

Correspondence

Re: Clinical Diagnosis of *Bordetella Pertussis* Infection: A Systematic Review (J Am Board Fam Med 2017;30:681.)

To the Editor: I read with a great interest the recent article by Ebell et al¹, reporting their meta-analysis on the accuracy of signs and symptoms for the diagnosis of pertussis. A timely recognition and diagnosis of cases of pertussis is fundamental for an appropriate clinical management preventing the potential complications, especially in children.¹ Indeed, pediatric patients resulted to be more prone to respiratory problems related to pertussis, because of their smaller airway size and/or more accentuated cough reflexes and bronchial hyper-reactivity.² Probably, for the same reason, children showed the typical clinical picture characterized with paroxysmal and whooping cough, and vomiting more frequently than adults. Indeed, Ebell et al¹ reported these 2 clinical aspects as being more accurate to diagnose pertussis in children than adults. Moreover, the typical signs and symptoms resulted to be more sensitive, but less specific, in vaccinated people than in the unvaccinated population. However, as recognized by the authors themselves, several limitations could have affected those clinical results and, therefore, those conclusions might be considered with caution.¹

In our opinion, the fundamental clinical message that has been launched through this meta-analysis is summarized in the conclusions: “the clinician’s overall impression was the most accurate way to determine the likelihood of BP infection when a patient initially presented.” Undoubtedly, in several clinical settings, the validation of some clinical decision rules (CDRs) combining signs, symptoms, and readily available laboratory tests, has facilitated the prompt recognition of specific diseases, but those will never completely replace physician’s clinical evaluation and judgment. To some extent, this meta-analysis statistically supported such a concept, showing that the “overall clinical impression” had a positive likelihood ratio (LR) of 3.3 and a negative LR of 0.63: the former value is the highest among the clinical variables that have been considered and the latter is among the lowest ones.¹

Nowadays, general pediatricians must go back to suspect pertussis in infants also in presence of atypical respiratory symptoms, as it occurs in adults more frequently.³ Very recently, we achieved a diagnosis of pertussis thanks to our overall clinical impression, derived from the combination of clinical aspects, patient’s age, vaccination status, and response to previous therapy. A 8-month-old infant was addressed to the Pediatric Department, as she had suffered a persistent/recurrent cough, leading to episodic asthmatic crisis (without sig-

nificant respiratory distress nor apnea), despite previous therapies, including bronchodilator drugs, steroids, and β -lactam antibiotics. When the infant was evaluated at the hospital, a complete clinical history and a careful physical examination were obtained; moreover, a chest radiograph was requested and showed an interstitial pattern of lung inflammation, consolidating at the upper right lobe. The mother confirmed that her daughter had received all the scheduled vaccinations for age (according to the Italian vaccination program, the first and the second dose), as well as her 4-year-old brother did, too. However, considering the long-lasting clinical history, the evaluation of serum IgM specific for *Bordetella pertussis* was requested and antibiotic therapy with clarithromycin was started concomitantly. Four days later, the result confirmed the presence of specific IgM, supporting a diagnosis of pertussis.

Such a short clinical report further confirmed that the occurrence of pertussis during the first year of life must be suspected and investigated in infants presenting persistent cough and/or asthma and, thus, in absence of the typical signs and symptoms, such as whooping cough, paroxysmal cough, and vomiting. Our overall clinical impression let us make diagnostic and therapeutic decisions at bedside.

Pursuing the diagnosis of re-emerging infectious diseases as early as possible, despite the lack of validated CDRs, is fundamental to provide an appropriate medical management and to prevent further spreading in the population, especially when herd immunity has been impaired for several preventable infectious diseases.⁴ Thus, the clinical sense of the physician still remains a fundamental tool, awaiting specific CDRs.

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References

1. Ebell MH, Marchello C, Callahan M. Clinical diagnosis of bordetella pertussis infection: A systematic review. J Am Board Fam Med 2017;30:308–19.
2. Marseglia GL, Caimmi S, Marseglia A, et al. Rhinosinusitis and asthma. Int J Immunopathol Pharmacol 2010;23(1 Suppl): 29–31.
3. Chiappini E, Stival A, Galli L, et al. Pertussis re-emergence in the post-vaccination era. BMC Infect Dis 2013;13:151.
4. Poddighe D. Letter to the editor: The measles outbreak in Bulgaria, 2009–2011: An epidemiological assessment and lessons learnt—But not completely yet. Euro Surveill 2016; 21(13).