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Bibliografía

1. Benavides FG, Gimeno D, Benach J, Martínez JM, Jarque S, Berra A, et al. Descripción de los factores de riesgo psicosocial en cuatro empresas. *Gac Sanit.* 2002;16:222–9.
2. García-Rodríguez A, Gutiérrez-Biedmar M, Bellón-Saameño JA, Muñoz-Bravo C, Fernández-Crehuet J. Entorno psicosocial y estrés en trabajadores sanitarios de la sanidad pública: diferencias entre atención primaria y hospitalaria. *Aten Prim.* 2014. DOI: 10.1016/j.aprim.2014.09.003.
3. Díaz C, Suárez O, Fueyo A, Mola P, Rancaño I, Sánchez AM, et al. Calidad de vida de los profesionales en el modelo de gestión clínica de Asturias. *Gac Sanit.* 2013;27:502–7.

4. Luceño L, Martín J. DECORE. Cuestionario de evaluación de riesgos psicosociales. Madrid: TEA Ediciones; 2008.
5. Ortega C, Salas R, Correa R. Aspectos epidemiológicos del síndrome de burnout en el personal sanitario. Hospital Aquilino Tejeira. Febrero-marzo 2011. *Arch Med.* 2011;7:1–10.
6. Martínez-López JF. El celador en el área de urgencias. Málaga: Vértice; 2011.

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Four out of ten Spanish GPs declare to prescribe high-doses of beta-lactams in suspected streptococcal pharyngitis



Cuatro de cada diez médicos declaran prescribir dosis altas de betalactámicos ante la sospecha de una faringitis estreptocócica

Dear Editor:

Primary care guidelines recommend the utilisation of low-dose β -lactams, mainly penicillin V, in patients non allergic to penicillin's with suspected bacterial pharyngitis.¹ Group A β -haemolytic streptococcus (GABHS), which causes 10–15% of all the episodes of pharyngitis in adults, is universally susceptible to penicillin and no meaningful differences have been observed among the different antibiotic choices for this condition.² Over the last years an increase of the defined daily doses of antibiotics per 1000 inhabitants and day has been observed in Spain, with a sharp increase in 2013.³ This study was aimed to know general practitioners' (GP) attitudes about management of streptococcal sore throat in Spain. A cross-sectional survey among a sample of the Spanish GPs was conducted over a 3-month period, from July to September 2013, using an internet-based survey. Participants were able to respond the questionnaire only once. The inquiry was available online in the semFYC website (semfyc; www.semfyc.es). All respondent answers were automatically entered into a data file which was checked for accuracy by two independent researchers. Descriptive analysis was carried out.

A total of 1239 GPs completed the questionnaire. In suspected streptococcal pharyngitis, 152 GPs considered

penicillin as the first-choice antibiotic (12.3%). The antibiotic most commonly mentioned as being prescribed by Spanish GPs for patients with sore throat was amoxicillin (679 cases, 54.8%), followed by amoxicillin + clavulanate (363 cases, 29.3%). The recommended doses of β -lactams were stated by 724 GPs (58.4%) while the remaining 41.6% of GPs declared to use higher doses of antibiotics (more than 500 mg for amoxicillin and amoxicillin and clavulanate thrice daily and more than 600 mg for penicillin V twice daily) for the treatment of suspected streptococcal pharyngitis (Table 1).

It is remarkable that despite the fact that GABHS remains universally susceptible to penicillin this antibiotic was only preferred by 12% of the GPs, and nearly 30% reported using amoxicillin and clavulanate. It is also surprising that high doses of β -lactams are preferred by four out of ten GPs

Table 1 Doses of amoxicillin and amoxicillin and clavulanate declared to be used by the respondents when treating patients with suspected bacterial sore throat.

Antibiotic	Dose	n (%)	IC 95%
Amoxicillin	250 mg t.i.d.	1 (0.1)	0–0.2
	500 mg t.i.d.	385 (56.7)	52.6–60.5
	750 mg t.i.d.	158 (23.3)	20.0–26.5
	1000 mg t.i.d.	135 (19.9)	16.8–23.0
	Total	679 (100)	
Amoxicillin and clavulanate	500/125 mg t.i.d.	175 (48.2)	42.9–53.5
	875/125 mg t.i.d.	171 (47.1)	41.8–52.4
	2000/125 mg b.i.d.	17 (4.7)	2.4–7.0
	Total	363 (100)	

b.i.d., twice daily; t.i.d., thrice daily.

for the treatment of suspected streptococcal pharyngitis. Advantages of using electronic surveys are their relative ease of implementation, and the potential to conduct large-scale surveys whilst eliminating the costs of postage and administration.⁴ However, this internet-based questionnaire may have introduced selection bias, as only internet users were invited to participate in the study. Another difference is the gap between opinion and actual practice. This was a study of opinions which therefore does not necessarily reflect what is in fact prescribed in primary healthcare consultations. One strength of this survey, however, is the fact that this is one of the largest studies on public views of management of sore throat. The preference for higher doses of β -lactams might be due to the fact that high doses have been recommended in the last decade in an attempt to empirically cover penicillin-intermediate strains of common community-acquired respiratory germs, such as *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis* in mainly lower respiratory tract infections but also in rhinosinusitis and otitis media.⁵ However, the role of these germs in sore throat is negligible and the antibiotic treatment should be targeted to treat the infection caused by GABHS, which is absolutely susceptible to even low doses of β -lactams.⁶ In addition, current guidelines recommend these antibiotics to be given twice daily instead of the common thrice-daily regimens and even some authors back up the only-daily use of β -lactams for patients with streptococcal pharyngitis.⁷ Therefore, the use of high doses of antibiotics is not justified for patients with sore throat.

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Conflicts of interest

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Bibliografía

1. Cots JM, Monedero J, Arranz J, Gómez M, Morató ML, Sánchez C. *Manual de enfermedades infecciosas en Atención Primaria*. 3^a ed. Barcelona: semFYC Ediciones; 2010.
2. van Driel ML, De Sutter AI, Keber N, Habraken H, Christiaens T. Different antibiotic treatments for group A streptococcal pharyngitis. *Cochrane Database Syst Rev*. 2013;4:CD004406.
3. European Centre for Disease Prevention and Control (ECDC). Summary of the latest data on antibiotic consumption in the European Union; 2014, November. Available at: <http://ecdc.europa.eu/en/eaad/Documents/antibiotic-consumption-ESAC-Net-2014-EAAD.pdf>
4. Wyatt JC. When to use web-based surveys. *J Am Med Inform Assoc*. 2000;7:426–9.
5. Pérez-Trallero E, Martín-Herrero JE, Mazón A, García-Delafuente C, Robles P, Iriarte V, et al. Antimicrobial resistance among respiratory pathogens in Spain: latest data and changes over 11 years (1996–1997 to 2006–2007). *Antimicrob Agents Chemother*. 2010;54:2953–9.
6. Ralph AP, Carapetis JR. Group A streptococcal diseases and their global burden. *Curr Top Microbiol Immunol*. 2013;368:1–27.
7. Andrews M, Condren M. Once-daily amoxicillin for pharyngitis. *J Pediatr Pharmacol Ther*. 2010;15:244–8.

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