MEDICAL BITS FROM YOUR

Carlos E. Picone, MD

March 10, 2020 - Update Volume 2, Number 2

"As long as you live, keep learning how to live"

Lucius Seneca

1 – Your Health

2 – Medical News

3 – Debunking Myths

"A person who suffers before it is necessary, suffers more than is necessary".

Lucius Seneca

YOUR HEALTH and Medical News!

Viruses and the Crown – Update March 10th, 2020.

In late January 2020, we discussed the outbreak of the beta Corona Virus infection now labeled COVID-19 (Coronavirus Infection 2019) caused by the severe acute respiratory syndrome coronavirus 2 (SARSCoV2). It is difficult to discuss current health issues without addressing the pandemia triggered by this novel virus. In fact, our retirement accounts have already caught the virus even if we remain perfectly healthy!

What do we know?

Since it was first described in early December 2019, we have made strides in our knowledge of Covid-19. Within 10 days of the first reported cases of severe pneumonia in Wuhan, China, researchers isolated and sequenced the genome of the virus.

More than 120,000 cases have been confirmed in all continents and in most nations that have a quasi-reliable public health care system Individuals who have traveled to China, South Korea, Iran, Italy or Japan and develop symptoms consistent with a lower respiratory tract infection may warrant testing. Diagnostic kits are not widely available at present. There is an application process in place to request testing kits from the Centers for Diseases and Control and Prevention (CDC), but doctors' offices do not have access at present. This is still true as of March 9th, 2020.

The person-to-person spread occurs via respiratory droplets, similar to influenza. According to a WHO – China report, the rate of symptomatic infection after confirmed exposure ranges from 1-5%.

The mean incubation period is 5 days but may take up to 14 days after exposure for symptoms to appear. Most infections are not severe. In an earlier report from the Chinese Center for Disease Control and Prevention that included 44,500 infections, 81% were mild, 14% were severe with several lung lobes compromised by pneumonia or pneumonitis and 5% had critical disease developing respiratory failure. The initially reported case-fatality rate was 2.3% but likely much lower, as we are learning that many cases may be asymptomatic which will lower the case-fatality rate but also allow for the creation of a larger reservoir of disease and potential infection source, as asymptomatic individuals may transmit the disease and help propel the epidemic. In fact, the case-fatality rate outside China has been 0.7%. Most of the fatal cases occurred in individuals with advanced age or several underlying medical conditions. Remember that more than 80% of cases are mild

and only 3% of clinical cases occur in people under 20. In the cruise ship outbreak off the coast of Japan, where all the passengers and staff were tested, 17% of the population tested positive, but 50% were asymptomatic at the time of diagnosis.

In those who develop clinical disease, the white cell count can be elevated or low. It may cause significant and transient decline in lymphocyte counts below 1500. Some patients have elevated liver function test. All patients with disease had a fever. Up to 60% reported a dry cough and 35% had body aches. Difficulty breathing developed in 30% usually after 4-5 days.

If you or a loved one develops respiratory symptoms, the most likely diagnosis is still influenza, another respiratory virus or pneumoniae. If there are other epidemiologic reasons, such as recent travel or sick contacts from the sites mentioned and eventually from many more which lead you and your physician to suspect COVID-19, isolation and infection control measures should be put in place. This, of course, is changing as the disease has spread rapidly and is likely to reach our immediate vicinity in the near term. The CDC is deploying COVID-19 diagnostic kits – Reverse Transcryptase – Polymerase Chain Reaction tests (RT-PCR) and more rapid diagnostic methods are being developed. Adequate specimens can be obtained from the nasopharynx, oropharynx and other bodily fluids.

Treatment is mostly limited to supportive care measures at present, namely, intravenous hydration, symptomatic relief and care of complications. There are randomized trials already under way to evaluate the efficacy of a nucleotide analogue with activity against COVID-19 in vitro, called remdesivir, for moderate to severe infection. Lopinavir-ritonavir, which has activity against HIV appears to have in vitro efficacy against COVID-19, and is also being evaluated. Other Chinese remedies and chloroquine are also the subject of study.

Home management and observation may be appropriate for the majority of patients who are likely to develop relatively mild disease.

Prevention: Both, the World Health Organization (WHO) and CDC recommend standard, contact, and droplet precautions with the use of eye or face protection. The patient should wear a mask and be placed in a private room.

