COVID-19 Pandemic

Begume NNF

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Severe acute respiratory syndrome corona virus 2 (SARS-Cov-2) is the strain of corona virus that causes corona virus disease 2019 (Covid-19), the respiratory illness responsible for the Covid-19 pandemic[1]. This virus is simply known as corona virus, with previous provisional name "2019 novel corona virus" (2019-ncov) and "human corona virus 2019" (H-cov-19 or h-cov-19). World health organization (WHO) declared the outbreak a "Public health emergency of international concern "on 30th January 2020 and a "Pandemic" on 11th March 2020. SARS-Cov-2 is a strain of severe acute respiratory syndrome related corona virus. It has zoonotic origin and has close genetic similarity to bat-borne Corona virus. Somehow this virus hopped from bat to human possibly via pangolin. The outbreak was first identified in Wuhan city, Hubei province, China in early December 2019. On 31st December 2019, Wuhan municipal Health commission, China reported with a cluster of 41 patients with a mysterious pneumonia[2].

Most of those cases were connected to Huanan Sea food whole sale market in Wuhan. On 7th January 2020, Chinese authority identified a new type of corona virus called novel corona virus. First death from Covid-19 was recorded in China on 11th January 2020. In Bangladesh, first three corona virus cases were identified on 8th March 2020 and first death was recorded on 18th March 2020 who was a 70 years old with comorbidites. Corona virus primarily spreads between people through close contact and via respiratory droplets produced from coughing, sneezing, speaking etc[3-6].

As the pandemic is new and recent, its clinical manifestations, pathogenesis is still not unveiled fully. Researchers all over the world are working on virus itself, pathogenetic mechanisms, efficacy of drugs, innovation of vaccine, preventive measures etc. Different countries have developed their own treatment protocol according to WHO guideline, their own interests and available resources[6]. Bangladesh Government has published its last version of national guideline on 30th May 2020. According to this guideline cases are of three types, a. suspected b. probable c. confirmed case.

Clinical symptoms are too much variable according to age, sex, geographical locations and race. Flu-like symptoms including fever, cough, or difficulty in breathing are evident, and most people (80%) have mild or no symptoms. For the purpose of treatments patients are usually categorised to mild, moderate, severe and critical illnesses. Mild or influenza like illness (ILI) can be treated at home. Moderate, severe and critical illness need hospital admission even ICU care. In children COVID-19 may present as inflammatory conditions like Kawasaki disease, post streptococcal or staphylococcal toxic shock syndrome, bacterial sepsis, macrophage activation syndrome etc. There are wide range of skin manifestations also in the form of urticarial, acral ischaemia, vesicular, petechial and morbilli form rash. Moderate to critical illness varied from pneumonia, severe pneumonia, acute respiratory distress syndrome (ARDS), sepsis, septic shock, severe thromboembolic manifestations, pulmonary embolism, myocarditis etc. COVID-19 can be diagnosed by identification of virus or nucleic acid from infected secretions from nose and throats (also from bronchial aspirates via bronchoscopy). In Bangladesh RT-PCR (Real time polymerase chain reaction) is available for identifying viral nucleic acid. Chest X-ray (CXR) lacks sensitivity and high resolution computed tomography (HR-CT) scanning of chest is required (to see ground glass appearance, can be qualified as percentage of lung involvement), but even that may not be completely helpful. D-Dimer, CRP (C reactive protein), serum ferritin, arterial blood gas analysis, procalcitonin, CBC, cardiac enzymes, liver and renal function tests are done as per necessity and some have prognostic value. One Chinese study argues that beside pyrexia other commonly found distinctive feature is tachypnoea, and so, this might be useful diagnostic tools in public places[7-10]. Currently, there is no available standard treatment protocol, but there are several drugs we are presently using as trials according to institutional guidelines. Other than national guideline, in Military hospitals Bangladesh "Guideline on COVID-19 by DGMS" is used for management of adult and paediatric population. COVID 19 protocol of children in CMH Dhaka is updated monthly with new additions and sometime deletion of previous concept.

