

Novel Corona Virus (COVID-19) - Overview of the Outbreak

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ABSTRACT

Novel strain of coronavirus has evolved at the end of 2019 and was labelled as Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2), causing severe acute respiratory syndrome expanded globally from Wuhan, China. By the end of March 2020, the World Health Organization declared the COVID-19 virus a global pandemic. A brief review describing the existing literature available regarding Corona Virus epidemiology, clinical manifestations, management and future preparedness required is dealt in this article. Though only when the pandemic ends it will be possible to assess the full health, social and economic impact of this global disaster.

Key Words - COVID-19, SARS-CoV-2 infection, Corona virus.

INTRODUCTION

Corona Virus disease 2019 is most commonly called COVID-19, a word coined for it by the WHO. It is a recently diagnosed as infectious disease rapidly spread worldwide, which is linked to the same family of viruses as Severe acute respiratory syndrome (SARS) and some types of common cold.¹ Like all Corona viruses, SARS-CoV-2 also has the same host receptor; Human Angiotensin -Converting Enzyme 2 (ACE2).

EPIDEMIOLOGY:

SARS-CoV was diagnosed in Wuhan, China 2019, spread globally, resulted as 2020 pandemic. On 30th January, 2020, the World health Organization declared this infectious disease a Public Health Emergency of

International Concern (PHEIC). It got spread rapidly across the world from Asia and WHO named it as pandemic caused by a corona virus. Containment measures in China and South Korea in treatment of COVID -19 as an intervention has drastically reduced new cases in these countries. On the other hand, Italy became one of the first countries in Europe where the SarS-Cov2 cases grew at unanticipated numbers and over time reported the highest number of infected patients. Italian Government and European Union in its member countries promoted limitation of people intermingling outside their homes, wearing of face mask and social distancing to flatten the growing curve of infection in their population of the COVID-19 resulting in reduction of deaths.² On 11th March 2020 COVID -19 was declared as Pandemic.³ The limitation of people intermingling outside their home, social distancing, the cessation of almost all work activities and the request to the population to use protective masks to minimize the chances of infection transmission from the infected person to other people.⁴

Healthcare professionals have been immediately involved in the national emergency in order to restrain the pandemic. A number of treatment measures in many Healthcare Facilities globally attempted a multi-drug combination such as zinc, hydroxychloroquine, azithromycin, lopinavir-ritonavir and Favipiravir in order to cure the patients affected with novel corona virus, none of them till date proved to be precisely working on the target. As

huge numbers of healthcare professional were involved who were working hard day and night, unfortunately small number of them were infected and some tragically died. Dentists as they work in close contact with patients New York Times published an article on March 15, 2020 “The workers who face the greatest Corona Virus risk ” which described the dentists are the most exposed to the risk affected by COVID-19 more than nurses and general physicians.⁵ Wuhan University School and Hospital of Stomatology has published several recommendations to dentists and dental students to manage COVID -19 patients.⁶ Dental health care personnel (DHCP) are placed in a very high exposure risk category as dentists work in close proximity to patient’s oral cavity as per Occupational Safety and Health Administration(OSHA).⁷

A fundamental concept is that transmission of this virus is mainly through inhalation / ingestion / direct mucous contact with saliva droplets, the virus can survive on hands, objects or surfaces that were exposed to infected saliva.^{6,8} Rinsing with antiseptic mouth washes can reduce the infectious amount of viral load in the saliva and will not eliminate the virus in the saliva.^{6,8} SARS-CoV-2 is the seventh member of the family of corona viruses that infect humans and differ from SARS-CoV and MERS-CoV. This belongs to subgenus Sarbecovirus, Orthocorona-virinae subfamily, with Chinese horse shoe bats (*Rhinolophus sinicus*) being the most probable origin.⁹ It is enveloped positive -stranded RNA virus with a diameter of 60-140 nm, spherical or elliptical in shape and pleomorphic that shows a crown – like appearance under an electron microscope (*Coronam* is the Latin term for crown).^{10,11}

CLINICAL MANIFESTATIONS AND MANAGEMENT:

Common symptoms in clinical manifestations at the onset of illness may include fever, non-productive cough, myalgia or fatigue, in few sputum

production, headache, hemoptysis and diarrhea.¹² Another common symptom is pneumonia which can be seen on chest x-ray or chest CT as multiple small patchy shadows and interstitial changes, remarkable in lung periphery. Organ dysfunctions such as Acute Respiratory Distress Syndrome (ARDS), Acute Cardiac Injury (shock and arrhythmia), Acute Kidney Injury and death can occur in severe cases.^{12,13}

Regarding measures needed to be adopted in healthcare facilities for personal prevention both for health personnel and patients must be associated with the prevention of the spread of the virus through environmental remediation and frequent alcohol based disinfection of the surfaces must be considered.^{6,8} The WHO recommends the use of a particulate respirator at least as protective as a US National Institute for Occupational Safety and Health (NIOSH)-certified N95, European Union (EU) standard FFP2, or equivalent, when performing aerosol-generating procedures such as tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, and bronchoscopy.¹⁴ Although vaccines for Covid-19 such as Novavax vaccine, Inovio vaccine, Pfizer and BioNtech vaccine, Sinovac vaccine and RNA based vaccines are at the edge of breakthrough but still are under experimenting stages, it may still take time in release of a potent vaccine against the virus.¹⁵

CONCLUSION

Pandemic COVID-19 is a challenge to the mankind in all possible aspects. Many Nations, Economy and industries are brought stand still, even if for a while. Many nations are facing a concept of lockdown and cessation of international travel. The impact is going to last for some time. Medical tourism industry will face definite lag due to the impact of pandemic; it is quintessential for all the hospital and health

care services to plan and act towards minimum damage and maximum recovery.

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