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## Is it Possible to Improve the Management of Community Acquired Pneumonia in Hospital Emergency Departments?

### ¿Es posible mejorar el manejo de la neumonía adquirida en la comunidad en los servicios de urgencias hospitalarios?

To the Editor:

In 2008, the document "Management of community-acquired pneumonia in emergency departments" was published,<sup>1</sup> which was a collaboration between TIR-SEPAR (Area of Tuberculosis and Respiratory Infections of the Spanish Society of Pneumology and Thoracic Surgery) and INFURG-SEMES (Infections in Emergency Departments Study Group of the Spanish Society of Emergency Medicine). The objective of the document was to serve as a tool for reducing clinical variability and improving the comprehensive management of community-acquired pneumonia (CAP) in Hospital Emergency Services (HES). The document defines CAP as a disorder where there are "acute infectious compatible clinical features and its radiological demonstration." Undoubtedly, one of its key points is based upon the importance of administering the first dose of antimicrobial as early as possible, which is also indicated by the experts, as recommended by several of the most significant guidelines.<sup>2,3</sup> This cannot only be feasible in HES, but it needs to be an overriding aim today.<sup>4</sup> Experience shows that achieving this is not an easy task. This is due to many adverse factors (HES saturation, hospital admissions awaiting free beds, total number of emergencies per day and number of patients assigned per doctor), which have

proven to be independent predictors of the delay in administering the antibiotic for CAP within the first 4 hours in HES.<sup>5</sup> However, in order to achieve the early administration of the antibiotic, we decided to do the following: improve the triage or the initial evaluation of the patient; carry out an early detection of patients with CAP and/or criteria for sepsis; implement a management protocol for patients with suspected CAP (the above-mentioned SEMES-SEPAR document); and implement systematically a prognostic score to better complement the decision of admission or discharge, thus determining and administering the appropriate treatment at an early stage.<sup>6</sup> It is well known that adherence to clinical practice guidelines has shown a reduction in mortality, an improvement in the adequacy and precocity of treatments and an optimisation in the use of additional tests, thus increasing the rate of diagnoses achieved by HES. Therefore, we carried out a single-blind, prospective observational study from 6 January 2008 to 30 September 2008 (control group) and from 10 April 2008 to 15 January 2009 (study group) of adult patients with CAP in HES. The aim of the study was to analyse the performance, differences and improvement in the management of CAP, following the implementation of "the aforementioned 2008 SEMES-SEPAR recommendations for HES," by comparing the implementation of a previous group with a subsequent one. For the comparative analysis we used the SPSS 14.0 package (Student's t-test, Mann-Whitney U test and Yates' chi-square test for proportions, considering the  $p < 0.05$  value as significant difference). Table 1 shows some of the results obtained. Independent partners carried out the selection and inclusion of the patients and their subsequent follow-ups, until we had 100 consecutive confirmed cases in each group. These

**Table 1**

Comparative results before and after implementing the INFURG-SEMES and TIR-SEPAR recommendations

Results	GC N = 100	SG N = 100	Difference
SSa/SSb criteria (%)	8	10	NSD
Appropriate empirical antimicrobial treatment (%)	62	97	$p < 0.05$
Antibiotic administration within 4 h (%)	31	90	$p < 0.05$
Duration of antibiotic treatment (days)	12.5	9.1	$p < 0.05$
Hospital stay (days)	8.6 ± 6.2	6.3 ± 4.4	$p < 0.05$
Appropriate request for additional/microbiological tests (%)	18	74	$p < 0.05$
Obtaining final microbiological diagnosis (%)	22	47	$p < 0.05$
Discharge rate on the first visit from the emergency department (including observation within 24 h) (%)	38	42	NSD
Admission to SSU (24-72 h) (%)	23	26	NSD
Admission to a ward (%)	30	24	NSD
Admission to ICU (%)	9	8	NSD
Revisit within 30 days following the initial discharge from the HES (%)	17	8	$p < 0-05$
Total cumulative mortality at 30 days (%)	11	8	NSD

CG indicates control group (prior to the recommendations); HES, Hospital Emergency Services; ICU, intensive care unit; N, number of total patients in each group; NSD, no significant differences; SG, study group (post-implementation of the recommendations); SSa, severe sepsis; SSb, septic shock; SSU, short-stay unit.

