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SINGLE DOSE IVIG A REALBOON IN COVID PATIENTS

Medicine

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ABSTRACT

In our study we present five covid positive cases of elderly age who were not able to maintain oxygen saturation thereby requires high supplementation of oxygen and all of them had 60 – 80% involvement of covid pneumonia. They were treated with INJ Remdesvir for 5 days despite of 10 days, steroids and IVIG at dose of 20 g in single dose as adjuvant therapy . This saved critical patient from invasive ventilatory support and decresed their total duration of hospital stay . This therapy is effective same as 5 day course of IVIG and 10 days course of injection remdesvir. It is even cost effective too. We found the benefit of 5 day therapy of remdesvir despite of 10 days . IVIG being given in single dose instead of 5 days also proved of great benefit and also reduced the cost of therapy for developing nation like INDIA in this covid pandemic.

KEYWORDS

COVID, Pandemic, IVIG, Remdesvir

INTRODUCTION:

SARS COV i.e. COVID 19 has shattered millions of life starting from Wuhan (China) spreading to nations worldwide. Its been a year of covid 19 still many lifes are struggling due to adverse outcome either physically, socially, emotionally or financially. On 11 March, WHO declared covid as PANDEMIC world wide[1]. Many treatment protocols consisting have been introduced like antihelminths[2], antibiotics, vitamins, immunomodulators and antivirals[3]. Maximally people develop mild symptoms or even may be asymptomatic. ARDS may develop in 15% may need oxygen in hospital, about 5% may develop critical illness of ARDS[4].

Studies have depicted that high levels of inflammatory markers like CRP, ESR and pro inflammatory cytokines[5]. IL-6 are responsible for severity indicating mortality. This is represented as cytokine storm[6]. In our study we present five covid positive cases of elderly age who presented to Lokpriya Hospital, Meerut who were not able to maintain oxygen saturation thereby requires high supplementation of oxygen and all of them had 60 – 80% involvement of covid pneumonia.

CASE 1: 63 year old female presented with fever, cough and shortness of breath for 6 days to covid zone of lokpriya hospital. She was known case of diabetes mellitus and htn .she was COVID positive detected in oropharyngeal swab rtpcr (29 /11/20). On arrival her vitals were bp 158/78 mmhg , pr 98bpm spo2 of 76% taken on nrbm. She was dyspnic with respiratory rate of 28 /min . Her hrct had CTSI of 17/25 CORADS 5 suggestive of viral (COVID) pneumonia. Her Hb 13.1 Tlc was 9400/cumm , ESRr 48 ,CRP 118, HbA1c of 11.1. She was drowsy but arousable . High risk and poor condition of patient was explained to attendants. Her vitals remain largely unstable not able to maintain saturation 94%.

On the first day she was started with injection remdesvir with injection dexa and lmwh for 5 days and injection immunoglobulin 20 mg(5 mg of 100 mlvial each) via infusion pump on first day in view of poor condition and falling saturation . No adverse effects occurred. Gradually were able to taper down her oxygen requirement. On 3/12/20 her Abg showed po2 99.8 pco2 47.4 ph 7.5 .

We were able to taper down patient from NRBM to 8-10 litres. She was given regular insulin to control her blood sugar levels. She was also treated with vitamin and multivitamins . on regular basis patient was encouraged for breath holding excercises and we repeated her HRCT it showed CTSI score of 11 . Serum Ferritin 286, D Dimer 1595 CRP decreades to 7.84 on 10 day of admission. Esr was also lowered to 37. On 11 day she was discharged on covid rtpcr negative reports with vitals stable. Table 1 describes the levels of various inflammatory marker at arrival and after administration of ivig and remedesvir , showing improving trend.

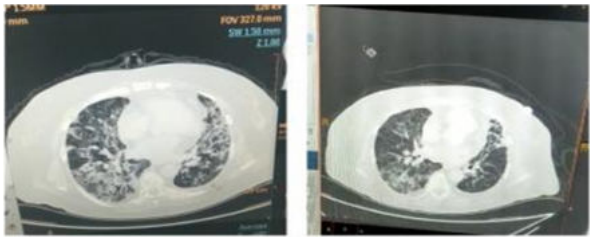

Figure 1: Earlier the HRCT showed focal patchy area of ground glass opacities with predominant thick intervening areas of intra lobular septal thickening CTSI 17 which later improved to CTSI of 11

CASE 2: Elderly female of 56 y who was k/c/o t2dm n htn came with difficulity in breathing 4 days. She had high grade fever 7 days back associated with dry cough . She had history of hypertension for 5 days was on telmisartan. She was housewife by profession and got came covid positive on 5/12/20. She was taken on non breather mask due to falling saturation of 44 % taken on 15 litres. Her vitals bp 138/98 mmhg , pr 112 bpm rbs 432 ketone negative.

Her ct scan showed thick fibriotic pulmonary lesions pericardial effusion cardiomegaly covid severity scoring was 13/35 . Her Abg suggestive of type 1 respiratory failure . She was treated with inj remdesvir on first day itself with steroids and lmwh . But her oxygen requirement was still not decreased and she was dyspnic. We started her on immunoglobulin 20gm. On 4th day she was able to maintain oxygen saturation with 98%. She practised prone positioning too. The hrct was repeated after 9 days had CTSI score of 5.

