

A case report of COVID-19 with multiple comorbidities with a positive outcome in early days of COVID-19 outbreak in Bangladesh

Mohammed A^a, Mohammed S^b, Tasnim N^a, Afroze S^c, Papri N^a

ABSTRACT

We present a case of 68-year-old man with diabetes, heart failure, status post-coronary artery bypass grafts, cardiac resynchronization therapy defibrillator in situ, altered liver function, with corona virus disease 2019. He presented with cough and high grade fever with occasional dyspnea. He was treated at home with favipiravir, methyl prednisolone, enoxaparin and antibiotics and home oxygen therapy. He re-tested positive on 14th and 21st day and later on 31st day he was found RT-PCR negative for SARS-CoV-2. Patient came for a follow-up after 3 months in healthy state with normal D-dimer and other inflammatory markers.

Key words: COVID-19, multiple comorbidities, Bangladesh.

(*BIRDEM Med J 2020; 10, COVID Supplement:131-134*)

INTRODUCTION

From the first report of COVID-19 positive case on 31st December 2019 the number of deaths due to COVID-19 are increasing globally. From March 2020 it is also increasing in Bangladesh. Co-morbidities like age, diabetes, heart failure, renal failure, chronic liver disease, hypertension increases the chance of fatality from the disease and poor outcome⁴. Spain study shows fatality in a University Hospital in Spain with at least one comorbidity was 81.9%. Hypertension was the most frequent (64.6%), followed by chronic kidney disease (29.3%), diabetes (28.1%), chronic respiratory disease (17.1%), heart failure (11.9%), obesity (6.6%), malignancy (5.4%), and chronic liver disease (2.3%)^{2,3}

Author information

- Asif Mohammed, Naila Tasmin, Nowshin Papri, Laboratory of Gut-Brain Signaling, Laboratory Sciences and Services Division (LSSD), icddr,b, Dhaka, Bangladesh.
- Sadaf Mohammed, Department of Surgery, Dhaka Medical College, Dhaka, Bangladesh.
- Sharmin Afroze, Department of Respiratory Medicine, Dhaka Medical College, Dhaka, Bangladesh.

Address of correspondence: Asif Mohammed, Laboratory of Gut-Brain Signaling, Laboratory Sciences and Services Division (LSSD), icddr,b Dhaka, Bangladesh. Email: dr.asifmohammed03@gmail.com

Received: November 7, 2020

Revision received: December 11, 2020

Accepted: December 15, 2020

CASE REPORT

A 68-year-old male with body mass index 25.7kg/m² came to a private chamber on 8th May 2020 with cough and high grade(101-103F) fever and occasional dyspnea for 3-4 days. He gave history of several old myocardial infraction with coronary artery bypass grafting(CABG) 28 years back with cardiac resynchronization therapy defibrillator (CRTD) in situ for 4 years, ejection fraction- 38%, fairly controlled diabetes mellitus with elevated liver enzymes. On examination temperature was 101F, heart rate 67 beats per minute, blood pressure 120/80mmhg, SpO₂ was 92-96% at room air. On auscultation both lung field was clear. Later on he was diagnosed COVID 19 by *reverse transcription polymerase chain reaction (RT-PCR)* of nasopharyngeal swab. On day 8 his fever subsided with highest peak of 103F and he again had fever (102F) on day 12 which subsided the next day following treatment. He had variable oxygen demand till day 20 with peak demand of oxygen 4L/Min. Everyday follow-up was done along with regular required laboratory tests (CBC, D.Dimer, Serum Ferritin, Serum LDH, etc). He was in good health and found COVID-19 Negative on day 31. From the day of diagnosis he was advised and had started flavipiravir 200mg with recommended doses as a specific treatment for COVID 19, vitamin D 200000iu weekly, zinc 20mg 2 tablet daily was given for vitamin

and mineral supplementation, anacetylcystine 600mg 12 hourly for mucolytic action with coverage of cefuroxime and clavirunic acid combination for prophylaxis of secondary bacterial infection and enoxaparin 40mg 12 hourly for thrombolysis and anti-inflammatory action, linagliptin 5 mg and insulin was given for his glycemic control, oral acetaminophen 1330mg 8 hourly and body sponging was given for the temperature control, clopidogrel was stopped as it had adverse drug interaction with flavipiravir. On the 5th day antibiotics were changed to meropenem 1g 12 hourly and on 7th day meropenem 1g was given 8 hourly, levofloxacin 750mg once daily was given as temperature

did not subside with 88% neutrophil count suspecting secondary bacterial infection. On the 8th day fever subsided maintaining 92-98% Spo2 at room air. As the days passed patient was doing better clinically with no to occasional respiratory complaints. On day 12 his fever returned (102F), tab.methyl prednisolone 32mg 12 hourly was given to achieve anti-inflammatory effect, enoxaparin 60 mg 12hourly was given observing his high temperature and raise of ESR (104mm in 1st hour) and D dimer (.85µg/ml). Prophylactic Enoxaparin 60 mg 12 hourly was given for 15 more days for better thromboprophylaxis Methyl prednisolone was tapered from day 19 of COVID19 positive. Though patient was

