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Miscellaneous of community pathogens and infections

SURVEILLANCE OF INVASIVE BACTERIAL DISEASES (N. MENINGITIDIS, H. INFLUENZAE, S. PNEUMONIAE) AND EVALUATION OF VACCINE COVERAGE IN 7 ITALIAN REGIONS, 2008-2012

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Objectives

The aim of the study was to evaluate the trend of the incidence and the vaccine coverage for Invasive Bacterial Disease (IBD) among children in seven Italian Regions.

Methods

In Italy, all cases of invasive bacterial disease due to meningococcus, pneumococcus, and *Haemophilus influenzae* are routinely reported at the Istituto Superiore di Sanità, as promoted by the Ministry of Health. Vaccines strategies are decided by the 21 Regions in accordance with national immunization plan. Vaccine coverage data for these vaccines are available only at regional level. In this report, vaccine coverage data and data from the Italian National Surveillance System for IBD from 7 Italian regions for the years 2008-2012 were analysed.

Results

The incidence of invasive disease due to meningococcus C for all age groups declined from 0.22 in 2008 to 0.07 per 100,000 in 2012. Meningococcus B disease incidence varied depending on the age; in particular, with regard to the age group 0-4, the incidence was 1.7, 1.91, and 1.08 per 100,000 in 2008, 2009, 2012, respectively. The average coverage of MenC vaccination was estimated around 72%.

The incidence of disease due to invasive *H. influenzae* remained stably low; the incidence in all age groups was 0.18 x 100,000 in 2008 and 0.22 in 2012. A decrease in cases of disease due to the serotype B (from 17% to 10%) has been observed while the proportion of non-capsulated cases increased from 70% to 75%; this appears to be associated with the universal vaccination program against serotype b, whose coverage is as high as 95%.

The incidence of *S. pneumoniae* invasive disease, in the age group 0-to-4, declined from 7.1 per 100,000 in 2008 to 3.8 in 2012. Focusing the attention on the serotypes included in PCV13, the incidence in individuals older than 65 years decreased from 4.7 per 100.000 in 2010 to 3.9 in 2012. Considering a mean coverage of 80%, a herd immunity effect might be hypothesized.

Conclusions

There is evidence that, in Italy, IBD incidence slightly declined in specific age groups targeted by immunization programme and for pneumococcus we observed first signals of an herd immunity effect . Improvement of the surveillance is needed to predict the impact and monitoring the effectiveness of available and future vaccines.