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Abstract (eposter session)

Incidence and Streptococcus pneumoniae serotype distribution associated with reportable meningitis in Norway, 2007-2009

S. Gray*, D. Lambrelli, D. Eriksson, S. Munson, R. Wasiak, M. Raluy (Collegeville, US; London, UK)

Objectives: To describe the incidence of reportable meningitis and the Streptococcus pneumoniae (SP) serotype distribution in pneumococcal meningitis cases reported in Norway from 2007–2009. Methods: A retrospective database analysis was performed. Patients with laboratory-confirmed meningitis due to a reportable pathogen between Jan 2007–Dec 2009 were identified from the Norwegian Surveillance System for Communicable Diseases (MSIS) database. Population data were obtained from Statistics Norway (population in 2007: 4,681,134; 2008: 4,737,171; 2009: 4,799,252). Incidence was calculated as new cases per 100,000 persons stratified by year and age group. Frequency of infectious agent and SP serotype were also investigated. Results: Incidence of reportable meningitis varied from 1.58/100,000 in 2007, peaking at 1.71/100,000 in 2008 before decreasing to 1.15/100,000 in 2009 (Table 1). Infants aged 0–1 years had the highest incidence of meningitis in 2007 but rates decreased in 2009 (2007: 10.31/100,000; 2008: 10.16/100,000; 2009: 3.33/100,000). In older adults, the highest rates of meningitis were seen in those aged >=80 years in 2007 (3.67/100,000), and those aged 60–69 years in 2008 (4.51/100,000) and 2009 (2.06/100,000). SP was the most commonly reported pathogen representing 68.4%, 67.1% and 52.6% of all cases from 2007–2009. The second most frequent pathogen was Neisseria meningitidis group B: 9.2%, 9.8% and 21.1% cases from 2007–2009. Pneumococcal meningitis incidence was higher among those aged 0–4, 50–64, and >=65 years. Rates were highest in infants aged 0–1 year in 2007 and 2008 (4.29/100,000 and 5.08/100,000, respectively), notably no pneumococcal meningitis cases were reported in this age group in 2009 with the highest rates instead seen in adults aged 60–69 years (1.85/100,000). Serotypes present in 7-valent pneumococcal conjugate vaccine (PCV7) decreased from 40.8% in 2007 to 21.4% in 2009, while non-13-valent pneumococcal conjugate vaccine (non-PCV13) serotypes increased from 34.7% to 60.7% from 2007–2009. The most commonly identified SP serotypes in 2009 were 10A (14.3%), 15C (14.3%), and 7F (10.7%). Conclusions: By 2009 a reduction of SP meningitis was observed in children aged 0–1 years, which followed the introduction of the PCV7 National Immunization Program in 2006. However, vaccine type (39.3%) and non-PCV13 vaccine type SP meningitis burden remains present in adults >20 years.

Table 1. Annual incidence of reportable meningitis in Norway from 2007–2009 by age group

	Incidence of reportable meningitis per 100,000 persons					
	0–4 years	5–19 years	20–49 years	50–64 years	>=65 years	Total population
2007						
All Reportable Pathogens (N=74)	4.14	1.19	0.83	2.43	2.04	1.58
Pneumococcal meningitis (N=51)	*1.73*	*0.76*	*0.57*	*1.97*	*1.60*	*1.09*
2008						
All Reportable Pathogens (N=81)	5.45	0.86	0.62	2.61	3.17	1.71
Pneumococcal meningitis (N=55)	*3.06*	*0.32*	*0.36*	*2.38*	*2.16*	*1.16*
2009						
All Reportable Pathogens (N=55)	2.35	1.07	0.71	1.56	1.42	1.15
Pneumococcal meningitis (N=29)	*0.00*	*0.11*	*0.46*	*1.23*	*1.14*	*0.60*

N, number of incident cases