

Prevalence, Clinical Characteristic and Pattern of Distribution of Seasonal Corona Virus Associated Acute Respiratory Tract Infections among Adults and Children in the Central Province of Sri Lanka from January 2020 - October 2022

S. Arunasalam^{1*}, R. Muthugala² and F. Noordeen¹

¹*Department of Microbiology, Faculty of Medicine, University of Peradeniya, Peradeniya, 20400, Sri Lanka*

²*National Hospital Kandy, Kandy, 20000, Sri Lanka*

**Shiyamaleearunasalam@gmail.com*

Human coronavirus (hCoV) is commonly detected in nasopharyngeal aspirate samples from patients with respiratory tract infections. hCoV has gained increased attention after the severe acute respiratory syndrome CoV (SARS-CoV) outbreak in 2002. However, epidemiological understanding of seasonal CoVs (sCoVs) is currently incomplete in many settings including Sri Lanka primarily due to the fact that these viruses are not a part of the standard diagnostic testing panel. A total of 1062 respiratory samples from patients with acute respiratory tract infections (ARTIs) were tested to detect respiratory pathogens including sCoVs using a real time reverse transcriptase polymerase chain reaction from January 2020 to October 2022. Respiratory pathogens were detected in 51.03% patients with the detection rate of 6.96% for sCoVs. Among the sCoV positive patients, 36 hCoV-NL63/HKU1, 29 hCoV-229E and 9 hCoV-OC43 were detected. Fever, cough and sore throat were the most common symptoms detected in all three sCoVs. None of the hCoV- 229E and hCoV-NL63/HKU were detected in 2020. The major peak of hCoV- 229E was observed in April 2021 and hCoV- 229E was prevalent from January 2021 to July 2022. The major peaks of hCoV-NL63/HKU were observed in April 2021 and 2022. The least prevalent sCoV was hCoV- OC43. hCoV -OC43 was detected January to March 2020 and none of this virus was detected during 2021. There were only two hCoV- OC43 detected in June and October 2022. In conclusion, this study shows a prevalence of 6.96% for sCoV infections in patients with ARTI. The circulation pattern of sCoVs and their subtypes varied during the study period. Introducing national sCoV surveillance system will help early detection and monitoring of sCoVs, which will aid in tracking emerging CoVs such as SARS-CoV-2.

Keywords: Seasonal Corona Viruses, Prevalence, Distribution, Clinical Characteristics, Sri Lanka