



The Open AIDS Journal

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EDITORIAL

Coronavirus Pandemic and HIV Infection

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Pandemic of the new Coronavirus (named Severe Acute Respiratory Syndrome Coronavirus 2, or SARS-CoV-2) has struck the world less than three months ago, but has already claimed thousands of lives. Originating in Wuhan, a city in the Hubei province of central China, where this animal virus crossed the species barrier from its natural host, bats or pangolins, to humans, the pandemic rapidly spread in China and made inroads to many countries all over the world. SARS-CoV-2, previously known as 2019-nCoV, is genetically 96% identical to bat coronavirus, and has a 79.5% sequence identity with SARS-CoV that scared the world community in the year 2003. It also shares the entry receptor with SARS-CoV - angiotensin converting enzyme II (ACE2). Based on this similarity and transmission pattern of other coronaviruses, it is safe to predict that SARS-CoV-2 likely spreads person-to-person via respiratory droplets produced by sneezing and coughing, most effectively at a distance of less than 6 ft. The virus is not as highly contagious as measles virus (chances of transmission are estimated at 3-4 new infections from 1 infected person), probably because it has not fully adapted yet to human host. The difference with other known coronaviruses

is that SARS-CoV-2 can be transmitted by infected people even before the early signs of disease (fever, coughing, weakness) become visible.

Severity of the disease (named Covid-19) caused by SARS-CoV-2 varies from mild forms to severe pneumonia and death. Currently, no drugs are approved for treatment of SARS-CoV-2 infection, but some of the HIV protease inhibitors used to treat HIV infection seem to inhibit infection by SARS-CoV-2. Mortality rate of SARS-CoV-2 is estimated at less than 2%, but to a large extent the outcome of infection depends on the immune system of the host. Immune responses of HIV-infected people, even those successfully treated with anti-retroviral drugs, may be compromised, making them more susceptible to infection and worsening the prognosis of Covid-19. Another potential concern for HIV-infected people is activation of the immune cells by SARS-CoV-2 antigens. Such activation promotes awakening of the latent HIV evidenced by the appearance of HIV in the blood of people treated with anti-retroviral drugs (HIV surge). The HIV surge may accelerate the course of HIV-associated co-morbidities (e.g., cardio-vascular and cognitive diseases) and increase the HIV reservoir, making future cure efforts more challenging. It is thus recommended that HIV-infected people be especially careful and try to avoid traveling to areas with high incidence of SARS-CoV-2 infection.

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