

Can SARs-CoV-2 Infect Nasal Epithelium and Cause Parkinson's Disease?

Mohsen Rafie^{1*}, Farhad Azadmehr², Mostafa Taheri³, Aylar Mansouri⁴ and Valentyna Mahdi Naeim⁵

¹Department of Clinical Psychology, University of Semnan, Semnan, Iran

²Department of Medical-Surgical Nursing, Urmia University of Medical Sciences, Urmia, Iran

³Department of Critical Care Nursing, Tehran University of Medical Sciences, Tehran, Iran

⁴Department of Psychology, Johannes Kepler University Linz, Linz, Austria

⁵Department of Critical Care Nursing, Islamic Azad University, Ardabil, Iran

*Corresponding author: Mr. Mohsen Rafie, Department of Clinical Psychology, University of Semnan, Semnan, Iran, E-mail: rafiemohsen05@gmail.com

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Abstract

Background: The main trigger for Parkinson's disease is a mutated version of a protein called alpha-synuclein. This protein accumulates in dopamine-producing neurons. COVID-19 can increase the risk of Parkinson's and other neurological diseases.

Materials and methods: This research study was conducted by the library method.

Results: The results showed that the virus can cause neuroinflammation, which, as a predisposing event, predisposes the brain to overreaction to subsequent neurological events. This secondary neurological event can be anything from another viral infection to poisoning and even aging. A secondary neurological event triggers an abnormal brain response that leads to nerve degeneration and eventually Parkinson's disease. The results show that the SARS-CoV-2 virus as a neurotropic virus can enter brain tissue.

Conclusion: Therefore, the virus certainly has the potential to act as a predisposing event in increasing the risk of Parkinson's disease.

Keywords: Parkinson; COVID-19; Neuritis; Brain tissue

Introduction

COVID-19 is associated with other clinical signs and symptoms due to its spread to many other organs and systems. Most infected people have mild to moderate symptoms and do not need to be hospitalized; more severe patients require hospitalization and sometimes intubation due to severe respiratory distress [1,2]. Earlier, scientists said that the coronavirus could directly affect various organs in the body, including the lungs, kidneys, brain, and gastrointestinal tract. However, scientists have recently come across the strangest thing in this field. Accordingly, scientific evidence shows that a 45-year-old man developed Parkinson's disease after recovering from the Coronavirus. Parkinson's disease has previously been linked to viral diseases such as the flu, hepatitis C, Japanese encephalitis, or West Nile virus. However, this is the first time that scientists have seen a link between COVID-19 and Parkinson's [3-5].

Materials and Methods

What is Parkinson's disease?

This disease is the most common nerve damage after Alzheimer's.

In short, Parkinson's disease is one of the types of neurological diseases in which a person gradually loses his physical and mental ability, and if the appropriate treatment is not chosen, the severity of its symptoms increases more rapidly [6].

Association between Parkinson's disease and coronavirus

It is noteworthy that there is a link between the presence of antibodies against coronaviruses that cause colds, coronavirus OC43 and 229E in Cerebro Spinal Fluid (CSF), and Parkinson's disease. Medical history provides observations that support the association between viral infections and Parkinson's. The most well-known example is post-encephalitis Parkinsonism, which was observed during the outbreak of lethargy and overlapped with Spanish influenza (H1N1 influenza virus). In general, viral infections play an important role in the early stages of Parkinson's disease, as these viruses cause the death of dopamine-producing brain cells. Dopamine is an essential chemical, the lack of which causes movement problems such as tremors and tremors. The authors also say that the number of patients who developed Parkinson's disease and later died from the Coronavirus is increasing [7-9]. Since the start of the corona vaccination, patients with Parkinson's disease, their families, and

caregivers have been concerned about the side effects of these vaccines and have raised several questions that we will try to answer briefly here [10]. Are there any studies on the long-term effects of coronavirus in people with Parkinson's? A recent study looked at the symptoms of COVID-19 in a small number of Parkinson's patients.

Symptoms that remained after coronary infection included impaired motor function, increased daily dose of levodopa, fatigue, cognitive impairment, and sleep disturbances. However, more research is needed to confirm and generalize these findings [11]. Are there any studies on the effects of corona vaccines on people with Parkinson's? At present, there is no evidence that corona vaccines have long-term adverse effects on individuals, including those with Parkinson's. Some people with Parkinson's have reported worsening the symptoms shortly after vaccination, which resolves after a few days. Therefore, in general, approved vaccines are safe and uncomplicated in Parkinson's patients [12]. Is the Corona vaccine required for Parkinson's patients? In general, old age alone increases the risk of complications from COVID-19 infection. Depending on the severity of Parkinson's symptoms, the disease itself can increase the risk of complications from the virus. For these reasons, it makes sense to protect yourself as much as possible against the coronavirus, which includes vaccinations. Be sure to consult your doctor if you have any specific concerns or questions [13].

How many times are corona vaccines given?

Most available vaccines (except the Johnson vaccine, which is a single dose) are given in two doses, a few weeks apart. The injection of the first dose is not enough to create safety and the second dose is necessary to achieve effective safety [14].

How long does it take for the corona vaccine to work?

It usually takes two weeks after you receive the full vaccine (one or two injections, depending on the vaccine you receive) for your body to develop maximum immunity against the coronavirus. Even after this time, you should follow the hygienic instructions: you should use a mask, observe social distance and wash your hands frequently.

