

O468

Abstract (oral session)

Community-acquired respiratory infection caused by novel human coronaviruses in Peru

H. Razuri, M. Malecki, Y. Tinoco, E. Ortiz, C. Guezala, C. Romero, A. Estela, P. Brena, M.-L. Morales, G. Luca, J. Gomez, T. Uyeki, M.-A. Widdowson, G. Salmon, V. Schildgen, D. Bausch, O. Schildgen*, J. M. Montgomery (Lima, PE; Cologne, DE; Atlanta, US; New Orleans, US)

Background: Respiratory infections remain a major cause of morbidity and mortality worldwide. Novel respiratory viruses, such as human coronaviruses (HCoV), bocaviruses, and human metapneumovirus, are recognized as common causes of respiratory disease. HCoV drew the attention of the scientific community after the identification of SARS-coronavirus in 2003. Since then, at least two additional coronaviruses (HCoV-NL63; HCoV-HKU1) associated with human illness have been discovered. No reports exist in the literature describing the existence of these viruses in Peru. Methods: Respiratory samples were collected from influenza like illness (ILI) cases who are participating in a population-based respiratory surveillance study in Peru. This study, initiated in June 2009, follows approximately 7000 participants, from 1500 households living in four geographically distinct locations across Peru: Lima (central coast/urban), Tumbes (tropical coast/rural), Cusco (highlands/semi-rural), Puerto Maldonado (Amazon rainforest/urban). Samples were tested by real-time RT-PCR for influenza A and B. A sub-group of 173 samples, negative for influenza was selected to perform additional testing for additional respiratory viruses using a multiplex Luminex RVP assay. Results: Of the 173 samples, 11 (6.4%) were positive for HCoV, 8 (4.6%) for HCoV-HKU1, 2 (1.2%) for HCoV-NL63, 1 (0.6%) for HCoV-229E. None were positive for HCoV-OC43. The majority of the cases were male, under the age of 5 to (7/11; 64%). One participant was 7 months old, while three were adults (31, 32 and 59 years old). Participants with HCoV infections started their ILI disease episodes between mid April and mid December; however 9/11 participants started their disease between mid May and July, the winter season in Peru. HCoV cases were observed from all four sites, three from Lima, four from Cusco and two each from Puerto Maldonado and Tumbes. Discussion: To our knowledge this is the first report of HCoV infection in humans from Peru. The prevalence in our study is similar to previous reports. A clear seasonality for HCoVs was also found. HCoV infections were from four sites in Peru, suggest that HCoVs circulate in urban and rural areas in Peru. HKU1 infections were most common in our populations, which is in contrast to other studies where viruses such as HCoV-OC43 are most prevalent. We only found positive samples in 2010; this could be explained by a biennial behavior as previously reported.