DOI: https://doi.org/10.53350/pjmhs21155891

EDITORIAL

Post-Acute Covid-19 Syndrome

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The coronaviruses (CoVs) belongs to the subgroup Orthocoronavirinae in the family Coronaviridae, Order Nidovirales.[1] During 2002, the China reports first outbreak of SARS quickly spread worldwide, leads to approximately 11% fatality rate while during 2012;[2] Middle East Respiratory Syndrome (MERS) originates in Saudi Arabia followed by its spread worldwide with 37% mortality.[3] During December 2019, an pneumonia of unknown etiology has been detected in vast majority of patients resides in Wuhan City, Central China and Hubei Province.[4] The Genomic research has been identified that this pneumonia considered as coronavirus disease 2019 caused by novel corona virus (CoV) labeled as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), formerly called as 2019-novel coronavirus (2019-nCoV).[5] The screening and management strategies are not sufficient to end the battled against COVID-19.[6] The survivors face various long terms symptoms produced by COVID-19 which are still the matter of debate.[7] The literature reported 50-90% individuals have persistent symptoms and considered as long-haulers but due to confounders as gender, age, race, duration and severity of infection, short term study period and follow ups the results are hampered and limited.[8]

The term “post-acute COVID syndrome / long COVID” defined as persistent symptoms of residual inflammation (recovery phase), organ system disturbance, hospitalization effects or long ventilation (post-intensive care syndrome), co-morbidities, social isolation, stress and anxiety.[9] The fever, cough, sore throat, shortness of breath, chest pain and flu are common presenting symptoms in COVID-19 patients although literature also reports the multi system involvements and acute illness usually mild with 20% rate of hospitalization while 5% requires intensive or high dependency unit care.[10, 11]The COVID-19 patients not always recovered within two weeks and its long term consequences are still not fully understood. Even the patients with mild symptoms has been seen as prolonged recovery without any hospitalization and labeled as post-acute COVID-19 or long COVID syndrome and has been observed to be common in female population.[12] The exact definition of post-acute COVID-19 syndrome is still not clear but can be considered as illness which has persistent among COVID-19 recovered patients or longer existence of symptoms than expected. The researchers define the duration of symptoms more than 12 weeks since the onset of illness. Former studies categorized the post COVID-19 illness in three components (I) those having severe illness and requires ICU care due to ARDS, (II) those who during acute illness not hospitalized but later present with systemic symptoms as respiratory or cardiac failure and (III) those who neither hospitalized nor systemic symptoms of end organ damage but have persistent symptoms. [13]The exact mechanism of post-COVID-19 syndrome is not well understood, although former literature suggests prolong inflammation and its response to virus, low and slower antibody response to virus, re-infection or reactivation of the virus and presence of co-morbid are possible mechanisms responsible for post-acute COVID-19 / long COVID-19 syndrome.[14] The muscle pain, tiredness, fatigue, cough, insomnia, muscle pain, shortness of breath and palpitation are common non specific symptoms related to post-acute COVID-19 syndrome. The cardiac specific symptoms includes leg swelling, chest pain and orthopnea are due to COVID-19 induced heart injury while chest pain and shortness of breath could be possibility of pulmonary embolism whereas palpitation, sweating, shortness of breath and disturbance in temperature control could be due to COVID-19 induced autonomic dysfunction.[15]

In our experience, the fatigue / tiredness is predominant symptom observed in COVID-19 patients discharged from hospital and had follow up visits for approximately 12 weeks time period. The subjects revealed impairment in their formal daily activity and feel fatigue throughout the day and same also reported by former studies. The second most common symptoms observed among long COVID-19 patients is breathlessness / shortness of breath seen in patient with severe COVID-19 admitted in ICU regardless of mechanical ventilation. Other symptoms observed in long COVID-19 includes palpitation, excessive sweating while the evidence of pulmonary fibrosis on CT scan chest and heart failure on echocardiography has been also observed. Our former published study reported the data about asymptomatic and mild symptomatic Tablighi Jamaat and Zaireen place in isolation centers during the start of COVID-19 pandemic.[16] The subject were follow up randomly and inquired about any residual symptom and surprisingly come to know that fatigue / tiredness, shortness of breath, insomnia and palpitation still exists in some individuals, although long term follow up needed to justify the observation.

The management of post-acute COVID-19 syndrome is still challenging due to unavailability of specific guidelines during this time but following already published guidelines like pulmonary embolism is treated as usual way by anticoagulation for at least 3 months.[17] The management of post-COVID-19 pulmonary fibrosis remains the matter of dispute. The physician takes the support from clinical and radiological findings along with biochemical markers to enlist the subjects susceptible to pulmonary fibrosis following COVID-19 resolution and preferred corticosteroid therapy in such cases with good response. [18-20] Moreover, future research is required to determine the risk factors and pathogenesis responsible for long COVID syndrome and

further research will also enhance the knowledge aimed to prevent the complications.

In the end, addressing that huge number of individuals has been contracted by COVID-19, and being physicians, we are facing COVID-19 patients having symptoms of long COVID routinely visiting at hospitals and clinics. These discoveries support the requirement for a multidisciplinary way to deal with the consideration of vulnerable population, to help better characterize this new "post-COVID condition" and lay the preparation to proficiently directing therapeutic studies and plans for proper follow-up. Longer longitudinal observational studies will be basic to clarify the health outcome results inferable from COVID-19.

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