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Vaccines for pneumococci, Haemophilus and meningococci

DISTRIBUTION OF SEROTYPES CAUSING INVASIVE PNEUMOCOCCAL DISEASE IN ADULTS IN 2010-2013 IN SPAIN (ODIN STUDY GROUP)

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Objectives: To analyse changes in serotype distribution of invasive pneumococcal disease (IPD) in adults in Spain.

Methods: A prospective, active, hospital-based surveillance of culture-confirmed IPD episodes in hospitalized adults (≥18 years) was performed in 9 Spanish hospitals (1st period: 1stAugust 2010-1stJune 2011, 2nd period: 2ndJune 2011-1stJune 2012; 3rd period: 2ndJune 2012-1stJune 2013). IPD was considered as isolation of *S. pneumoniae* from sterile fluids. All isolates were sent to the Spanish Reference Laboratory for Pneumococci for serotyping by Quellung reaction and/or dot blot assay.

Results: 637 isolates (4 non-typeable) were included. The Table shows PCV13 serotypes [n (%)] by study period.

	1st period (n=191)	2nd period (n=242)	3rd period (n=200)	Total (n=633)
1	12 (6.3)	8 (3.3)	13 (6.5)	33 (5.2)
3	22 (11.5)	27 (11.2)	27 (13.5)	76 (12.0)
4	7 (3.7)	5 (2.1)	6 (3.0)	18 (2.8)
6A/6B/6C	3 (1.6) / 3 (1.6) / 11 (5.8)	2 (0.8) / 1 (0.4) / 11 (4.5)	1 (0.5) / - / 10 (5.0)	6 (0.9) / 4 (0.6) / 32 (5.1)
7F	16 (8.4)	20 (8.3)	12 (6.0)	48 (7.6)
9V	2 (1.0)	7 (2.9)	2 (1.0)	11 (1.7)
14	11 (5.8)	9 (3.7)	11 (5.5)	31 (4.9)
19A/19F	18 (9.4) / 4 (2.1)	21 (8.7) / 10 (4.1)	20 (10.0) / 5 (2.5)	59 (9.3) / 19 (3.0)
5/18C/23F	- / 1 (0.5) / 2 (1.0)	- / 3 (1.2) / 3 (1.2)	1 (0.5) / 3 (1.5) / 2 (1.0)	1 (0.2) / 7 (1.1) / 7 (1.1)

PCV13 + 6C accounted for 112 (58.6%), 117 (52.5%) and 113 (56.5%) isolates in the 1st, 2nd and 3rd period, respectively.
Isolates belonging to non-PCV13 + 6C serotypes accounted for 281 (44.4%) isolates, being serotypes 8 (6.0%), 15A (3.8%), 22F (3.6%), 11A (3.2%), 24F (3.0%), 16F (2.7%) and 12F (2.4%) the most prevalent in global in decreasing order, with other 22 different serotypes showing <2.4% isolates each.

Different serotype distribution was found in Madrid (n=169; PCV in the paediatric immunization program since November 2006) than in Barcelona (n=213; PCV in private market), with lower percentage of PCV7 isolates (6.5% vs. 17.4%, p=0.002). Serotypes 8 (14.2% vs. 3.3%, p<0.0001) and 16F (5.9% vs. 0.5%, p=0.003) were more frequent in Madrid, and 24F in Barcelona (5.6%vs. 0.6%, p=0.008).

Conclusions: Over the study period, serotypes included in PCV13+6C were maintained around 55%, with no changes in
serotype distribution. Differences were only found in Madrid versus Barcelona for PCV7 serotypes and after 7 years of PCV7 included in the paediatric immunization program in Madrid Region.