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<http://doi.org/10.5281/zenodo.4091114>Available online at: <http://www.iajps.com>*Review Article***FIRST CONFIRMED CASE OF COVID-19 RE-INFECTION;  
TAKE-HOME MESSAGE****Hamad Ahmad<sup>1</sup>, FNU Neelma<sup>2</sup>, Salman Haider<sup>3</sup>**Hayatabad Medical Complex, Peshawar, Pakistan <sup>1-3</sup>

Email Address: hamad.ahd691@gmail.com

**BACKGROUND:**

We are all familiar with this novel coronavirus responsible for the deadly pandemic, which has cost us over 1.07 million lives till this date[1]. Besides the death toll, this pandemic has resulted in widespread implications on our lives from unemployment to the worst economic standstill, social isolation to schools and universities shut down, and disruption of healthcare delivery to deterioration of chronic medical conditions, mental health, and wellbeing. In many regions across the world, the infection rate has plateaued or shown a downtrend. Weekly hospitalization rates and mortality attributed to COVID-19 are declining but the mortality is still above the epidemic threshold in many regions[2].

There is a valid concern that those patients who recovered from COVID-19, are at risk of re-infection? No one knows that for sure, though some studies in animals show that subsequent exposure to the virus following recovery from primary infection may not result in re-infection due to acquired immunity [3]. In contrast to that, researchers in Hong Kong on August 24, 2020, reported the first confirmed case of COVID-19 re-infection in a 33-year-old man who was first infected by SARS-Cov-2 in late March[4]. He manifested symptoms the first time around, but there were no obvious symptoms the second time. Re-infection occurred after 142 days of the primary event. Genetic analysis demonstrated that the coronavirus strain of the first infection was closely related to strains from the US or UK, and the second infection strain was closely related to those from Switzerland and UK, indicating the second infection was not tied to the first[5]. The case raises questions about the durability of immune protection from the coronavirus.

This case implies a few important points which I want to highlight. First, immunity acquired through primary infection is not long-lasting and you may get infected again down the road at some point. Second, as the second case was milder than the first in this particular patient, it indicates that the immune system provides some level of protection, even if it can not prevent the infection entirely. Third, people who have recovered from Covid-19 should also be vaccinated considering the possibility of re-infection by a different strain. Fourth, people who have recovered from a primary infection should continue following precautions like wearing a mask and physical distancing.

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None

Conflict of Interest:

The authors have no conflict of interest to declare.

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