

## **Supplementary material**

### **Annex 1.**

#### **Understanding of COPD among final-year medical students**

Javier Mohigefer (1), Carmen Calero-Acuña (2,3), Eduardo Marquez-Martin (2),  
Francisco Ortega-Ruiz (2,3), Jose Luis Lopez-Campos (2,3)

**Running header:** knowledge of COPD in medical students

#### **Institutions:**

1. Facultad de Medicina. Universidad de Sevilla, Spain.
2. Unidad Médico-Quirúrgica de Enfermedades Respiratorias. Instituto de Biomedicina de Sevilla (IBiS). Hospital Universitario Virgen del Rocío/Universidad de Sevilla, Spain
3. CIBER de Enfermedades Respiratorias (CIBERES). Instituto de Salud Carlos III, Madrid, Spain

**Correspondence:** Javier Mohigefer. Hospital Universitario Virgen del Rocío/Universidad de Sevilla. Avda. Manuel Siurot, s/n. 41013 Sevilla, España.

Email: javi5r@hotmail.com

## SOCIODEMOGRAPHIC DATA

### 1. Sex

- a) Man
- b) Woman

### 2. Age:

### 3. Year you started to study Medicine:

### 4. Smoking habit:

- a) Usual smoker
- b) Occasional smoker
- c) Former smoker
- d) Never smoker

### 5. Rate 0 (nothing) to 10 (much) if you like respiratory diseases.

## COPD CONCEPT

### 1. Define briefly what COPD is:

### 2. Before studying in class, did you know what COPD was?

- a) Yes, I had a pretty rough idea
- b) No, I really did not have it clear

### 3. Through what means was informed about the concept of COPD before studying it in the degree (point as many as appropriate):

- a) Media (press, radio, TV)
- b) Physiotherapists
- c) Pharmacist
- d) Familiar or known to suffer
- e) Internet
- f) Not applicable
- g) Others

4. Could you indicate on a scale of 0 (absence of severity) to 10 (maximum severity), how do you consider COPD to be serious?:

5. Could you indicate, on a scale of 0 (absence of gravity) to 10 (maximum severity), how do you consider each of the following diseases:

- a) Diabetes
- b) Hypertension
- c) Angina pectoris
- d) Stomach ulcer
- e) Arthrosis-Arthritis

6. Your attitude towards the 2012 anti-smoking law in Spain is:

- a) Very favorable
- b) Favorable
- c) Does not know
- d) Unfavorable
- e) Very unfavorable

7. Do you know that there is a National COPD Strategy?:

- a) Yes
- b) No, I don't

8. Do you know what the National COPD Strategy consists of?

- a) Yes, I have a pretty approximate idea
- b) Something more or less
- c) No, I don't

9. List the main risk factors for COPD:

10. Of the following biological pathways, indicate which have been related to the pathogenesis of COPD:

- a) I really do not have much idea of this and I prefer not to respond (skip to the next question)
- b) Oxidative stress
- c) Protease-antiprotease imbalance
- d) Increased inflammatory cells
- e) Dysregulation of inflammatory cells
- f) Dysregulation of innate immunity
- g) Deregulation of acquired immunity
- h) Role of dendritic cells
- i) Involvement of inflammatory mediators (proteins)
- j) Apoptosis
- k) Autoimmunity
- l) Genetic alterations
- m) Epigenetic alterations
- n) Involvement of respiratory tract infections

- o) Pulmonary development disorders
- p) Age and aging of the respiratory system
- q) Exacerbations
- r) Other (complete if you think some are missing):

## CLINICAL PRESENTATION

1. List the main symptoms of COPD:

2. COPD includes three distinct entities: chronic bronchitis, emphysema, and disease of the respiratory tract. Regarding this:

- a) The diagnosis of BC is clinical and emphysema is pathological
- b) The diagnosis of BC is anatomopathological and the diagnosis of emphysema is clinical
- c) Diagnosis of BC and emphysema is clinical
- d) The diagnosis of BC and emphysema is anatomopathological

3. Centracinar or centrolobulillar emphysema is related to tobacco, while panacinar or panlobulillar emphysema is related to deficiency of  $\alpha$ 1-antitrypsin:

- a) True
- b) False

4. If a patient diagnosed with COPD refers to wheezing, the diagnosis should be rethought, as it will surely be an asthma:

- a) True
- b) False

## COPD DIAGNOSIS

1. A smoker or ex-smoker patient with chronic cough and expectoration should be diagnosed for COPD without further evidence:

- a. True
- b. False

2. In spirometry, COPD is diagnosed by:

- a. FEV1 <80%
- b. FEV1 / FVC <0.7
- c. MMEF 25/75 <60%
- d. FVC <80%

3. If a patient with COPD has a bronchial obstruction in spirometry with FEV1 > 80%:

- a. The diagnosis of COPD is not correct, since it is not obstructed
- b. It is an EPOC with mild functional impairment
- c. It is an EPOC with moderate functional impairment
- d. It is a COPD with severe functional impairment

4. If a patient with COPD has a bronchial obstruction in spirometry with FEV1 between 30 and 50%:

- a. The diagnosis of COPD is not correct, since it is not obstructed
- b. It is an EPOC with mild functional impairment
- c. It is an EPOC with moderate functional impairment
- d. It is a COPD with severe functional impairment

5. COPD is a progressive disease but spirometry can return to normal with intensive treatment and smoking cessation:

- a. True
- b. False

6. A patient diagnosed with COPD has a 60% FEV<sub>1</sub>, with frequent symptoms and 1 exacerbation in the last year. What stadium does GOLD belong to?

