

One case of coronavirus disease 2019 (COVID-19) positive in a patient with multiple comorbidity

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Abstract

The ongoing battle of COVID-19 India become an emergency of international concern when thousands of people were infected around the world now rapidly increasing number of case with co-morbidity is common in India . This case control study of a patient with covid 19 positive simultaneously infected by SARS-Cov-2 and multiple co morbidity. This case highlights that a co-infection of SARS-Cov-2 and multiple other elevated disease condition like type 2 diabetes mellitus / Systemic Hypertension/ coronary artery diseases/ chronic obstructive pulmonary disease, may severely impair the immune system.

Introduction

Pneumonia of unknown cause detected in Wuhan, China was first reported to the WHO Country Office in China on 31 December 2019. officially named by the World Health Organization as COVID-19, appeared in Wuhan, Hubei Province, China, WHO is working 24/7 to analyse data, provide advice, coordinate with partners, help countries prepare, increase supplies and manage expert networks. The outbreak was declared a Public Health Emergency of International Concern on 30 January 2020. On 11 February 2020, WHO announced a name for the new coronavirus disease: COVID-19. Patients present with severe viral pneumonia and respiratory illness. Lymphopenia has been considered as a poor prognostic factor for severe acute respiratory syndrome (SARS) [1] as well as COVID19 [2].

Case Presentation

A 65 year old patient known case of type 2 diabetes mellitus / Systemic Hypertension/ coronary artery diseases/ chronic obstructive pulmonary disease was admitted on 21/05/2020 with chief complaints of fever cough and breathlessness for 1 day, H/O travel from Chennai to Erode after 40 days stays during lockdown in Chennai. While evaluation of sign and symptom patient had symptom of coronavirus like fever, dry cough and tiredness , Initial investigation like CBC, RFT, LFT RBC, LRP, B-. UREA, SERUM CREATNINE AND CHEST X-REY were done and most important nasal and oral swab were taken.

On day one: 21/05/2020

Lab Examination

SL . NO	TYPE OF TEST	RESULTS
	WBC	11.6X10 ³ /ml
	RBC	4.4X10 ⁶ /ml
	HGB	10.6g/dl
	HCT	31.6%
	MCV	71.8fl
	MCH	24.1pg
	MLHC	33.5 g/dl
	PCT	420X10 ³ /ml
	ESR	54 MM/hr
	Blood urea	27mg/dl
	SGOT	181 IU/L
	SGPT	161 IU/L
	SALP	210 IU/L
	SERUM CREATININE	0.9mg/dl
	RBC	160/mg/dl
	SERUM TOTAL PROTIEIN	7.2 mg/dl
	ALBUMIN	4 gm/dl
	GLOBUMIN	3.2mg/dl
	SERUM BILIRUBINE	0.7gm/dl TOTAL: DIRECT: 0.2MG/DL INDIRECT: 0.7MG/DL
		α. β.

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Urine Examination:

1. YELLOW , CLEAR , ACIDIC , ABLUMINE TRAC SUGAR +0.5%
2. BILE SALT+ -PIGMENTED
3. PUSCELLS: 6-8
4. EPITHILIAL CELLS : 1-3
5. RBC : 1-2

CHEST X -RAY Impression shown R/L lower part infiltration, HR Chest shows

ABG shown Respiratory alkalosis

1. PH: 7.47
2. pCo2 : 22.3 mmhg
3. pO2 61mmhg
4. Na+ : 137 mmol/l
5. K+ 3.22 mmol/l
6. Ca : 0.75 mmol/l

Vitals:

1. PR-98/min
2. Rr-24/min
3. BP- 140/190 mmhg
4. SPO2 95% in room air

Impression:

1. CBC shown mild leucocytosis
2. ESR raised with higher level
3. RT-PCR report shown COVID 19 POSITIVE (+)

On the day of admission 21/05/202, patient was diagnosed as case of SARI/hypertension /type 2DM/CAD /COPD.

Discussion

There are many coronaviruses, ranging from the common cold to much more serious viruses such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). They are viruses that have been transmitted from animals to people. In severe cases, coronaviruses can cause infection in the lungs (pneumonia), kidney failure and even death. At present there is no vaccine against COVID-19 [4]. In above case patient was Nasal oxygen (4L/min) with high flow O₂, drug is instituted Azithromycin 500mg OD, Inj Meropenem I.V .TDS initially, Inj methyl Prednisolone 500mg B.D given for 3 days , Inj. Insulin infusion followed by bolus regimen according random blood sugar level , patient was kept for strict glycaemic control , Inj enoxaprine 40 u.s.c od was given for microvascular thrombosis prevention and Inj. Pantoprazole 40 mg I.V. Meanwhile Supportive measured given for B.P control

by giving drugs like Diltiazem 30 mg B.D, Tab clopidogrel 75 mg (antiplatelet), Tab. Atorvastatin 10mg (hypolipidemic). Above drug for Coronary artery disease and drugs were continued as such. Common signs are typical flu-like symptoms: a fever, cough, breathing difficulties, tiredness and muscle aches. Symptoms usually start within 3-7 days of exposure to the virus, but in some cases it has taken up to 14 days for symptoms to appear.

People of all ages can be infected. For many (more than 80% of cases), COVID-19 is mild, with minimal flu-like symptoms. Some have not shown symptoms or only very mild symptoms, more like a common cold. The majority of people who have caught the virus have not needed to be hospitalised for supportive care. However, in up to 15% of cases COVID-19 has been severe and in around 5% of cases it has led to critical illness. The vast majority (around 98%) of people infected to date have survived [1]. we have started with Drugs for COPD: Bronchodilators, Budesonides 80 mg twice daily Levalbuterol 90mg twice daily , Ipratropium bromide (MDI) 1 ml 3-4times daily Patient was reviewed daily by physcists, anaesthetics , and pulmonologists. Like any other respiratory disease, COVID-19 is spread through air-droplets that are dispersed when an infected person talks, sneezes or coughs. The virus can survive from a few hours up to a few days depending on the environmental conditions. It can be spread through close contact with an infected person or by contact with air droplets in the environment (on a surface for example) and then touching the mouth or nose (hence the common advice circulating on hand hygiene and social distancing). COVID-19 is a new coronavirus. Keep informed of the latest developments by looking out for updates and advice from your government, national diabetes association and other reliable sources [7] in the above case of comorbidity Patient improves gradually and repeat radiological examination with the help of chest x ray and CT-SCAN done shows significant decrease in lung infiltration to near normal lung parenchyma patient is comfortable , breathing difficulty below 20/min is reduced ; gradually patient improved , nasal oxygen tarpapered and stopped patient, now maintaining SPO2 – 98-99% in room air temperature .On examination:

Pulse rate: 82/min

Blood pressure: 120/80 min

Respiratory rate: 20/min

SPO₂: 98% in room air temperature, repeatedly ABG and random blood sugar is noted

Systemic examination:

Cvs: s1-s2 heard

RS: NVBS heard, no added sound

CNS: absolutely fine

P/A: soft, not tender

Repeated RT-PCR done. RT-PCR third sample shows negative, no sign and symptom covid 19, patient successfully discharge with stable vitals.

On the day of discharge 07/06/2020; random blood sugar is 105 mg/dl post prandial blood sugar level- 188mg/dl blood sugar level found to be satisfactory.

Conclusions

Specific antiviral treatments and vaccines are still under drug development process, testing, quarantine, and social distancing are main criteria to prevent virus spread. In current scenario virus keeps mutating and evolving during the pandemic, studies on viral pathogenicity, treatments and prophylactic vaccines should be monitored and proper treatment regimen along with drug of comorbidity can be managed.

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