Faecal Excretion of Coronaviruses in Bats in a Selected Location in Sri Lanka

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Bats act as a reservoir host for three out of the ten pandemic viruses including coronaviruses (CoV). Bats have harboured CoV for centuries before causing spill-overs to animals or humans. Objective: In this study, we aimed to identify the frequency of CoV shedding in bat faeces in a selected environment in the Central Province of Sri Lanka between September 2022 to May 2023 for a period of nine-months. Sampling was done in the Royal Botanical Gardens (RBG) in Peradeniya. Bat guano (faecal dropping) was collected once a week in the mornings by laying out polythene sheets (2m x 2m), the previous day afternoon, under randomly selected trees. Viral RNA was extracted to perform a Pancoronavirus (PanCoV) nested RT-PCR, which is designed to target the RNA-dependent RNA polymerase gene with a 442 base pair fragment. A total of 94-bat guano was collected, however, between the start of October 2022 to end of January 2023, bats have migrated therefore no guano was found. Of the 94-bat guano tested, 44 (46.8%) were identified as CoV by RT-PCR. Previous sequencing data on RBG bat guano was identified as betacoronaviruses (Nobecovirus) 97% similar to *Pteropus giganteus* in India and *Pteropus lylei* bats in Cambodia (2). In this study, we wanted to identify the frequency of bat CoV shedding in RBG bats. The month of September 2022 had the highest positivity for bat CoV (78%) whereas April 2023 showed the lowest positivity for bat CoV (25%). Overall, a reduction in bat CoV positivity was detected moving forward post the COVID-19 pandemic in Sri Lanka. Based on the interim results, 46% of RBG bats were tested positive for CoV. A reduction in bat CoV was detected with progressing months in 2023. Sequencing studies are in progress to identify the details of these bat CoVs.

Keywords: Bats, Coronaviruses, Sri Lanka, One Health

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