- a. A
- b. B
- c. C
- d. D

7. State which of these clinical phenotypes are currently recognized in the regulations (point out as many as you believe):

- a. Not frequent exacerbator
- b. Phenotype with bronchiectasis
- c. Overlap with sleep apnea syndrome
- d. Frequent exacerbator with chronic bronchitis
- e. Frequent exacerbator with emphysema
- f. COPD with pulmonary fibrosis
- g. Asthma-COPD overlap
- h. COPD phenotype with heart disease

8. What is the main parameter to measure the severity of COPD according to the Spanish COPD guide (GesEPOC):

- a. FEV<sub>1</sub>

- b. Dyspnea
- c. Goat
- d. Ability to exercise

## NON-PHARMACOLOGICAL EPOC TREATMENT

1. Smoking cessation prevents a worsening of COPD

- a. True
- b. False

2. Using oxygen at home helps COPD patients to live longer:

- a) True
- b) False

3. Indications of home oxygen therapy are:

- a.  $\text{PaO}_2 \leq 60$  mmHg or  $\text{SatO}_2 \leq 92$  mmHg
- b.  $\text{PaO}_2 \leq 55$  mmHg or  $\text{SatO}_2 \leq 88$  mmHg
- c.  $\text{PaO}_2 \leq 50$  mmHg or  $\text{SatO}_2 \leq 84$  mmHg
- d.  $\text{PaO}_2 \leq 45$  mmHg or  $\text{SatO}_2 \leq 80$  mmHg

4. Regarding vaccines in COPD:

- a. The pneumococcal conjugate vaccine of 13 serotypes and the annual influenza vaccine are recommended
- b. Only annual influenza vaccine is recommended



- c. If patients have not had pneumonia, vaccination is not necessary
- d. Immunization is not recommended for these patients

5. All patients with COPD should be advised to exercise:

- a. True
- b. False

#### PHARMACOLOGICAL EPOC TREATMENT

1. In COPD, salbutamol can be used whenever you feel breathless as rescue medication:

- a. True
- b. False

2. The main pharmacological treatment of COPD is:

- a. Short-acting bronchodilators
- b. Long-acting bronchodilators
- c. Inhaled corticosteroids with a long-acting  $\beta_2$  agonist
- d. Theophylline

3. Patients may stop using long-acting inhalers when symptoms of COPD improve:

- a. True
- b. False

4. The pharmacological treatment used in a patient with GOLD stage C non-exacerbating COPD would be:

- a. LABA + LAMA + inhaled corticosteroids
- b. LABA + inhaled corticosteroids
- c. LABA or LAMA
- d. LABA + LAMA

5. Inhaled corticosteroids are indicated for COPD in:

- a. Patients with frequent exacerbations despite a correct bronchodilator treatment alone
- b. Patients with severe COPD in all cases
- c. Patients with frequent exacerbations despite a correct bronchodilator treatment or in the mixed phenotype with asthma
- d. Patients very symptomatic despite treatment with a long-acting bronchodilator

6. If a patient with COPD becomes exacerbated, their long-acting bronchodilators should be replaced by short-acting bronchodilators at high doses during exacerbation:

- a. True
- b. False

**Annex 2.****Understanding of COPD among final-year medical students**

Javier Mohigefer (1), Carmen Calero-Acuña (2,3), Eduardo Marquez-Martin (2),  
Francisco Ortega-Ruiz (2,3), Jose Luis Lopez-Campos (2,3)

**Running header:** knowledge of COPD in medical students

**Institutions:**

1. Facultad de Medicina. Universidad de Sevilla, Spain.
2. Unidad Médico-Quirúrgica de Enfermedades Respiratorias. Instituto de Biomedicina de Sevilla (IBiS). Hospital Universitario Virgen del Rocío/Universidad de Sevilla, Spain
3. CIBER de Enfermedades Respiratorias (CIBERES). Instituto de Salud Carlos III, Madrid, Spain

**Correspondence:** Javier Mohigefer. Hospital Universitario Virgen del Rocío/Universidad de Sevilla. Avda. Manuel Siurot, s/n. 41013 Sevilla, España.  
Email: javi5r@hotmail.com

Dear student,

In recent years, several initiatives have been published to evaluate the knowledge of chronic obstructive pulmonary disease (COPD) in the general population. These studies have shown an important ignorance and they have indicated the sources of information that the population has on respiratory diseases.

We are currently conducting a survey to evaluate the knowledge of final-year medical students about COPD. This survey is my End of Grade Work, so I would like to request your collaboration.

The aim of the survey is to be able to analyze the knowledge of COPD we have, not only as medical students, but also as a general population. With the present work, we propose to make an evaluation similar to previous ones, but in a population that has some specific characteristics, as we are the students of the last year of medicine.

The results of this survey will allow us to better understand the knowledge of this disease and help establish strategies to improve teaching in this prevalent disease.

You must know that your participation in this study is voluntary and altruistic, so you will not get any benefit from participating in it, beyond the satisfaction of collaborating with a classmate in the development of his End of Grade Work. You should also know that this survey is not an exam. Your results will not be used for your academic qualification in any subject under any circumstances.

As research work, the survey is completely anonymous. In addition, the collected data will be analyzed and presented in an aggregated way, reason why the confidentiality of its participants is guaranteed. The database will not contain any elements that can be used to identify its participants.

We understand that submitting the answers implies that you agree to participate in the conditions mentioned. As it is possible that we send the survey in several waves, if you have already filled it, we ask that you do not complete it twice.

On the following pages you will see a survey with a series of questions about COPD. Remember that it is not an exam, so we ask that you be sincere and natural in your answers and that you respond with your current knowledge without consulting notes or bibliography.

Thank you very much for your cooperation.