Altered expression of serum lncRNA CASC2 and miRNA-21-5p in COVID-19 patients

Abstract:

Infection by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that causes coronavirus disease 2019 (COVID-19) has a high incidence of spread. On January 30, 2020, the World Health Organization proclaimed a public health emergency of worldwide concern. More than 6.9 million deaths and more than 768 million confirmed cases had been reported worldwide as of June 18, 2023. This study included 51 patients and 50 age- and sex-matched healthy subjects. The present study aimed to identify the expression levels of lncRNA CASC2 and miRNA-21-5p (also known as miRNA-21) in COVID-19 patients and their relation to the clinicopathological characteristics of the disease.

The expression levels of noncoding RNAs were measured by RT-PCR technique. Results detected that CASC2 was significantly downregulated while miRNA-21-5p was significantly upregulated in COVID-19 patients compared to healthy subjects. A significant negative correlation was found between CASC2 and miRNA-21-5p. ROC curve analysis used to distinguish COVID-19 patients from controls. MiRNA-21-p serum expression level had a significant positive association with temperature and PO2 ($p = 0.04$ for each). These findings indicate that CASC2 and miRNA-21-p might be used as potential diagnostic and therapeutic biomarkers in COVID-19.

Keywords COVID-19, lncRNA CASC2, miRNA-21-p