Int. j. adv. multidisc. res. stud. 2026; 6(3):454-455

Received: 26-04-2026
Accepted: 06-05-2026

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Letter to the Editor

Diagnosing West-Nile Virus Encephalitis Requires the Detection of Neutralising Antibodies and a Positive PCR in the CSF

Josef Finsterer
Department of Neurology, Neurology & Neurophysiology Center, Vienna, Austria

Corresponding Author: **Josef Finsterer**

Letter to the Editor

We read with interest the article by Andrejkovits *et al*. about a 57-year-old female patient with meningoencephalitis and gastroenteritis attributed to West Nile virus (WNV) infection, hospital-acquired acute SARS-CoV-2 infection (SC2I), and a history of end-stage renal disease (ESRD), arterial hypertension, and cardiomyopathy [1]. The patient made a full recovery with treatment including corticosteroids, antibiotics, antifungals, anticoagulants, anti-inflammatory drugs, and remdesivir [1]. The study is promising, but some points should be discussed.

First, no contrast-enhanced cerebral imaging was performed [1]. In particular, cerebral magnetic resonance imaging (cMRI) with gadolinium and CE-FLAIR sequences was not performed. Since the patient suffered from meningoencephalitis, confirmation of the diagnosis by contrast enhancement in the brain or by meningeal contrast enhancement would have been essential [2]. Native cerebral computed tomography is generally not informative in encephalitis.

Second, it was not explained why the PCR test for SARS-CoV-2 was negative upon admission and only became positive on the eighth day of hospitalization [1]. Did the patient become infected during their hospital stay, or was the initial test a false negative? It is also conceivable that the infection was still in its incubation period upon admission [3].

Third, the diagnosis of WNV infection was based solely on the detection of IgG and IgM antibodies but was not confirmed by PCR. Antibodies against WNV can produce false positive results, particularly in cases of cross-reaction with other flaviviruses such as dengue, Zika, and St. Louis viruses, as well as in patients who have previously been infected with WNV. Therefore, it is recommended to confirm acute infection by detecting neutralizing antibodies or by PCR. It is also conceivable that the SC2I infection led to false positive results in the WNV antibody test [4]. In the case of a positive history of previous WNV infection, it is conceivable that the positive IgG and IgM findings represent remnants of a previous infection.

The fourth point concerns the examination of the cerebrospinal fluid (CSF) for fungi such as Candida, Cryptococcus, Blastomyces, Coccidioides, and Histoplasma. Since the patient had a Candida infection and was immunosuppressed due to SC2I, fungal encephalitis must be ruled out. It should also be determined whether the CSF culture was negative for bacteria other than Mycobacterium tuberculosis. The patient became afebrile under antibiotic therapy.

The fifth point concerns the unexplained cause of the gastrointestinal infection [1]. Was it due to a bacterial, viral, fungal, or protozoal infection? Were stool cultures and examinations for worm eggs unremarkable?

The sixth point concerns the lack of information regarding the subtype and cause of the cardiomyopathy [1]. Was it ischemic, hypertrophic, dilated, or restrictive cardiomyopathy, or simply concentric hypertrophy due to poorly controlled arterial hypertension? Was the 24-hour ambulatory blood pressure monitoring normal or pathological? Was myocarditis, which can complicate SC2I [5], completely ruled out?

Overall, the diagnosis of WNV-associated encephalitis should be confirmed by the detection of neutralizing antibodies or a positive PCR test for WNV to rule out the possibility that positive IgG and IgM antibodies against WNV represent a false positive result.

Declarations
Ethical Approval: Not applicable.

Consent to Participation: Not applicable.

Consent for Publication: Not applicable.

Funding: None received.

Availability of Data and Material: All data are available from the corresponding author.

Completing Interests: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contribution: xx was responsible for the design and conception, discussed available data with coauthors, wrote the first draft, and gave final approval. xx: contributed to literature search, discussion, correction, and final approval.

Acknowledgements: None.

Keywords: SARS-CoV-2 Infection, COVID-19, West Nile Virus, Encephalitis, Hemodialysis

References
1. Andrejkovits VA, Asztalos AI, Bodnar NI, Zaharia-Kezdi EI, Vasiesiu AM. Severe acute respiratory syndrome coronavirus 2 infection and West Nile encephalitis in a patient with chronic kidney disease. J Crit Care Med (Targu Mures), Oct 31, 2025; 11(4):429-434. Doi: 10.2478/jccm-2025-0040
2. Perillo T, Capasso R, Pinto A. Neuroimaging of the Most Common Meningitis and Encephalitis of Adults: A Narrative Review. Diagnostics (Basel), May 21, 2024; 14(11):1064. Doi: 10.3390/diagnostics14111064
3. Stites EC, Wilen CB. The Interpretation of SARS-CoV-2 Diagnostic Tests. Med, Dec 18, 2020; 1(1):78-89. Doi: 10.1016/j.medj.2020.08.001
4. Galipeau Y, Xavier A, Dyks A, Cooper C, Langlois MA. Continuous false positive results by SARS-CoV-2 rapid antigen testing: A case report. Front Public Health, Nov 3, 2023; 11:1240308. Doi: 10.3389/fpubh.2023.1240308
5. Holland DJ, Blazak PL, Martin J, Broom J, Poulter RS, Stanton T. Myocarditis and Cardiac Complications Associated with COVID-19 and mRNA Vaccination: A Pragmatic Narrative Review to Guide Clinical Practice. Heart Lung Circ, Jul 2022; 31(7):924-933. Doi: 10.1016/j.hlc.2022.03.003