Does the Corona vaccine completely prevent infection?

No, the most effective vaccines available provide a little over 90% protection, and therefore, a percentage of people get the disease despite being fully vaccinated. New strains of the virus may also be relatively resistant to some vaccines. In addition, vaccinated people can spread the virus to others [7].

Results

What are the possible side effects of the corona vaccine?

In clinical trials, the reported side effects of vaccines have been mild and temporary, the most common of which include swelling, redness or pain at the injection site, fever, fatigue, and muscle aches. You should contact your doctor if the redness and swelling at the injection site worsen after 24 hours, if you are concerned about certain side effects, or do not improve after a few days (Figure 1) [15].

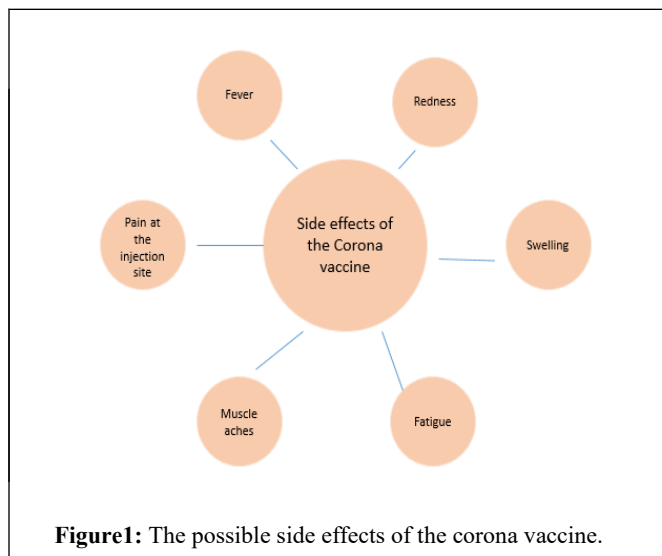


Figure1: The possible side effects of the corona vaccine.

Which of the available Crohn's vaccines is more suitable for Parkinson's patients?

To date, all approved vaccines are safe for patients with Parkinson's and none are preferred. Due to the need for vaccination as soon as possible, any available vaccine should be used [3].

How does the type of corona delta affect a person with Parkinson's?

We do not yet have any specific information on how delta affects people with Parkinson's. The coronavirus, like all viruses, is capable of mutating and creating different types. Different types of coronavirus have been identified worldwide. However, only a few of these species have been a concern for public health because they have a feature that makes the virus either easily transmitted or increases the risk of severe disease. The delta type has now caused a great deal of concern and is more easily transmitted from person to person than previous types [16].

Approved vaccines also protect the delta type, but not to the extent observed in early experiments. This means that fully vaccinated people are more likely to get the delta virus than other types. However, the main purpose of vaccines is to prevent severe illness, hospitalization, and death from Quid, and all approved vaccines are almost 90% effective in preventing these infectious consequences. Therefore, vaccination is still valuable [9].

Discussion

Do Parkinson's drugs, including amantadine, interact with corona vaccines?

No, there is no interference and there is no need to stop Parkinson's drugs, including amantadine, when the vaccine is given [17]. Do I have to follow a regular Parkinson's medication schedule on the day of vaccination? There is no reason to change Parkinson's medication on the day of vaccination [2].

Which arm should I inject, the hand that has no Parkinson's motor symptoms or the weaker hand?

Because you will likely have some pain in the vaccinated arm for 1 to 2 days, it makes sense to inject the vaccine into the weaker arm [18].

I received the Corona vaccine two days ago and my tremors have gotten worse. Is this related to the side effects of the vaccine?

The vaccine can certainly cause short-term side effects such as fatigue, pain, and even fever, but there is not yet much information about its effect on Parkinson's symptoms. However, in some people, Parkinson's symptoms get worse in the short term. This does not mean that your Parkinson's disease has progressed and that you are expected to return to normal in the next few days. Consult your neurologist if symptoms persist [19].

Can the stress of the corona pandemic worsen Parkinson's symptoms?

Stress can increase Parkinson's symptoms. The relationship between stress, anxiety, and Parkinson's has been talked about before, and the corona pandemic has certainly created a very stressful environment for everyone. Many people with Parkinson's experience anxiety as a non-motor feature of their disease, and many reports that anxiety has increased since the onset of the epidemic. To help reduce stress and normalize your current situation, be sure to follow your daily routine, continue exercising, and stay in touch (by protocols) or in person, with family and friends [20].

I am taking amantadine for Parkinson's. I know this medicine is also an anti-flu drug. Is it effective for corona as well?

There is no evidence that amantadine works against the coronavirus, so you should still consider that it is not effective against the virus [21].

Conclusion

Increased stress, in turn, exacerbates impaired motor function in patients with Parkinson's disease and reduces the effectiveness of medications used to treat the disease. Exposure to stress can also trigger latent Parkinson's. Therefore, using individual management strategies to cope with stress and increase adaptability, as well as increasing the physical activity of patients with Parkinson's in this critical situation, plays an effective role in the treatment of these patients. Given that the coronary crisis is an external stressor that affects a large number of patients with Parkinson's disease, now is a good time to conduct research and scientific studies on Parkinson's disease and its impact on stressors, and research results Which are done during this period will be beneficial for all Parkinson's patients in the long run.

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