

Title: WHOOPING COUGH OUTBREAK WAS CHARACTERIZED BY ALTERATION OF SEROTYPE PREVALENCE OF *BORDETELLA PERTUSSIS* STRAINS IN DISTRITO FEDERAL DURING 2011-2014

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Bordetella pertussis is a Gram-negative human-restricted bacterium that causes whooping cough or pertussis, which is the most prevalent vaccine-preventable disease worldwide. The introduction of the pertussis whole-cell vaccination for young children, followed by the introduction of the pertussis acellular vaccination (along with booster vaccination) for older age groups, has affected the bacterial population and epidemiology of the disease. *B. pertussis* is relatively monomorphic worldwide, but nevertheless, different countries are facing different epidemiological evolutions of the disease. In Brazil, a sudden increase of pertussis cases was observed since 2011. In Distrito Federal, 442 were observed from 2010 to 2014. The aimed of this work was to identify the serotypes of *Bordetella pertussis* isolated in Distrito Federal and surrounding during 2012 to 2014. For this approach, positive culture from *B. pertussis* of patients presenting whooping cough signs were submitted to detection of the specific *B. pertussis* O1 antigen and serotyping were performed by slide agglutination test using O1, and Fim 2 and Fim 3 antibodies, respectively. Ninety two *B. pertussis* strains were isolated from July 2012 to August 2014: 62 strains were isolated from 17 regions from Distrito Federal (DF), and 21 were from Goiás (GO) and Minas Gerais (MG). The majority of *B. pertussis* strains were isolated from Planaltina (DF). The most prevalence were observed among patients from patients with 02 to 04 months of age (40/92), followed by 0 to 01 months of age (28/92). The high prevalence of *B. pertussis* infection among babies up to 04 months confirmed the observations in Brazil, in which were recorded 4921 cases in this age range. All the three *B. pertussis* serotypes were identified among the isolates. Fim2 serotype were the most prevalent (53.23%), followed by Fim3 (31.61%) and Fim2,3 (13.04%). During the period analyzed, there was an alteration of the prevalent serotypes: from July 2013 to July 2014, Fim3 was the most prevalent however from August 2013 to August 2014 the most prevalent serotype was Fim2. Serotyping results suggest that the *B. pertussis* outbreak was caused by different two clones from *B. pertussis* in Brasilia –DF during the period.

Key words: *Bordetella pertussis*, serotyping, whooping cough

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