

## Covid-19 with neuropathic pain symptom: A case report

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**Cite this article:** Zouhri S. and El Baroudi M. Covid-19 with neuropathic pain symptom: A case report. Int J Epidemiol Health Sci 2021;2(6): e13. Doi:10.51757/IJEHS.2.6.2021.244138.

### Abstract

A woman in her sixties with a normal medical history was admitted to a general medical floor with Neuropathic pain symptoms such as a burning sensation throughout her body (head, back, spine, throat, and tongue with dry mouth, chest, abdomen, kidneys, thighs, toes), inability to eat, urinary incontinence, difficulty wearing clothing, and difficulty leaning on the back. There was a difficulty and delay in diagnosing the patient's condition, which was confirmed to have severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) with no respiratory symptoms. The patient's pain did not respond to the covid-19's first-line medications, but it did respond to neuropathic medication with Pregabalin and Alprazolam. Our study shows that Pregabalin could be helpful in relieving the patient's pain and very effective for treating neuropathic pain with a safe profile, unlike Alprazolam, which interferes with the same stages of sleep, which made her sleep condition worse.

**Keywords:** Alprazolam; covid-19; Neuropathic pain; Pregabalin; SARS-CoV-2, Morocco

### Introduction

The statistics on the coronavirus pandemic are still increasing in the world since the start of the disease (1). Parallel to that, scientific and medical professionals are still struggling to know how this virus behaves, what impact it has on our bodies, and how we can treat it when we catch it.

COVID-19 affects different people in different ways. Some people do not develop any symptoms, others show mild to serious ones (2). According to the world health organization, the coronavirus symptoms are divided into three categories: common, less common, and serious symptoms. Fever, dry cough, and tiredness are the most common symptoms (2). Aches and pains, sore throat, diarrhea, conjunctivitis, headache, loss of taste or smell, a rash on skin, or discoloration of fingers or toes are among the minor symptoms. The serious symptoms include difficulty breathing or

shortness of breath, chest pain or pressure, and loss of speech or movement.

The COVID-19 virus may also have neuroinvasive potential and cause neurological complications in patients who suffered from it (3). Headaches, anosmia, dizziness, encephalopathy, stroke (4, 5), and neuropathic pain, which is the rarest neurological association of COVID-19 and was found in only 2.3% ( $p = 0.07$ ) of hospitalized COVID-19 patients in one observational case study (3). Neuropathic pain is caused by a lesion or disease of the somatosensory system, including peripheral fibers and central neurons (6). Patients with neuropathic pain usually experience a distinct set of symptoms, such as shooting, burning, or stabbing pain. There have not been many reports regarding the symptoms of neuropathic pain among the COVID-19 patients, to our knowledge. For this reason, the present paper aimed to report in detail an individual case of a patient with neuropathic pain associated with the COVID-19 infection.

## Methods

To measure the patient's pain severity, we use the Numerical Rating Scale (NRS). The patient was asked to circle the number between 0 and 10, 0 and 20, or 0 and 100 that better describes her pain intensity (7, 8). The lower limit is normally associated with "no pain at all," while the higher limit is associated with "the worst pain ever." Data is collected on the patient's condition daily, and at the end of each week, we calculate the mean value of the symptoms.

## Case study

### Patient description

One week before getting tested positive for COVID-19, the patient was willing to do anything to reduce her constant pain. She experienced the following symptoms: a burning sensation throughout her body (head, back, spine, throat and tongue with dry mouth, chest, abdomen, kidneys, thighs, toes) that became more intense over time; cold-heat sensation in the legs; hot steam with a burning odor; inability to eat; urinary incontinence; difficulty wearing clothing; difficulty leaning on the back; difficulty putting feet on the ground; tinnitus; insomnia. All these symptoms are shown in figure 1 (week 0).

### Case history

The woman, in this case, was 62 years old with a normal medical history.

### Treatment plan

She went to a hospital after testing positive for COVID-19 and began her home treatment with hydroxychloroquine, azithromycine, Omeprazole, enoxaparin, and acetylsalicylic acid. We have tracked the patient's condition after taking medications for four weeks and we have collected the most important observations during each week.

#### Week 1

On the first day of drug administration, she developed chest pressure, while the burning sensation and the other symptoms were still present with no improvement, as it is mentioned in figure 1. There was no explanation for the patient's neuropathic pain because it was not among the common symptoms associated with the covid-19. For this reason, there

was a delay in the patient's diagnosis. The pain persists for five days later.