Mainstay of treatment is oxygen therapy by nasal cannula, normal mask, venturi mask, high flow nasal cannula (HFNC), CPAP (continuous positive airway pressure), BiPAP, ventilators etc. Droplet generating procedures are prohibited, and should be performed in a negative pressure room if indicated. Next are antivirals like a. Favipiravir, Remdesivir, Lopinavir, Osaltamavir etc, b. Antibiotics for secondary infections, c. Interleukin 6 inhibitor like Tocilizumab, Sarilumab to combat cytokine storm d. Anti-inflammatory drugs like Methyl prednisolone, IVIG e. Convalescent plasma to neutralize viral antigens f. Anticoagulants like Enoxaparin, Streptokinase, Rivaroxaban to combat thromboembolism. Many clinicians' advice Losartan as ACE receptor blocker where virus initially attach itself and Ivermectin as antiviral. Symptomatic like antipyretic, antihistamine is often adviced. Nutritional management and psychological support is mandatory. There are tremendous research works going on for bringing a vaccine. China, USA, Oxford – Imperial collaboration team in UK and many other countries are trying hard to finish trials of vaccine. It is impossible to say when definitive treatments or vaccines will be available[10-14].

From March 2020, COVID-19 has spread worldwide, too many Asian and Middle Eastern countries, including Japan, South Korea, Iran, Singapore, the United States and European countries including Italy, Spain and the United Kingdom. From March 2020, the Italian government has placed the whole country in lock down to prevent the spread of infection. The USA and many other countries have tried their best by implementing various restrictions according to their own interests. International flights are almost stopped worldwide. Arguably, countries not showing cases of COVID-19 are

Brig Gen Nurun Nahar Fatema Begum, *SBP,* MBBS, FCPS, FRCP, FACC, FSCAI, Professor & Head, Department of Paediatics, AFMC, Dhaka & Adviser Specialist in Paediatric Cardiology, CMH, Dhaka (*E-mail:* colfatema@hotmail.com).

either not capable or not willing to attempt accurate diagnosis for their population, and may worsen their death toll as a result. Attention has been focused on quarantining those shown to be infected and asking those potentially infected for self-quarantine. However, some scholars believe that the window of opportunity for containment has passed away for some underdeveloped countries like Bangladesh and few south Asian and south American continents. According to number of cases and rate of spread, all countries should earmark red zones, yellow zones and green zones inside the country and take necessary action like lockdown, implementation of several restrictions, arrangements and improvements of treatment facilities for particular zone[15].

Basic personal hygiene including cough etiquette, the use of disposable tissues and hand hygiene to limit virus spread, with full personal protective equipment necessary (where available) for healthcare staff. Masks are effective but problematic if they are not used correctly even, they may become reservoirs of infection. Health regulations for public places like proper using of Masks, maintaining personal hygiene and social distancing should be circulated thoroughly and supervising authority should be there to look after the implementation by the populations and a reward/punishment system must be ensured to raise the awareness among the population[16].

People of all ages are being infected and death is also evident in all ages but the elderly and those with existing co-morbidities are more susceptible. The aged people are usually developing critical symptoms and are being placed on ventilators and among these patients' chances of recovery are less. Disposal of dead body should be done as per national guideline.

According to the forecast of researchers, the virus may continue to thrive in countries' having colder seasons or what the impact on countries' health systems might be. This pandemic is evolving daily and people should check their own country's public health forecasts and search in reputable sources for health related advices[17].

Now a day's many people as well as groups are coming out with different fake and unapproved treatment protocols and spreading them in different social medias without considering the after effects and complications a patient may go through as a consequence. We the doctors and other health care professionals are the front-line fighters and should play the pivotal role in this critical situation. All the government authorities should act responsibly under the guidance from a single umbrella commanded by a National Committee and of course supervised by a group of Health Care Experts. All the health care facilities should be included to fight against COVID-19 patients at this moment. Not only in this situation like COVID Pandemic, but the Health Care System should be given top most priority always until a standard can be achieved to face this type or even worst situation in future.

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