Table I Abnormal to normal lab values with day

Day	3	7	8	9	12	15	18	19	22	30	36
ESR	23	40	49	56	104	20	8	10	34	59	N/D
WBC	7700	7200	5600	11500	10540	14700	21600	22000	12400	6400	N/D
Platelite	150000								130000	170000	N/D
Neutrophil	75	80	83	84	89.8	90	93	88	86	75	N/D
Lymphocytes	16	17	14	10	6	7	5	6	7	17	N/D
d-dimer(ng/ml)	1.05	0.8	0.99	0.96	0.858	0.38	0.41		0.35	0.51	0.48
Inr	1.05		N/D	N/D	1.11	1	1	N/D	1	N/D	N/D
Apt		N/D	N/D	N/D	N/D	N/D	N/D	N/D	30	N/D	N/D
Pt			N/D	N/D	13.2	12	12	N/D	N/D	N/D	N/D
Crp	<6	12	24	N/D	44.4	<6	<6	<6	12		
LDH	301	N/D	450	N/D	476	N/D	369		N/D		
ferritin(mg/dl)	123.34	439.86	831.04	N/D	748.46	313	n/d	305	N/D	N/D	N/D
(n-397)											
creatinine	1.3	N/D	N/D	N/D	N/D	N/D	N/D	N/D	1	1	0.9
Bilirubin	N/D	N/D	N/D	N/D	N/D	N/D	0.88	0.96	0.82	N/D	N/D
alk phosphatase	N/D	N/D	N/D	N/D	N/D	N/D	N/D	119	153	198	152
(up to 126U/L)											
Sgot	N/D	N/D	N/D	N/D	N/D	N/D	N/D	46	N/D	N/D	N/D
Sgpt	56	51	67			209	314	253	177	91	54
Na	N/D	N/D	N/D	N/D	N/D	N/D	133	N/D	N/D	N/D	N/D
K	N/D	N/D	N/D	N/D	N/D	N/D	5	N/D	N/D	N/D	N/D
Cl	N/D	N/D	N/D	N/D	N/D	N/D	98	N/D	N/D	N/D	N/D
tco2	N/D	N/D	N/D	N/D	N/D	N/D	28	N/D	N/D	N/D	N/D
BUN	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	19	N/D	N/D
procalcitonin (<.5)	N/D	N/D	N/D	N/D	N/D	0.43	N/D	N/D	0.3	N/D	N/D

*N/D= note done

clinically better but laboratory report showed raise of total leukocyte (21600) and drop in ESR (104 to 20mm/hr) for better antibiotic coverage antibiotics were changed to Gemifloxacin once daily for 7 days on day 18th of SARS-CoV-2 infection. On the 19th day of the SARS-COV-2 infection patient complaints of burning micturition and oral thrush, nitrofurantoin 100mg for 14 days and miconazole gel 2% was given locally. As we were tapering the steroid ESR was slowly rising (8 mm in 1st hour to 10 mm in 1st hour to 34 mm in 1st hour) (Westergren) and total leukocyte count was gradually falling (21600 to 22000 to 12400) at day 22 enoxaparin was stopped with d.dimer 0.35µg/ml and rivaroxaban 10 mg once daily was started and continued for 1 month for thromboprophylaxis. Except oral thrush patient had no complaints on day 31 and patient was also reported COVID 19 negative on same date. Day 36 follow-up lab report values came back to normal except slightly raised SGPT (54U/L). Peak of SGPT (314U/L) was found on day 18 and peak of ALP (198U/L) was found on day 30 of COVID 19 positive. Peak of total count of White blood cell was 22000 on day 19th and Neutrophil was 93% on day 18th. On the day of COVID-19 diagnosis high resolution computerized tomography (HRCT) chest was done and was found normal. During the SARS Cov-19 infection, glycemic control was fair and was mostly below 10mmol/L. At month 3 after being COVID 19 negative at follow-up patient was healthy and d.dimer was in normal range (0.35 µg/ml). Patient was not hospitalized during the infection on his own choice.

