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EC PULMONOLOGY AND RESPIRATORY MEDICINE

Editorial

Expanding the Number of Useful Markers in Classifying Cases of Long COVID

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Received: January 12, 2023; **Published:** January 16, 2023

Quotation: "The categorization of Long COVID based upon clinical manifestation subphenotypes, and the development of testing schedules to identify the presence a causative factor or factors responsible for Long Hauler scenarios".

The US CDC and the British National Health authorities have reviewed cases of COVID in which patients had had symptoms that had persisted some four or more weeks after the initial acute infection had passed [1,2]. Both US and British Authorities placed these patients under the heading of Long COVID [3].

These Long COVID or Long Hauler COVID patients manifested such symptoms as: a) fatigue, shortness of breath, brain fog, sleep disorders, intermittent fevers, gastrointestinal problems, anxiety, and depression [3].

The need to categorize long COVID patients is essential in order to better understand the post acute manifestations associated with COVID Infections [3].

The investigations of Zhang., *et al*. investigated patient populations of 20,881 and 13,724 patients 30 - 180 days after these individuals had passed acute COVID infection [4]. They then had found that their patient populations could be grouped into four subphenotype groups based upon specific clinical symptoms.

Their first subphenotype involved those patients with cardiac and renal manifestations (33.75% and 25.4% of patients in sample populations). The second subphenotype involved patients with respiratory, sleep, and anxiety manifestations (32.75% and 38.48% of their patients in sample populations). The third subphenotype involved musculoskeletal and nervous system manifestations (23.37% and 23.35% of patients in sample populations). The fourth subphenotype involved digestive and respiratory system manifestations (10.14% and 12.74% of patients in their sample populations). The subphenotype groupings created by Zhang., *et al*. were based upon patient demographics, as well as, patient pre-existing conditions which had existed prior to the patient having been infected with COVID [4].

The pioneering investigations of Zhang., *et al*. have provided an excellent categorization of Long COVID based upon clinical manifestations. It is now necessary to investigate the presence of different manifestations of long COVID based upon causative a factor or factors [3].

There are several theories that have been put forth in order to explain the raison d'etre for the causative factor or factors for the occurrence of Long COVID (3). The current theories put forth for the existence of Long COVID are: a) Dormant viruses, b) Persistent inflammation, c) Autoimmunity and d) Persistent viral infection [3].

In order to investigate the causative factor or factors for the development of a Long COVID scenario, it will be necessary to also perform testing schedules to investigate: a) the presence of dormant viruses, b) the presence of persistent inflammation, c) the presence of autoimmune factors, and d) presence of persistent viral infection.

The categorization of Long COVID based upon clinical manifestation subphenotypes and the development of testing schedules to identify the presence of a causative factor or factors responsible for Long Hauler scenarios, will enable the successful treatment of those patients with post acute phase COVID.

Bibliography

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Volume 12 Issue 2 February 2023