Unexpected High Mortality in COVID-19 among Doctors

LETTER TO EDITOR

In this contemporary world, doctors have become the soft targets in every aspect of Modern science and technology. In current scenario, there is high mortality rate in COVID-19 among doctors. There are numerous factors that contribute to the unexpected high mortality in COVID-19 among doctors.

Firstly, Doctors are facing health problems owing to repeated exposure of COVID-19 viral infection resulting in high viral load. Secondly, owing to work load they are over burdened with heavy duty hours of duties in essential health care. Thirdly, Stress is an important factor attributing to the poor quality of life. In addition to this, Stress may precipitate the health issues like vascular occlusion events like atherosclerosis, deep vein thrombosis etc. Subsequently, they face mental health issues superimposed with inflammation. Inflammation is the root cause of mortality and comorbidities among all. Inflammation play a key role in pathogenesis of many diseases including COVID-19. During the process of pathogenesis of COVID-19, a large number of inflammatory mediators like interleukins, are released, which can be an indicator of the disease burden. It results in an event known as Interleukin Storm which has fatal outcomes. Corona virus is rapidly undergoing mutation resulting in formation of multiple strains which are a threat to our body’s defensive mechanisms or immunity. Till date, no vaccine is available for COVID-19, which is a major concern worldwide. Molecular mimicry is also responsible for weakened immunity against COVID-19.

Inadequate triaging for doctors, owing to the non–specific symptomatic or nearly asymptomatic COVID-19 infection may often lead to misdiagnosis of serious life threatening illness such as Pulmonary Embolism (PE). Lack of prompt evaluation of symptoms such as dyspnoea in clinically COVID-19 suspected doctors, may often lead to inappropriate treatment of COVID-19 infection. Lack of quality sleep may often leads to disturbances in circadian rhythm or biological clock, which have detrimental effects on body and mind of doctors in long term.

The CDC and WHO recommend wearing N95 masks during care of patients with highly transmissible diseases such as tuberculosis, SARS, and COVID-19. The N in N95 stands for NIOSH, the National Institute for Occupational Safety and Health of the United States and indicates filter efficiency of particles. Thus, an N95 mask is 95% effective at filtering airborne particles including very small ones. In comparison, while surgical masks provide a barrier against large respiratory particles, they are ineffective at providing protection from smaller particles. Surgical masks also do not prevent leakage around the mask when the user inhales. Therefore, surgical masks are ineffective and do not provide enough protection when performing direct care for patient with COVID-19 (Center for Disease Control and Prevention. (2020).

Wearing masks for a prolonged period of time causes a host of physiologic and psychologic burdens and can decrease work efficiency among doctors (Johnson, A.T. (2016). Prolonged use of N95 and surgical masks causes physical adverse effects such as headaches, difficulty breathing, acne, skin breakdown, rashes, and impaired cognition. It also interferes with vision, communication, and thermal equilibrium. Headaches related to prolonged mask use can be attributed to mechanical factors, hypercapnia, and hypoxemia which may sometimes be fatal. Tight
straps and pressure on superficial facial and cervical nerves are mechanical features causing headaches (Lim, E. C. H. et al., 2006). Cervical neck strain from donning PPE, sleep deprivation, irregular meal times, and emotional stress are other sources of headaches among doctors during prolonged mask use (Ong, J. J. et al., 2020). Tight fitting masks cause inadequate ventilation and increased levels of carbon dioxide (CO2) known as hypercapnia. As CO2 is a known respiratory stimulant, a buildup of exhaled CO2 between the mask and face will cause increased lung ventilation and respiratory activity. Symptoms of hypoxemia such as chest discomfort and tachypnea are also noted in doctors with prolonged mask use. Exhaled CO2 builds up between the mask and face, and increased levels of CO2 cause confusion, impaired cognition, and disorientation. A hot and humid environment found in the facial region covered by masks, causes discomfort and hyperthermia. This may create a situation where the doctor is unable to recognize dangers and perform manual tasks, and it also significantly affects motor skills (Johnson, A.T. 2016). The moist environment and pressure from tight fitting masks also block facial ducts. This can explain the increase of acne with prolonged mask use (Foo, C. C. I. et al., 2006). Frequent PPE and mask changes may cause shearing and breakdown of the skin, and breakdown on the bridge of the nose and cheek bones can be attributed to tight fitting masks and goggles that put pressure on these specific areas (Lan, J. et al., 2020). Urticaria and contact dermatitis can occur from sensitivity to components of masks and PPE. Formaldehyde is a chemical used in PPE that some are sensitive and/or allergic to. Others may react to thiuram which is found in the ear loops of surgical masks (Al Badri, F. M. 2017).

All in all, I would like to conclude that Doctors are corona warriors with weak weapons and less immunity.

REFERENCES