independent partners described the SEMES-SEPAR document as "sound management" (including treatments and measures). Clinical sessions took place in the two groups, while all the HES doctors received help and information regarding the document, requesting its systematic application from 4 October 2008. The incidence rate of CAP was 0.56% in front of 0.59% of patients treated in HES (6-7 cases/1,000 rooms/year in the two groups). The average age was 62±21 years versus 65±19 years. The Charlson comorbidity index (mean±SD) was 1.9±1.6 versus 2.1±1.8, which increased 4.1±2.1 in front of 4.5±2.3 when weighting the age variable. The study and control groups had a distribution of cases that showed no significant differences regarding the risk groups on Fine's score (PSI: Pneumonia Severity Index). We can affirm that the implementation of the guidelines has significantly improved the care process for CAP in our HES. We managed to increase the appropriate empirical treatment and achieve greater aetiological diagnosis, a more appropriate microbiological application for additional tests, a shorter hospital stay, a shorter duration for the antibiotic and a lower rate for re-visits. In addition, and as expected in our study, we achieved a higher rate of appropriate antimicrobial administration within the first 4 hours of the patient's admission to the HES. In terms of absolute percentage mortality during the 30 days following hospital admission (assigned by the study partners to the actual infectious process or derived from complications), this is lower in the study group (8% compared to 11%), although without significant differences, possibly due to the sample size.

#### Conflict of interest

The authors affirm that they have no conflicts of interest.

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#### Central Serous Chorioretinopathy as First Sign of Onset of Sleep Apnea-Hypopnea Syndrome

##### Coriorretinopatía central serosa como forma de debut del síndrome de apneas-hipopneas del sueño

To the Editor:

In recent years, there have been major advances in our understanding of the pathophysiology of the sleep apnoea-hypopnoea syndrome (SAHS). In addition to the traditional relationship with cardiovascular risk or traffic accidents, it has been associated with metabolic disorders (atherogenesis or hydrocarbon metabolism disorders), neurological conditions (cerebrovascular disease or intracranial hypertension) or ocular diseases (drooping eyelid syndrome or glaucoma).<sup>1,2</sup>

We present a case of central serous chorioretinopathy (CSC) in a young patient, which was the first sign of SAHS. As far as we are concerned, this is the first case described in the Spanish literature. The patient was a 37-year-old man, who was an ex-smoker with a history of diverticulitis, which had been treated surgically, and common migraine, also known as migraine without aura. He went to the emergency services due to a 48-hour progressive loss of vision in the right eye, for which he was examined by the ophthalmology department. The examination of the right fundus revealed an accumulation of fluid in the macular area with detachment of the neuroepithelium. Fluorescein angiography was performed, exhibiting a hypofluorescent zone in the area of detachment and a late-stage hyperfluorescent leaking point (fig. 1A). The patient also underwent

optical coherence tomography, which showed the detachment of the neuroepithelium with subretinal fluid (fig. 1B). These findings were consistent with the diagnosis of CSC. Given his previous history of snoring, the patient was referred to our sleep unit for evaluation. In the case history, he experienced symptoms of a 3- to 4-month development that was consistent with snoring, apnoeic pauses, watery rhinorrhoea, dry mouth and morning and excessive daytime sleepiness (13 points on the Epworth test). There were no disorders found in the examination of the solid craniofacial or tonsillar hypertrophy. The patient presented with Mallampati II, BMI of 28.5 kg/m<sup>2</sup> and blood pressure of 130/85 mmHg. The radio-allergo-sorbent-assay (RAST) was weakly positive for *D. pteronyssinus* and *D. farinae*. The polysomnography (PSG) revealed an alteration of the sleep architecture, with an increased sleep surface and at the expense of respiratory events (mostly obstructive), with a respiratory disturbance index (RDI) of 64.2 h<sup>-1</sup>, a 94% average rate of oxygen saturation (SaO<sub>2</sub>) and a time below 90% of SaO<sub>2</sub> (TC90) of 5.5%. The patient was treated with continuous positive pressure airway (CPAP) at 7 cmH<sub>2</sub>O and antagonists of leukotriene receptors, improving the respiratory symptoms and decreasing daytime sleepiness (6 points on the Epworth test). The eye evolution was favourable, with recovery of the visual acuity in 4 weeks and the disappearance of the fundus alterations.

CSC has been described, in particular, among the ophthalmologic alterations of SAHS.<sup>3-5</sup> This condition produces a chorioretinal alteration that is consistent with the serous detachment of the neurosensory retina in the macular area, allowing the passage of fluid from the choroid to its final destination in the subretinal space. The condition usually occurs in young and middle-aged men, who