#### Week 2

Once diagnosed with neuropathic pain caused by covid19, she started treatment with Pregabalin and Alprazolam. Preclinical and clinical studies have confirmed that Pregabalin is a very effective agent for treating neuropathic pain with a very good safety profile (9). While Alprazolam belongs to a class of agents called benzodiazepines, which have an effect on the central nervous system (CNS) and produce a calming effect. Alprazolam is frequently used in the treatment of insomnia in patients with chronic pain who have difficulty sleeping (10). Alprazolam has been shown to be effective in the treatment of chronic pain (11).

On the first day of Pregabalin and Alprazolam admission, the pain was relieved and moved from a nerve burning sensation to a nerve flare-up sensation. The patient was able to sleep after a long period of insomnia.

During the days after, the flare-up sensation no longer includes the whole body at the same time, but rather includes separate parts, especially the kidneys and abdomen nerves, and becomes intermittently intense at night. Acute constipation occurs due to difficulty with bowel movement. The tinnitus caused pain and interfered with her sleep. The patient reported that she felt a slight improvement in her sleep quality as it continued to be interrupted at night.

The hot steam with the burning smell and urinary incontinence disappeared. She was able to wear clothing and to lean on her back without difficulty. This week's symptoms include changes in appetite, such as being a glutton and at times losing her appetite at others; a cold-heat sensation in the legs; a tingling sensation in a different area of the body; and a loss of taste and smell. All these symptoms are presented in figure 1.

#### Week 3

During this week, the patient's condition improved, and her flare-up sensation was reduced and became limited at night. As for her sleep, it remained interrupted and accompanied by tinnitus. The patient started to taste some foods and smell some smells. The feeling of tingling appears and disappears through the night. The patient's case during this week is presented in figure 1.

