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Covid-19 Pandemic and Its Novel Virus: Lessons Learnt so Far

Chikere Atulaegwu Anusiem*

College of Medicine, University of Nigeria Nsukka, Enugu Campus, Nigeria

***Corresponding author:** Chikere Anusiem, Center for Bioethics/Department of Global Health and Social Medicine, Harvard Medical School, Harvard University, Boston, Massachusetts, USA., Email: Chikere_Anusiem@hms.harvard.edu

Editorial

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Editorial

The Outbreak of Crisis at Wuhan

When an epidemic broke out in Wuhan, a Chinese city, late 2019 it resulted in horrifying high morbidity and mortality in the city and subsequently began spreading like wild fire [1-3]. Prior to its emergence, nothing was known about the causative agent of the epidemic and the human disease that came with it. On January 30, 2020 the World Health Organization (WHO) declared the outbreak a Public Health Emergency of International Concern (PHEIC) and when subsequently, the disease extended to other countries, notably Iran, South Korea, Italy, Spain, and the United States of America, WHO on March 11, 2020 proclaimed the development a Pandemic [4-6]. Mankind was obviously faced with a new rampaging killer. To limit the spread of the disease, find a cure, mitigate human suffering, curb the fatality rates, and ultimately put an end to the pandemic became urgent imperatives. The world had no choice than to learn as much as possible about the pandemic as fast as it could [1].

A Family of Respiratory Tract Pathogens

The causative agent of the epidemic was initially named the Novel Coronavirus because it was considered to be a new emerging zoonotic virus and also because it has been placed in the group of viruses known as Coronaviruses, with Coronaviridae as virus family name. Such viruses have been known to be positive-sense single-stranded RNA viruses having outer surface spikes or flower petal-shaped projections (peplomers) that, at very high magnification, look like crowns or the solar corona, hence their name, 'Coronaviruses'. The surface projections or spikes of the Coronaviruses have been reported to be vital for the entrance of the virus into host cells and for induction of host immune responses to the pathogen [7,8].

The Study Group of the International Committee on Taxonomy of Viruses named the new virus, 'Severe Acute Respiratory Syndrome Coronavirus-2' (SARS-Cov-2) [9]. With that, in terms of taxonomy, the novel Coronavirus (2019-n-Cov or SARS-CoV-2) acquired the following classification details: Nidovirales as Order, Cornidovirineae as Suborder, Coronaviridae as family, Beta corona virus as genus, Sarbecovirus as subgenus, and Severe Acute Respiratory Syndrome-related Coronavirus as name of its species. Two viruses: Severe Acute Respiratory Syndrome Coronavirus (SARS-Cov) and Middle East Respiratory Syndrome Coronavirus (MERS-Cov) which were responsible within the past decade for epidemics of Severe Acute Respiratory Syndrome (SARS) in 2003 in Asia and the Middle East Respiratory Syndrome (MERS) still endemic in Saudi Arabia respectively, belong to the this same Coronaviridae family of viruses. WHO named the disease caused by the novel virus: Coronavirus disease 2019 (COVID-19) [10-14].

Covid-19, Clinical Mimicry and Winning Strategies

Whereas COVID-19 shares the same initial clinical presentation as SARS and MERS: dry cough, sore throat, fever, (features of upper or lower respiratory infection), and breathlessness, among others, the novel Coronavirus has more rapid transmissibility; affects more people over much wider geographical areas; and perhaps produces more aggregate number of fatalities in many parts of the world simultaneously. SARS-CoV-2 (Covid-19) also has a great propensity to produce extensive pulmonary fibrosis and low blood oxygen saturation (hypoxia) in severe cases [15- 17].

The Matter of Spread of COVID-19 to Developing Nations

With reports of the spread of COVID-19 to Sub-Saharan Africa and developing countries in general, researchers, clinicians, health policy makers, multilateral agencies that

fund healthcare around the world may urgently consider putting in place the appropriate treatment protocols and logistics to deal decisively with the pandemic particularly in resource-poor African countries. International cooperation and assistance appears imperative. No nation will be sure of freedom from COVID-19 until the pandemic is eliminated globally.

HIV/AIDS, Tuberculosis and COVID-19

Theoretically, conditions of compromised immune status should increase an individual's susceptibility to infections such as COVID-19. Tuberculosis, HIV/AIDS, use of immune-suppressant drugs, cancer and diabetes mellitus are among conditions that lead to decreased immunity [18].

Nations that have high prevalence of such human conditions, particularly tuberculosis and HIV/AIDS would therefore be expected to anticipate the possibility of twin or triple co-infections of COVID-19 with HIV/AIDS, and tuberculosis; and therefore may have to be ready to deal decisively with such multiple co-morbities, should the pandemic encroach on their territories [19].

Robust supplies of and equitable access to COVID-19 testing facilities, personal protective equipment (PPE) for hospital workers, relevant medicines, skilled manpower to attend to the ill, as well as designated facilities to house patients for treatment and isolation have been some of the obvious requirements for logistic readiness. Provision of public facilities for isolation of COVID-19 patients deserve to be emphasized in developing nations because self -isolation at home for patients capable of passing on the virus to other people is not an option in communities battling with paucity of adequate residential housing or overcrowding.

Prospects for Effective Treatment and Prophylaxis

There are at present a good number of pharmaceutical agents, largely antimicrobial agents, including some antimalarial, antiviral agents, monoclonal antibodies, and relabeled drugs undergoing clinical trials for the treatment of COVID-19 [20]. There are also several candidate vaccines on clinical trial at this time.

Safe effective prophylactic vaccine for COVID-19, free from serious adverse effects or hidden costs, should obviously be a key attractive tool for prophylaxis while approved drugs for treatment will be welcome tools for curative purposes. As the world eagerly awaits the approval of such potent and safe specific remedies, drug policy makers and clinicians should from this early stage of COVID-19 consider insisting on multidrug regimens rather than monotherapy, except where that is contraindicated, in order to promote effectiveness of treatment and to avert or delay the emergence of drug resistance.

Conclusion

COVID-19 pandemic now raging like wild fire, generating diverse responses in different parts of the world, including prayers by the religious members of the global human community, various degrees of restrictions of human movement, and social distancing, has produced unprecedented high worldwide human mortality and morbidity in peace time. It is expected to be brought to a halt, and the fury of its fire quenched, as the world continues to rationally utilize experiences garnered from this pandemic in addition to appropriate utilization of new effective drugs, if and as soon as they receive regulatory approval.

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