Hosts and Consequences of Human CoV Infection

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Various human Coronaviruses such as Middle East Respiratory Syndrome Coronavirus (MERS-CoV), Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV), Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) have a different natural host like a bat, mouse and intermediate hosts like a cow, camel, Maylitan Pangolin while human host such as HCoV-NL63, HCoV-OC43, HCoV-229E, HCoV-HKU1 cause mild infection in the human body whereas SARS-CoV-2, MERS-CoV, and SARS-CoV cause mild or severe human disease like respiratory, cardiovascular, digestive disease depending upon the host condition and strain type of viruses. There are various viral receptors such as Angiotensin I-Converting Enzyme 2 (ACE2), ANPEP (also known as CD13), 9-O-acetylated sialic acids (9-0-Ac-Sia); DPP4 (also known as CD26), dipeptidyl peptidase 4 which helps in the invasion. Upon the invasion of SARS-CoV-2, there are structural changes in the host cells found in the human airway epithelial cells (at 96 hours). Various coronaviruses are zoonotic viruses which affect the digestive and respiratory system of mammals including human being.

Figure 1

Various human Coronaviruses such as Middle East Respiratory Syndrome Coronavirus (MERS-CoV), Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV), Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) have a different natural host like a bat, mouse and intermediate hosts like a cow, camel, Maylitan Pangolin while human host such as HCoV-NL63, HCoV-OC43, HCoV-229E, HCoV-HKU1 cause mild infection in the human body whereas SARS-CoV-2, MERS-CoV, and SARS-CoV cause mild or severe human disease like respiratory, cardiovascular, digestive disease depending upon the host condition and strain type of viruses. There are various viral receptors such as Angiotensin I-Converting Enzyme 2 (ACE2), ANPEP (also known as CD13), 9-O-acetylated sialic acids (9-0-Ac-Sia); DPP4 (also known as CD26), dipeptidyl peptidase 4 which helps in the invasion. Upon the invasion of SARS-CoV-2, there are structural changes in the host cells found in the human airway epithelial cells (at 96 hours). Various coronaviruses are zoonotic viruses which affect the digestive and respiratory system of mammals including human being.