

ABSTRACT

Acute respiratory infection (ARI) is an acute infection that attacks the airways from the nose to the alveoli. Acute respiratory infections (ARI) occur in both the upper and lower airways called Upper Respiratory Tract Infections (URTIs). Human Coronavirus (HCoV) is one of the microorganisms of the virus type that occur in Upper Respiratory Tract Infections (URTIs) and has become a pandemic worldwide and has caused a high mortality rate. Based on data from the Indonesian Ministry of Health, it was recorded that in 2020 the number of Human Coronavirus (HCoV) positive cases in the 0-5 age group was 24,438 cases and in the 6-18 year age group was 80,555 cases. Infection from this virus has been proven to cause disease with potential damage to vital organs, including the lungs, heart, liver and kidneys, and infection poses a significant risk for patients at high risk of pneumonia. Global climate change has an influence on the increase in ARI cases. Temperature is related to changes in pathogenic organisms such as protozoa, bacteria and viruses, thereby increasing the potential for disease-causing transmission. Cold stress can alter the immune system and influence susceptibility to ARI.

This research uses a survey method by taking random samples from the swabs of children suffering from ARI. A total of 24 RNA samples were isolated from the swabs of ARI patients who visited Batur 1 and 2 Community Health Centers who met the inclusion criteria. HCoV detection is carried out using RT-PCR. Samples were extracted using Zymo Direct-Zol RNA Miniprep and the GoScript RT Promega system to obtain HCoV RNA, then cDNA was synthesized using the PROMEGA GoScript RT System and then amplified. The PCR product will then be subjected to electrophoresis and interpreted via UV transilluminator.

The results of this study show the 23 patient cDNA samples found 3 samples (13.04%) consist ISPA_D_009, ISPA_D_019, ISPA_021 detected Human Coronavirus and 20 samples (86.94%) did not detect Human Coronavirus. This proved that prevalence HCoV in children is still low. It can be concluded that RT-PCR can be used to detect HCoV in children.

Keyword : *Acute Respiratory Infection, Upper Respiratory Tract Infection, Human Coronavirus, RT-PCR, Electrophoresis.*