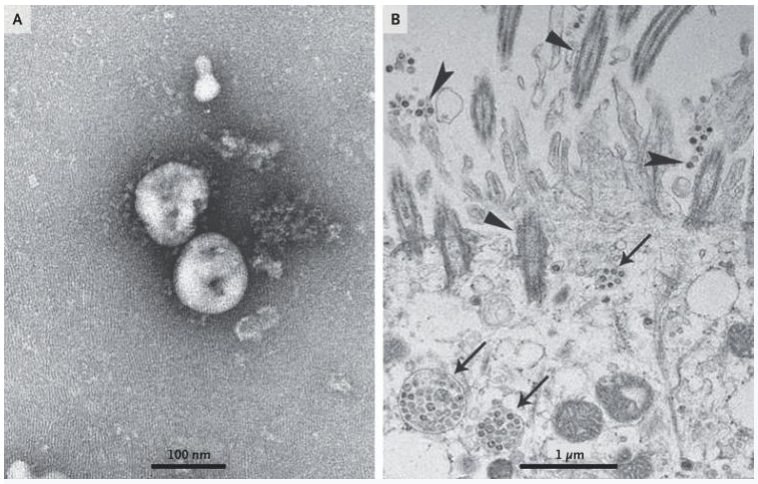
On Feb 28th, 2020, Li et al. reported the initial cohort of patients, describing that the median age was 59 years, with higher severity of illness in the elderly and among those with chronic conditions. There were no cases reported in children below 15 years of age, likely due to mild disease which escaped detection and implies that the case-fatality rate is a lot lower than initially perceived as discussed above. Another article by Guan et al. reported on Feb 28th, 2020, a mortality of 1.4% among 1100 patients with laboratory-confirmed disease but the case definition required pneumonia.

In aggregate, as summarized in an Editorial article on the New England Journal of Medicine on February 28th, 2020, the information available suggests that Covid-19 is similar to a severe seasonal influenza or a pandemic influenza, which has a case fatality rate of around 0.1% (1 out of 1000 individuals may perish as a result of the disease or more frequently, complications). This is a lot lower than the mortality documented from the other corona viruses emerging in the 21st century, SARS – 9-10% or MERS – 35%. It appears that the efficiency of transmission is 2.2, indicating that, on average, an infected person transmits the virus to two additional individuals. Of course, it also implies that until the “reproduction number” drops below 1.0, the epidemic will continue to spread.

Considering there are more than 120,000 cases reported in more than 100 nations, travel restrictions and quarantine measures are likely to just slow down the transmission, but we should be mentally and physically prepared for a pandemia of similar proportions to those caused by prior Influenza world-wide epidemics.

What should our patients with respiratory conditions and vulnerabilities should be alert to the usual symptoms of influenza – fever – runny nose – dry cough but less body and muscle aches and in particular increasing trouble breathing which may indicate progression of disease and development of inflammatory viral pneumonitis (damage of the pulmonary alveolar-capillary membrane where gas exchange takes place).

The International Coalition for Epidemic Preparedness and Innovations is already working on up to eight vaccine candidates which, if proven safe and effective in animal models, may be ready for human trials by May or June 2020. If you would like to keep abreast of this rapidly moving field, some excellent resources can be found here:
https://www.nejm.org/coronavirus
https://www.cdc.gov/coronavirus/2019-nCoV/index.html
https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/



COVID-19 - NEJM

DEBUNKING MYTHS: Q & A

Myth: Wearing a respiratory mask at all times will keep me safe!!! There no evidence that this is true. Regular surgical masks do not prevent the penetration of viruses are these are too small. They may catch droplets and prevent entrance but it is unlikely that you will keep a mask on for the duratio of your commute or your journey and it is likely you will touch it and remove i contaminating your hands and from there, your mucosal surfaces. The N-95 masks which are likely to catch viral particles and most suspended droplets a effective, but serious business to wear for longer than a few minutes and mu be fitted, placed properly and importantly, removed accurately to prevent contamination. In one study completed in a Japanese hospital, the use of surgical-type masks by health care workers did not reduced the frequency of colds or respiratory illnesses and subjects using masks were more likely to complain of headaches.

We will address other “myths” or controversial issues in future communicatio

In the meantime, keep cool, do not panic, eat a nutritious and diverse diet, stay active and be happy! And please do not worry about Covid-19!!! It will likely arrive and infect members of our community, but there

is no reason to panic or to worry for numerous reasons. Remember that the only certainty in life is… death… and the only fountain of youth proven by science, experience and millennia are exercise, laughter, humor and a good positive attitude!
Enjoy every minute of the JOURNEY!

Cheers!

Carlos Picone