

Into the looking glass: Post-viral syndrome post COVID-19

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Abstract

We are writing to highlight the potential for a post-viral syndrome to manifest following COVID-19 infection as previously reported following Severe Acute Respiratory Syndrome (SARS) infection, also a coronavirus. After the acute SARS episode some patients, many of whom were healthcare workers went on to develop a Chronic Fatigue Syndrome / Myalgic Encephalomyelitis (CFS/ME) - like illness which nearly 20 months on prevented them returning to work. We propose that once an acute COVID-19 infection has been overcome, a subgroup of remitted patients are likely to experience long-term adverse effects resembling CFS/ME symptomatology such as persistent fatigue, diffuse myalgia, depressive symptoms, and non-restorative sleep. In a contracted future economy, managing likely Post COVID-19 syndrome cases, in addition to existing CFS/ME cases will put additional burden on our already hard pressed healthcare system. We suggest that priority is given to exploration of pragmatic relatively low cost techniques to treat post-viral fatigue, to alleviate symptoms and improve quality of life for those affected by the longer term sequelae of COVID-19.

Into the looking glass:

Post-viral syndrome post COVID-19

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Letter to the Editor

We are writing to highlight the potential for a post-viral syndrome to manifest following COVID-19 infection as previously reported following Severe Acute Respiratory Syndrome (SARS) infection, also a coronavirus.¹ After the acute SARS episode some patients, many of whom were healthcare workers went on to develop a Chronic Fatigue Syndrome / Myalgic Encephalomyelitis (CFS/ME) - like illness which nearly 20 months

on prevented them returning to work.² We propose that once an acute COVID-19 infection has been overcome, a subgroup of remitted patients are likely to experience long-term adverse effects resembling CFS/ME symptomatology such as persistent fatigue, diffuse myalgia, depressive symptoms, and non-restorative sleep.

Post-mortem SARS research indicated the virus had crossed the blood brain barrier into the hypothalamus via the olfactory pathway.² The pathway of the virus seemed to follow that previously suggested in CFS/ME patients, involving disturbance of lymphatic drainage from the microglia in the brain.³ One of the main pathways of the lymphatic drainage of the brain is via the perivascular spaces along the olfactory nerves through the cribriform plate into the nasal mucosa.⁴ If the pathogenesis of coronavirus affects a similar pathway, it could explain the anosmia observed in a proportion of COVID-19 patients.

This disturbance leads to a build-up of pro-inflammatory agents, especially post-infectious cytokines such as interferon gamma, and interleukin 7,⁵ which may affect the neurological control of the ‘Glymphatic System’ as observed in CFS/ME.³ The build up of cytokines in the Central Nervous System (CNS) may lead to post viral symptoms due to pro-inflammatory cytokines passing through the blood brain barrier in circumventricular organs such as the hypothalamus, leading to autonomic dysfunction manifesting acutely as a high fever and in the longer term to dysregulation of the sleep/wake cycle, cognitive dysfunction and profound unremitting anergia, all characteristic of CFS/ME. As happened after the SARS outbreak, a proportion of COVID-19 affected patients may develop a severe post viral syndrome we term ‘Post COVID-19 Syndrome’ - a long term state of chronic fatigue characterised by post-exertional neuroimmune exhaustion.⁶

In a contracted future economy, managing these likely Post COVID-19 syndrome cases, in addition to existing CFS/ME cases will put additional burden on our already hard pressed healthcare system. We suggest that priority is given to exploration of pragmatic relatively low cost techniques to treat post-viral fatigue, to alleviate symptoms and improve quality of life for those affected by the longer term sequelae of COVID-19.

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