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SECT Clinical Practice Guideline on the Management of Patients With Spontaneous Pneumothorax☆,☆☆

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ABSTRACT

This clinical practice guideline (CPG) emerges as an initiative of the scientific committee of the Spanish Society of Thoracic Surgery.

We formulated PICO (patient, intervention, comparison, and outcome) questions on various aspects of spontaneous pneumothorax.

For the evaluation of the quality of evidence and preparation of recommendations we followed the guidelines of the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) working group.

Guía de práctica clínica de la SECT sobre el manejo de pacientes con neumotórax espontáneo

Palabras clave:
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RESUMEN

Esta guía de práctica clínica (GPC) surge como iniciativa del comité científico de la Sociedad Española de Cirugía Torácica.

Para elaborar dicha GPC se han formulado las preguntas PICO (paciente, intervención, comparación y outcome o variable resultado) sobre distintos aspectos del neumotórax espontáneo.

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☆☆ These guidelines have been approved by the scientific committee of the Spanish Association of Thoracic Surgery (*Sociedad Española de Cirugía Torácica*).

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Para la evaluación de la calidad de la evidencia y elaboración de las recomendaciones se han seguido las directrices del grupo de trabajo Grading of Recommendations, Assessent, Development and Evaluation (GRADE).

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Introduction

Pneumothorax is one of the most frequent pleural diseases treated in hospitals around the world, and it is responsible for 20% of hospitalizations in Thoracic Surgery Departments.[1] Its incidence is quite varied, as age-adjusted figures for primary cases range from 16.8 cases per 100 000 inhabitants/year (males: 24, and females: 9.8)[2] collected in England to 4.2 cases per 100 000 inhabitants/year in the USA,[3] or 3.8 per 100 000 inhabitants with secondary pneumothorax (males: 6.3, and females: 2).

The creation of these clinical practice guidelines (CPG) is justified, firstly, by the high incidence of spontaneous pneumothorax (SP) in the general (and actively employed) population, along with the consumption of resources of its initial management. Furthermore, the same patient with SP can be diagnosed and treated in different ways depending on the hospital or the doctor who is treating him/her. All this can produce different clinical results, unequal consumption of resources and some confusion in patients who consult different professionals to obtain a second opinion. The target population of these CPG includes patients with primary (PSP) and secondary (SSP) spontaneous pneumothorax.

The characteristics of this medical problem entail the need for adequate coordination between different specialists responsible for the care of patients with pneumothorax. It is precisely this target audience that these CPG are aimed at because, depending on the healthcare system of each autonomous community in Spain, patients will be treated by different medical professionals, including general emergency and primary care physicians, thoracic surgeons, pulmonologists or general surgeons. In addition, patients may be treated and their progress followed by any of the aforementioned professionals, so the guidelines aim to standardize the management criteria among the different medical professionals and create an environment of fluid communication and understanding. The main objective of these CPG is to summarize the best evidence currently available.

Methodology

These CPG have emerged as an initiative of the scientific committee of the Spanish Society of Thoracic Surgery (*Sociedad Española de Cirugía Torácica*, SECT). PICO questions (patient, intervention, comparison and outcome) have been formulated about the different aspects of SP. A search was carried out using the TRIP database, Cochrane Database of Systematic Reviews (The Cochrane Library) and OVID platforms using MEDLINE and EMBASE resources. A flow chart was created for each PICO question. The search process was conducted until May 2015 and was not limited by any language.

To evaluate the quality of evidence and the development of the recommendations, the guidelines of the GRADE[4] workgroup were followed (Appendix A).

An update of the guidelines is planned every 3–5 years maximum, or in a shorter period if new scientific evidence appears that could modify some of the recommendations offered by the guidelines.

Results

Etiopathogenesis

Many studies have tried to relate the appearance of pneumothorax with different factors. On the one hand are anthropological aspects, such as age, height or weight.[5] On the other hand are the presence of toxic factors, such as tobacco and its destructive effects on the pulmonary parenchyma, which increase the risk of developing pneumothorax by 20-fold[6] (GRADE recommendation 1B). Likewise, the presence of pulmonary diseases, such as chronic obstructive pulmonary disease, cystic fibrosis or interstitial lung diseases, etc., have been related to the appearance of secondary pneumothorax.[7] It is worth mentioning that studies have tried to correlate the appearance of SP with changes in atmospheric pressure,[8–11] without reaching conclusive results.

Finally, we can emphasize that the physiopathological mechanisms of SP remain unknown, although it is assumed that the primary form is the result of the formation and subsequent rupture of subpleural blebs or blisters.[12] There are hypotheses related with structural changes in the parenchyma (emphysematous changes): because the pressure gradient in the vertices is higher, this causes greater distension of the apical subpleural alveoli, with the consequent formation of blebs and their subsequent rupture[12] (low level of evidence).

In any case, the pathophysiology is multifactorial and remains unknown, giving rise to the entry of air into the pleural cavity depending on the mechanism of each baseline disease.[3,13]

Evolution

What does seem to be clear is the tendency for recurrence of this disease according to the treatment used and follow-up