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Risk factors for *Haemophilus influenzae* carriage among Ecuadorian children

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Background: *Haemophilus influenzae* (Hi) colonizes the human upper respiratory tract (URT), and constitutes a relevant pathogen in children due to its ability to cause upper and lower respiratory tract diseases and invasive disease after colonization [1,2]. These can be found colonizing the URT in approximately 50-80% of the population and constitute a major cause of mortality among infants and children in developing countries [3].

Objective: This study aims to determine Hi and other respiratory pathogens nasopharyngeal colonization prevalence in Ecuadorian children.

Methods: A cross sectional study was carried out from January to June 2018 among 351 healthy children between 0 to 13 years old, representing three major ethnic groups of the country: Mestizo, AfroEcuadorian, and Indigenous. A survey was applied to caregivers and nasopharyngeal swabs were collected from the children using a rayon tipped swab (Transystem™ Copan Italia). *Haemophilus influenzae*, *Streptococcus pneumoniae, Moraxella catarrhalis* and *Staphylococcus aureus* were isolated and identified using microbiological standard methods [4]. Detection of β-lactamase activity was determined using the chromogenic nitrocefin test (Thermo Scientific™ Remel Nitrocefin Disk). The identification of the Hi bacterial capsule was carried out with conventional PCR [5].

Results: In total, 114(32.5%) children were colonized by *Haemophilus influenzae*, from them, 60%(60/100) were Afroecuadorian children, 30%(30/100) were Indigenous, and 16.5%(25/151) Mestizo. H.influenzae co-colonization with either *Streptococcus pneumoniae, Moraxella catarrhalis* or *Staphylococcus aureus* reached 20,2 %(71/351). Only two of the H influenzae isolates were positive for bexA (3%) and type b genes, therefore type B. The rest (97%) were non-typable H. influenzae (NTHi). 30% of the Hi isolates presented β-lactamase activity.

Conclusion: Only two factors reflected to be related to *H. influenzae* colonization after the logistic regression analysis: breastfeeding and ethnicity. This study showed that Africanecuadorian children and those who hadn't been breastfed were more likely to be colonized by this respiratory pathogen.

Biography:

Ricardo Izurieta, MD, Dr.PH, MPH is Professor and Director of Global Communicable Diseases at COPH and Director of the Public Health Scholar Concentration at COM in the University of South Florida. Dr. Izurieta received his MD from the Central University of Ecuador and carried out his postdoctoral training in Public Health and Tropical Infectious Diseases at University of Alabama at Birmingham (USA), Emory University (USA), and Universidad Cayetano Heredia (Peru). In 1991, he faced the cholera epidemic as National Director of the Cholera Program in the Ministry of Public Health of Ecuador. In 1997, he was appointed Chief of the Department of Epidemiology and Director of The Vaccine Center of the Armed Forces of Ecuador.