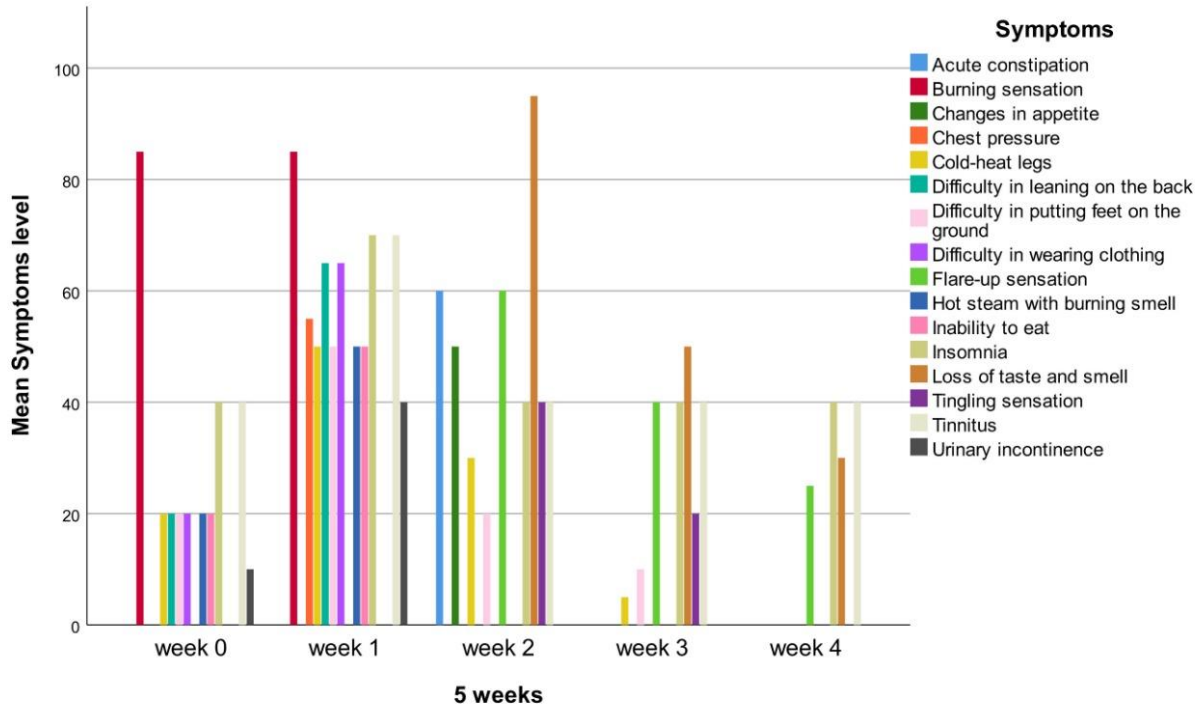


Figure 1. The symptoms of the case in 5 weeks

**Week 4**

This week the patient no longer feeling pain during the day. However, she suffered from an interrupted flare-up sensation in the abdominal area at night. Azithromycine was not effective either in reducing her sleep problems nor in calming her pain. The patient’s case during this week is presented in figure 1.

**Discussion**

Without any treatment intervention, the patient’s pain was terrible with sleepless nights, and exhaustion. Once she started Pregabalin and Alprazolam, her pain was relieved, and she started getting some sleep. Her intense nerve burning sensation morphed into a nerve flare-up sensation, which gradually faded. Even though her pain intensity decreased over time, her sleep quality remained poor. The patient’s only concern was getting a good night’s sleep. This shows that alprazolam provided little benefit to sleep without complete improvement, which is in coordination with a result in (10) where studies of patients with chronic pain and difficulty in sleeping confirm that benzodiazepines interfere with the same stages of sleep, which is likely to be a problem. Pregabalin was very effective in reducing the pain and limiting its area to the abdominal zone instead of all over the body. In this case, the patient’s pain did not

respond to the first-line treatments of covid-19 but did respond to neuropathic intervention via Pregabalin and Alprazolam.

**Conclusion**

COVID-19 can manifest neuropathic pain without any respiratory symptoms. For this reason, the process of identifying COVID-19 infection for the case presented in this paper was difficult and slow, which prolonged the duration of feeling pain. Our study illustrates that Pregabalin may be effective in relieving the patient’s pain, unlike Alprazolam, which made her sleep problems more complicated.

**Acknowledgments**

We acknowledge the cooperation of the patient.

**Financial Support**

No financial support or sponsorship was received for the publication of this article.

**Author contributions**

All authors contributed to the study conception and design. All authors read and approved the final manuscript.

### Disclosures

All authors declared that they have no conflict of interest.

### Compliance with ethics guidelines

This article is based on previously conducted studies and does not contain any studies with human participants or animals performed by any of the authors.

### Data availability

All data generated or analyzed during this study are included in this published article.

### References

1. World Health Organization. Available from: [worldhealthorg.shinyapps.io/covid/](http://worldhealthorg.shinyapps.io/covid/)
2. World Health Organization. Available from: [www.who.int/health-topics/coronavirus#tab=tab\\_3](http://www.who.int/health-topics/coronavirus#tab=tab_3)
3. Sepehrinezhad, A., Shahbazi, A., Sahab Negah, S., COVID-19 virus may have neuroinvasive potential and cause neurological complications: a perspective review, *J Neurovirol*, 2020, 26(3):324-329.
4. Mao, L., Jin, H., Wang, M., et al. Neurologic manifestations of hospitalized patients with coronavirus disease 2019 in Wuhan, China. *JAMA Neurol*. 2020, 77(6):683-690.
5. Helms, J., Kremer, S., Merdji, H., *et al.* Neurologic features in severe SARS-CoV-2 infection, *N Engl J Med*, 2020, 382, 2268-2270.
6. Colloca, L., Ludman, T., Bouhassira, D., et al, Neuropathic pain, *Nat Rev Dis Primers*, 2017, 16, 3:17002.
7. Haefeli, M. and Elfering, A. Pain assessment, 2006, 15(Suppl 1): S17–S24.
8. Glossary, *Spine*, 2000, 25:3200–3202.
9. Verma, V., Singh, N., and Singh Jaggi, A. Pregabalin in Neuropathic Pain: Evidences and Possible Mechanisms. *Curr Neuropharmacol*, 2014, 12(1): 44–56.
10. King, S.A. Benzodiazepines and Pain, *Psychiatric Times*, 2013, May 15, 30, Issue 5. Available from: <https://www.psychiatrictimes.com/view/benzodiazepines-and-pain>
11. Westbrook, L., Cicala, R.S., Wright, H. Effectiveness of alprazolam in the treatment of chronic pain: results of a preliminary study. *Clin J Pain*, 1990, 6(1):32-6.