7)		24 (35.3)	
Ever had a spirometry n (%)	108	15 (14.4)	0.068	33 (31.7)	0.066
Inhaled therapy n (%)	40	10 (18.1)	**0.011**	16 (29.1)	0.379

¶ *chi-square test : p value calculated according to answer « no » at the question recognition of term « COPD or « emphysema ».*

Symptoms	Non-smokers (n =237)	Ex-smokers (n= 139)	Smokers (n= 68)	p¶
Cough (%)	31 (13.1)	28 (20.1)	26 (38.2)	**<0.001**
Sputum (%)	24 (10.1)	22 (15.8)	20 (29.4)	**<0.001**
Dyspnea (%)	114 (48.1)	60 (43.2)	30 (44.1)	0.616
Wheezing (%)	14 (5.9)	17 (12.2)	10 (14.7)	**0.029**
Asthma history (%)	6 (2.5)	11 (7.9)	11 (16.2)	**<0.001**

¶ *chi-square test : difference between groups.*

Conclusions

In this elderly population requiring home care, knowledge of both terms « COPD » and emphysema is poor and very close to what can be observed in younger populations in other countries of the world[5-11]. The low proportion of patients at high risk of COPD who had benefited of spirometry or inhaled treatment probably also reflects the lack of knowledge of the disease by the medical profession. Interestingly, patients at high risk of COPD were younger, but needed home care anyway. This may pinpoint the impact of respiratory symptoms on morbidity and autonomy. Smoking is accompanied by a significant increase in respiratory symptoms in this population. Dyspnea affects nearly 50% of smokers and non-smokers, which is probably indicative of associated co-morbidities. To improve the management of COPD in this population, it is important to continue raising awareness among patients, caregivers and physicians.

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