DISCUSSION

Bangladesh is a middle income country with a rising poles of death related to COVID-19¹. Most of the people appear reluctant of danger of SARS-CoV-2 infection. COVID 19 infection after 60 years of age trends to fatal and diabetes, heart failure, chronic diseases increases the chance of fatality^{3,4}. Aged people mostly have comorbidities and remain reluctant and some case neglected for follow up which can be the cause of high mortality rate among elderly. SARS-CoV-2 infection mortality rate can be significantly changed if proper care at proper time can be given. In this case elevated liver enzymes and be explained as Flavipiravir and COVID 19 both can cause increase in liver enzymes⁶ so this drug should be used with caution in patients with hepatic impairment. Oral thrush

,hyperglycemia, leukocytosis in later part of the disease can be explained as administration of methylprednisolone⁵ and hyperglycemia can complicate the disease process for that insulin or insulin analogue can be used for a fair to good glycemic control, local anti fungal can be used to minimize hepatic metabolism in hepatic enzyme impaired patients. Director General Health Services (DGHS), govt of Bangladesh data shows there is a tendency to be non-hospitalization in case of COVID 19 patients though number of prepared support team is fair quantitatively and qualitatively¹. It was in initial days of Covid-19 outbreak in Bangladesh when we dealt with the patient. He had multiple risk factor for fatality. We treated him at home as he desired. His follow up was good. Home care was adequate and he had complete and good recovery with no sequelae. All these could be done because he had no pneumonitis evident in HRCT, which puts him in category of mild covid with multiple comorbidities. From the beginning he was well cared, but care at home in such condition of COVID with multiple co-morbidities is not wise. He had to be hospitalized at least for observation. His uneventful recovery can not be an example for treating such category of patients at home. But as the patient disagreed to go to any hospital and the home support was assumed to be dependable and adequate, we treated him with home oxygen therapy and medications keeping the patient at home where patient having mild risk factors with SCRB60 score 0-1⁷ but there was high neutrophil lymphocyte ratio throughout the treatment, which is a prognostic marker for poor prognosis.⁸

Conclusion

This patient was a 68 years old man with diabetes, CABG, CRTD in situ for heart failure with altered hepatic enzymes. He is case with multiple co-morbidity with SARS-COV-2 infection. His high fever continued for two weeks with elevated inflammatory markers. As the patient disagreed and his home support was assumed not to be inadequate for follow up with patient's normal HRCT chest showed absence of pneumonitis with SCRB 60 score 0-1, he was successfully treated and followed-up at home.

Acknowledgement: We are grateful to Prof. Dr. Khwaja Nazim Uddin from Department of Internal Medicine, Ibrahim Medical College and Dr. Md. Mohiuddin Ahmad from department of Respiratory Medicine, Dhaka Medical College Hospital for their extraordinary support and guidance during treating the patient.

REFERENCES

1. <http://dashboard.dghs.gov.bd/webportal/pages/covid19.php> accessed on 18.9.2020 at 3:03am
2. https://www.who.int/docs/default-source/searo/bangladesh/covid-19-who-bangladesh-situation-reports/who-ban-covid-19-sitrep-11.pdf?sfvrsn=ee79ca3d_6 accessed on 18.9.2020 at 3:03am
3. Zhand, S., Jazi, M. S., Mohammadi, S., Rasekhi, R. T., Rostamian, G., Kalani, M. R., et al. COVID-19: The Immune Responses and Clinical Therapy Candidates. *International Journal of Molecular Sciences* 2020; 21(15): 5559.
4. Posso, M., Comas, M., Román, M., Domingo, L., Louro, J., González, C., et al. Comorbidities and Mortality in Patients With COVID-19 Aged 60 Years and Older in a University Hospital in Spain. *Archivos De Bronconeumologia* 2020; 56(11): 756-8.
5. Serra-Bonett, N., Snih, S. A., Rodriguez, M. A. Effect of Low-Dose Prednisone on Leukocyte Counts and Subpopulations in Patients With Rheumatoid Arthritis. *Journal of Clinical Rheumatology* 2009; 15(3): 148-9.
6. Olry, A., Meunier, L., Délire, B., Larrey, D., Horsmans, Y., Louët, H. L. Drug-Induced Liver Injury and COVID-19 Infection: The Rules Remain the Same. *Drug Safety* 2020; 43(7): 615-7.
7. Sardesai, I., Grover, J., Garg, M., Nanayakkara, P. B., Somma, S. D., Paladino, L., et al. Short term home oxygen therapy COVID-19 patients: The COVID-HOT algorithm. *Journal of Family Medicine and Primary Care* 2020; 9(7): 3209.
8. Yang, A. P., Liu, J. P., Tao, W. Q., & Li, H. M. The diagnostic and predictive role of NLR, d-NLR and PLR in COVID-19 patients. *International Immunopharmacology* 2020; 84, 106504.