

monia and humoral and cellular immune responses were observed^{***}. Moreover, prolonged virus shedding peaked early in the course of infection in asymptomatic macaques^{''}, and old monkeys showed severer interstitial pneumonia than young monkeys^{'*}, which is similar to what is seen in patients with COVID-19. In human ACE2-transgenic mice infected with SARS-CoV-2, typical interstitial pneumonia was present, and viral antigens were observed mainly in the bronchial epithelial cells, macrophages and alveolar epithelia. Some human ACE2-transgenic mice even died after infection^{''}. In wide-type mice, a SARS-CoV-2 mouse-adapted strain with the N501Y alteration in the RBD of the S protein was generated at passage 6. Interstitial pneumonia and inflammatory responses were found in both young and aged mice after infection with the mouse-adapted strain^{''}. Golden hamsters also showed typical symptoms after being infected with SARS-CoV-2 (REF.^{''}). In other animal models, including cats and ferrets, SARS-CoV-2 could efficiently replicate in the upper respiratory tract but did not induce severe clinical symptoms^{***}. As transmission by direct contact and air was observed in infected ferrets and hamsters, these animals could be used to model different transmission modes of COVID-19 (REFS^{'--'}®), Animal models offer important information for understanding the pathogenesis of SARS-CoV-2 infection and the transmission dynamics of SARS-CoV-2, and are important to evaluate the efficacy of antiviral therapeutics and vaccines. Clinical and epidemiological features It appears that all ages of the population are susceptible to SARS-CoV-2 infection, and the median age of infection is around 50 years^{****}!, However, clinical manifestations differ with age. In general, older men (>60 years old) with co-morbidities are more likely to develop severe respiratory disease that requires hospitalization