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ACUTE STROKE IN SEVERE COVID 19 DISEASE (CASE REPORT)

Respiratory Medicine

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ABSTRACT

Coronavirus disease 2019 (covid-19) evolved quickly into a global pandemic with myriad systemic complications. We report a case of acute cerebro-vascular accident (infarct) with hemorrhagic transformation of covid-19 inspite of proper anticoagulation therapy.

KEYWORDS

CASE REPORT:

A 62 years old known hypertensive and diabetic patient on regular medication presented with chief complaints of fever since 2 days Cough with mucoid expectoration since 2 days Loss of taste and smell sensation since 2 days And sob grade-iv mmrc since 1 day.

No h/o chestpain, hemoptysis, loss of conciousness.

On evaluation- patient is concious, coherent and well oriented .

Bp-130/80mmhg, heart rate-56/min , Respiratory rate-26/min,spo2%-84% at room air Temperature-101.4 ^{0}f, Auscultation – bilateral diffuse fine inspiratory crepts present.

Patient was diagnosed to be covid-19 positive by rt-pcr tecnique on day-3 of hospital stay.

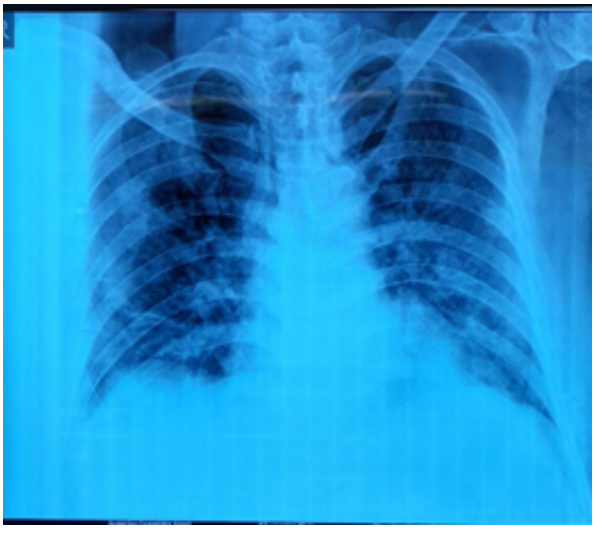
- patient was provided niv (bipap) support in view of persistent hypoxemia.
- he was treated with i.v broad spectrum antibiotics (carbapenems ,macrolides),
- antiviral drugs(remdesivir standard dose 200mg i.v od day-1 followed by 100mg i.v od day 2-5),
- high dose iv steroids (methylprednisolone 125mg bid) after inflammatory markers report.
- anticoagulation (low molecular weight heparin 60mg ,s/c ,bid).
- supportive medication in the form of zinc, vitamin-c, b-complex etc.

His routine blood investigations revealed

Investigation	16/09/20	19/09/20	20/9/20	21/09/20	23/9/20	26/9/20	3/10/20
WBC (cumm)	17,6000	-	10,900	-	15,100	17,800	18,000
Hb (gm/dl)	14.1gm/dl		13.5				
Platelet count (cumm)	1,41,000		1,47,000		1,00 000	1,41,000	1,20,000
Sr.CREATINE (mg/dl)	0.7		0.9				
Bilirubin (mg/dL)	1.6 (D-1.2 & I-0.4)	1.8 (D-1 , I-.8)	3 (D-1.5 & I-1.5)			3.9 (D-1.6 , I-2.3)	
LDH (U/L)	1005	1270		1761	1578	1125	
Na+(mmol/l)	127						
K+(mmol/l)	3.4						
Albumin (g/dL)	3.2	3.1					
CRP (mg/Dl)	0.6			0.6			
SGOT (U/L)	25	86					
SGPT (U/L)	62	201					
CA+2			8.1				
D-DIMER (pg/ml)		29.6					
Sr.Ferritin		2189					
IL-6 (pg/ml)				9.69			

Patients Radiological Pofile:

Chest x-ray:s/o bilateral upper ,middle and lower zone Non homogenous opacities (+)

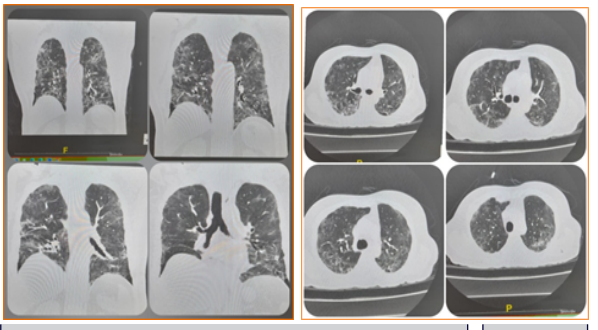


HRCT Chest:

S/o bilateral diffuse ggo ,sub pleural bands tractional bronchiectasis with thickened inter lobular septa.

