

Received: January 25, 2021

Revision received: February 2, 2021

Accepted: February 3, 2021

www.jneurosciences.com

DOI: 10.33702/cncnr.2021.3.1.2

Case Study

Novel Corona Virus and Meningoencephalitis

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Citation: Nagina Agarwal (2021). Novel Corona Virus and Meningoencephalitis. Current Neuropsychiatry and Clinical Neuroscience Reports, 3(1) 26-27. <http://dx.doi.org/10.33702/cncnr.2021.3.1.2>

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INTRODUCTION

SARS Co V 2 is aptly called novel because uncertainties still cloud its manifestations and treatment, initially thought to be presenting with fever, dry cough, dyspnoea, later causing vomiting, diarrhoea, thrombotic episodes involving blood vessels of lower limbs, heart and brain and then neurological manifestations in form of stroke, GBS, seizures, encephalopathy. Here is presented case report of Covid associated meningoencephalitis in a diabetic female in tertiary care center in Delhi, India.

CASE REPORT

45 year old female was admitted with complaint of fever, vomiting, loose motions for 4 days and altered sensorium for 1 day. There was no history of contact with Covid patient. On examination, patient was drowsy, irritable, moving all four limbs febrile, pulse 108/minute, B.P. 80/60 mm of hg, spo2 98%, chest bilateral fine crepts, cardiovascular system and abdomen normal, pupils normal size, normal reaction to light, neck rigidity present, brudzinski sign positive, babinski positive. On investigations, Haemoglobin - 12.2 gm.%, total leukocyte count - 14,000 per cumm, differential leukocyte count - polymorphs 90%, 7% lymphocytes, 2% eosinophils and 1% monocytes, platelet count-3.2 lakhs, blood urea- 72 mg% serum creatinine -0.9 mg%, serum bilirubin -0.2 mg%, serum aspartate aminotransferase-19 iu/l, alanine aminotransferase- 11 IU/L, alkaline phosphatase 165 IU/ L, serum sodium 136 meq /l, serum potassium 5.1 meq /l, serum CPK- 36 U/L, CKMB-9 IU/L, LDH 359 U/L, blood and urine culture sterile, blood sugar 400 mg%, urine ketones positive, CRP 100. ABG showed pH -7.4, po2 -137, pCo2 -22, HCO₃ -13.7. CT scan head was normal. CSF analysis showed 4-5 cells, 80% polymorphs, sugar-119, protein - 148mg%, ADA- 0.16 U/L, LDH-45 IU/L, gram stain and culture negative, cryptococcal antigen and India ink negative, CSF viral panel for meningitis was also negative. ECG showed sinus tachycardia, CXR showed multiple ill-defined opacities in bilateral hilar region. Diagnosis of diabetic ketoacidosis with bacterial meningitis was made. Accordingly, patient was given intravenous fluids, insulin infusion for diabetic ketoacidosis, antibiotics ceftriaxone, vancomycin, metronidazole for bacterial meningitis. Probability of viral meningitis was also kept and patient was given intravenous acyclovir. EEG and MRI brain could not be done because of covid restrictions. RTPCR for covid was positive. Repeat ABG showed pH- 7.3, pO₂ -54 mmhg, pCO₂ 17 mmhg, HCO₃-8.3meq/l. Injection dexamethasone was also added as 6mg tds with hydroxychloroquine, azithromycin, vitamin C and zinc, oxygen therapy but patient succumbed to illness on the day of covid report.

DISCUSSION

Neurotropism is common with various coronaviruses SAR Co V(1), HCV-OC43 (2), CoV -NL 63 (3), hence it is expected with SAR Co V2 also. Probable mechanisms proposed are through invasion via olfactory bulb, blood stream or cytokine storm.

First case of Meningoencephalitis with SARS CoV2 was reported from China and then Japan. In a systematic review by Mondal et al of 54 patients of meningoencephalitis, diabetes was found in 18.5%, cough, dyspnoea in 42.8%, vomiting 3.7%, diarrhoea 7.4%, respiratory distress 3.7%, altered sensorium 37%, neck rigidity 11.11%, brudzinski sign 1.85% ,Babinski 1.85%. CSF pleocytosis with lymphocytosis was reported.

As per WHO guidelines, definitive diagnosis requires CSF isolation or brain tissue biopsy both of which were not possible but evidence of brain inflammation was there in CSF. Hence a probable diagnosis of covid associated meningoencephalitis with diabetic ketosis with viral pneumonia was made after ruling out other infections.

This case is reported because of unusual features. There was no history of anosmia, sore throat and dyspnoea. Instead there was vomiting and diarrhoea. CSF had neutrophils which are unusual. Blood had lymphopenia, raised LDH and CRP with RTPCR covid positive report from nasopharyngeal swab. It is to make clinicians aware that although rare but SARSCOV2 should also be kept in differential of meningoencephalitis in the current scenario.

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