Perspective/Opinion

Post-Acute Sequelae of Covid-19 (PASC): The Latest Permutation of Covid-19 Disease

By Julie A. Biller, MD

Recognizing the many faces of Covid-19 infection

In late 2019, when the world was notified of a novel coronavirus now named SARS-CoV-2, it was thought it caused acute infection only. The range of illness varied from flu-like symptoms to severe respiratory distress requiring high level critical care services. With the introduction of improved testing capability, it was understood people could have asymptomatic disease. Over time – really a very short period of time – we have recognized many faces of Covid-19, the disease syndromes caused by the SARS-CoV-2 virus. These include:

1. Asymptomatic infection
2. Acute symptomatic infection which ranges from mild symptoms to respiratory failure requiring mechanical ventilation and extracorporeal membrane oxygenation
3. MIS-C and MIS-A, Multisystem Inflammatory Syndrome, first noted in children, now thought to affect adults. This poorly understood manifestation of Covid-19 occurs weeks after acute infection and results in multiple organ dysfunction, similar in some ways to Kawasaki's Disease. Currently it is treated with steroids and intravenous infusion of gamma globulin.

The newest form of Covid-19 has been described in the months following the surges in countries across the globe. It has had numerous names, post covid syndrome, long covid, with those affected self-named as long haulers, but now formally named in the scientific community as Post Acute Sequelae of Covid-19 or PASC. The definition is also in flux with most defining it as continued symptoms after acute Covid-19 lasting longer than 4 to 8 weeks. The guesstimate, since we do not really know the how many people are affected, is that between 10 to 30% of people who have had Covid-19 may not resolve symptoms in the usual time period that one expects from a viral infection. Data from China presents a higher number of almost 75% of previously hospitalized people noting fatigue, anxiety, depression and reduced diffusing capacity on pulmonary function tests.

We opened a multidisciplinary clinic to better understand, and serve, patients affected by Long Haul Covid infection

Many medical centers have developed “Post Covid” or “Long Covid” clinics. I was asked to help develop a multidisciplinary clinic for the Froedtert and the Medical College of Wisconsin healthcare system. This clinic opened to serve those affected with non-resolving symptoms at the end of January 2021. Since its inception we have received almost 550 referrals from patients who have a primary care provider in our healthcare system. The overwhelming majority of patients have not been admitted to the hospital and did not receive any Covid-19 specific treatments since they had mild disease. 75% are women, 80% white, and the majority are under the age of 65 years. The literature has not yet brought clarity to any correlations of who is most at risk of these non-resolving and often debilitating symptoms. This is, in part, due to the populations surveyed; some follow only hospitalized patients with very few evaluating non-hospitalized individuals. Most of the patients referred to our program see at least two specialists. The top three are pulmonary, cardiology, and neurosciences for neurocognitive testing.

What do we know about the pathophysiology of PASC? Not as much as we need is the current answer. Patients present with shortness of breath and chest discomfort but usually have normal or near normal pulmonary function tests. They have “brain fog,” fatigue, dizziness, anxiety, and poor concentration and sleep patterns. Some have symptoms suggesting low level pericarditis. There may be an overlap with myalgic encephalomyelitis or chronic fatigue syndrome. We try to treat symptoms as best as we can, provide emotional support, communicate with employers, and enroll patients in rehabilitative services. The NIH wants to help fill the knowledge gap with $1.5 Billion allotted to study PASC.

Patients face many challenges from a disease that is not yet completely understood

The physical toll is steep for affected individuals and so is the emotional toll. There is a huge knowledge deficit about persistent, life altering symptoms so many people have problems with employers, friends, and family understanding their situation. We try to address these issues through our clinic.

I would like to thank the many people who have been involved in the development and implementation of this clinic. From the responses to our first emails in September 2020, our many, many planning meetings, the group who nominated themselves to participate has been very engaged and dedicated to help our pandemic efforts, this time in the out-patient clinics. The stories you hear when evaluating those referred to us can be heartbreaking, but also filled with professional fulfillment with the gratitude from people thanking us in our efforts to improve their health.

One of my colleagues, an infectious disease specialist, spoke of our health care teams as the people who ran into the fire when others were running away. I am so proud of how healthcare

professionals ran as quickly as they could to the Covid-19 fire. I am also grateful I could be part of the response to the pandemic. Those of us who have lived, practiced, or trained through this will never forget their role in the pandemic response.

Julie Biller, MD, is a Professor in the Department of Medicine (Pulmonary, Critical Care, and Sleep Medicine) at MCW. She directs the Post Covid-19 Care Program for Froedtert & MCW.