

**EV0201**

**ePoster Viewing**

**Community-acquired respiratory infections**

### **Pertussis in Emilia Romagna region (Italy): microbiological diagnosis**

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**Background:** Whooping cough is a bacterial respiratory infection caused by *Bordetella pertussis* and it is a significant cause of childhood morbidity and mortality. Despite widespread vaccination, pertussis remains endemic in Italy as well as in other European countries. Early diagnosis and treatment of pertussis might limit its spread to other susceptible people. Microbiological diagnosis of pertussis is difficult to obtain due to the variations in the specificity and sensitivity of the different methods. Differences in methods and protocol among European countries have also been detected. The ECDC is currently addressing the harmonization and improvement of pertussis diagnosis for surveillance and outbreak detection/monitoring in order to assure quality and comparability of data. Since 2013, our laboratory has been the designated Reference Laboratory for pertussis microbiological diagnosis in the Italian region of Emilia Romagna (ER), where there is an overall high level of healthcare service. We describe the data obtained by microbiological diagnosis performed on the suspected pertussis cases reported in the ER region during December 2013 to November 2015.

**Material/methods:** Seventy-eight suspected pertussis cases (mean age: 4.5 years) were reported. The microbiological diagnosis was performed as follows: *i*) in all cases the molecular diagnosis was carried out using a commercial PCR method (BORDETELLA R-gene<sup>®</sup> bioMerieux); *ii*) the culture test was performed in 54 (69.2%) cases and, *iii*) the serological test was performed in 32 (41%) cases using the IgG and IgA-PT (NovaLisa, *Bordetella pertussis* toxin-ELISA, DiaSorin).

**Results:** The results obtained by molecular, culture and serological tests in the 78 suspected pertussis cases were summarized in the following table.

N° cases	Real time PCR (nasopharyngeal aspirate samples)	Culture test (nasopharyngeal aspirate samples)	ELISA test IgA&IgA-PT
6	+	+	/
6	+	/	/
6	+	-	-
6	+	-	+
4	-	-	+
4	-	/	+
12	-	-	-
20	-	-	/

14	-	/	/
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+: positive; -: negative; /: not done; bold results: confirmed cases

Of the 78 cases, 32 (41%) resulted positive for at least one of the three microbiological methods used. The PCR method identified the most number of positive cases (24/32, 75%). The 8 cases (25%) resulted negative by PCR were confirmed as pertussis cases only by serological testing. In these cases the median time between the onset of symptom and sampling was 28 days (range, 24-33).

**Conclusions:** In order to assure a correct microbiological diagnosis for pertussis it is important that available diagnostic tests are used appropriately in relation to the timing of symptom onset.