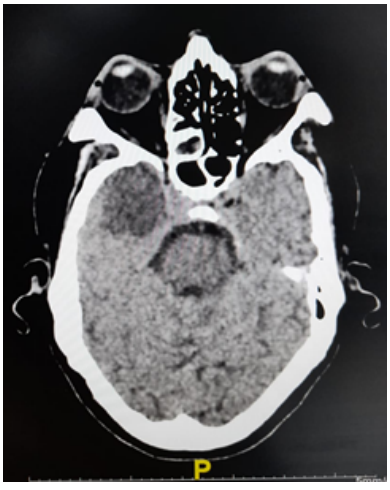
Corads-5 (high suspescion of covid -19)

Ct severity index -16/25

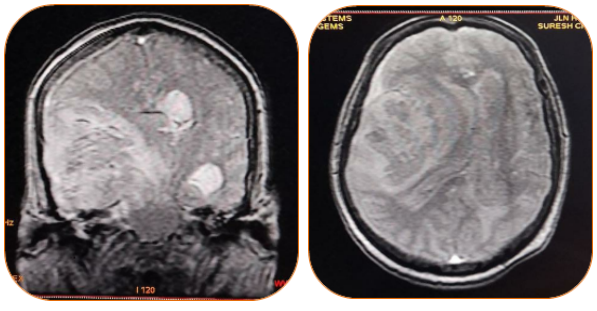


Patient gradually improved symptomatically and treatment was altered accordingly in the form of de-escalation of iv antibiotics to oral antibiotics, inj.methylprednisolone dose reduced from 125 mg to 40 mg bid and injectable anticoagulation (l.m.w.h) was to oral anticoagulants (dabigatran 75mg od) and other supportive medication was continued.

On day-17,patient suddenly developed left upper and lower limb weakness associated with deviation of mouth.immediatly he was subjected to ct-brain (plain) which is suggestive of acute infarct of right temporal lobe.he was started on low molecular weight heparin,statins ,neuroprotective drugs and antiplatelets.



On day 19, patient became unconcious.he was subjected to mri brain which is suggestive of Acute to subacute right temporal lobe infarct with bleed with in the lesion and oedema surrounding the lesion. (hemorrhagic transformation of infarct)



On day-20, patient suffered cardio-respiratory arrest and died inspite of vigorous resuscitative efforts.

DISCUSSION:

Acute stroke (cardiovascular and cerebro vascular accidents) are deletirious complication of advanced covid-19 infection.

Covid-19-related stroke mechanisms would also increase the risk of stroke in infected persons who harbor the more conventional stroke risk factors.

- Three main mechanisms appear to be responsible for the occurrence of ischemic strokes in covid-19

1) Hypercoagulable state,
2) Vasculitis, and
3) Cardiomyopathy.

Pathogenesis of hemorrhagic strokes in covid-19 is possibly due to affinity of the sars-cov-2 for ace2 receptors, which are expressed in endothelial and arterial smooth muscle cells in the brain, allows the virus to damage intracranial arteries, causing vessel wall rupture. In addition, it is possible that the cytokine storm could result in damage of blood brain barrier and may cause hemorrhagic posterior reversible encephalopathy syndrome (pres).

- Secondary hemorrhagic transformation of ischemic strokes may occur in the setting of endothelial damage or a consumption coagulopathy accompanying covid-19.

- It should be noted that in covid-19, many large artery occlusions may not be due to atherosclerosis but to embolization (from an intracardiac thrombus, or paradoxical emboli from deep vein thrombosis).

CONCLUSION:

Steroids and anti-coagulation is the cornerstone in the treatment of covid-19 disease.

Patients with high inflamatory markers like elevated serum ferritin,elevated serum ldh,increased il-6 levels are more prone for ischaemic strokes particularly in patients of covid -19 disaese.

Anticoagulation is double edged sword particularly in viral infections like covid-19 with low platelet counts and associated significant comorbidities for acute stroke (cardio vascular accidents & cerebro vascular accidents).

We propose further studies in the field of acute stroke mangement in covid-19 disease for the better management of the patient.

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