CASE 3: 61 y female with chronic history of hypothyroidism and hypertension came with fever vomiting and difficulty in breathing. She tested antigen covid positive . Her HRCT chest was performed which showed bilateral ground glass opacities CTSI 17/25. Her blood investigation IL 6 87.4 CRP 123.42 ESR 57 TLC 8200 D DIMER 2026.65 . This lead to starting of injection remdesvir for complete course of 5 days accompanied with dexamethasone 8mg per day and injection lmwh. Due to persistent high requirement of oxygen adjuvant therapy with inj immunoglobulin was started (20gm for day one over slow infusion). After 3 days her oxygen saturation came to 97% on room air. Earlier the hrct score was 13 and it is 12 and as compared to previous study there was improvement

CASE 4: 70 y old man came with fever and generalized weakness. His saturation on room air was 92% and was breathless while talking . On investigating her Tlc count was 12,700 CRP 82.45 ESR 30. On 2nd day he had fever 100 degree. His HRCT CTSI was 14/25 . Injection remdesvir together with steroids and antibiotics were administered. He

was on 02 support. Immunoglobulin were infused in view of detoriating condition. On 2nd day evening he was relieved from chest congestion. One day later we were able to decrease his oxygen support. Few days later on we weaned off from oxygen supplementation

CASE 5: Elderly fatty female k/c/o rheumatoid arthritis osteoarthritis shoulders with B/L TKR came with dry cough fever with loose stools. On presentation her saturation was 92%. She underwent hrct scan chest which showed her CTSI score of 10/25. She was maintaining saturation on supplementation of oxygen 4 litres. She was given injection remdesvir, tablet methylprednisolone and lmwh to prevent any thrombosis episodes . In order to prevent mortitality issues and escape her from going on ventilator her treatment was also with adjuvant therapy of immunoglobins 20 mg in sinle dose of 1 day despite of 5 days course . Successively, she came to saturation of 98 % on room air from 3 rd day evening of giving IVIG. She was even relieved from her symptoms too with conservative management. Her inflammatory markers IL 6 was <2.7 CRP 10.65 Esr lowered to 56 . Her Arterial blood gas level also improved enhancely Po2 48 to 122 and Pco2 41 to 23

Table 1: Inflammatory marker before and after the treatment in different cases

Parameters	CASE 1			CASE 2			CASE 3			CASE 4			CASE 5		
	1st day	4th day	10 day	1st day	4th day	7 day	1st day	5day	7 day	1st day	5day	7 day	1st day	5day	7 day
D-DIMER	4325	2860	1595	5326	1840	1404.2	2026.65	2643.79	1564.32	692.7	1161.22	691.96	1001	1375.2	673.25
ESR	48	48	37	51	55	55	52	62	61	30	40	40	101	53	56
CRP	118	88.2	7.84	204	23.4	13.22	123.42	64	31.44	82.45	102.1	44.57	77.75	29.01	10.65
TLC	9400	4320	4800	7500	5500	6500	8200	10500	10700	12700	9200	9800	2900	3400	4800
Fibrinogen	784	486	516	498	-	557	725	-	538	645	-	479	617	-	433
Ferritin	204	186	286	167.35	294.4	205	69.71	50.45	56.71	689		591.62	245	236	326.14
IL 6	78.9	36.2	<2.7	78.9	11.4	<2.7	87.4	65.7	3.6	112	44.6	<2.7	68.9	<2.7	<2.7
Urea	32			17			32			62			52		
Creatinine	0.68			0.88			1			1.2			1		
SGOT	32			23			55			44			41		
SGPT	44			47			38			68			15		
	ABG														
PH	7.5	7.465	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.3	7.4	7.43	7.45	7.6	
Pco2	39.4	43.8	47.4	35.8	39.4	46.3	38.8	36.4	46.9	34	34.6	35.3	48	23	
Po2	58	70.1	99.8	56.2	111	85	58.4	72	61.9	103	78.2	86.6	41	122	

DISCUSSION:

Its comes to notice when high-grade fever developed and respiratory distress became quite prominent. Some of these patients would also have gastrointestinal symptoms like loose stools. However, if we look at the CT series, which were quite typical of most COVID-19 patients, we would have a very strong impression that most of them had ground glass opacities with bilateral lesions started from the periphery, especially the subpleural region[7].These features indicated a hematogenous or lymphatic distribution or spreading of pathogenic factors rather than direct inspiration

According to data available so far it occurs in three phases starting phase, spanning the acquisition of the virus and subsequent viremia; and accelerating phase, when virus damage organs the lungs, the heart, the gastrointestinal tract, even an overall inflammatory storm and lastly final recovery phase. Potent suppression of the inflammatory cascade could save the patients from fatal immune-mediated injuries as done by giving IVIG to the patients above as adjuvant therapy to decrease fatalities and progress recovery. High-dose IVIg at 0.3–0.5 g per kg in single dose for one day was used in our patients as a potent and safe immune modulator, is being used for many disease like neuromuscular disorder and autoimmune disease[89]. The therapy was uneventful no adverse outcome occurred

CONCLUSION:

In the study we describe 5 cases of patient who were covid positive not able to maintain saturation at room air requiring high supplementation of oxygen . They were high probability canditates for ventilators but by using IVIG as adjuvant therapy we were able to decrease oxygen saturation and decrease hospital course of duration. The above study also conclude the benefit of 5 day therapy of remdesvir despite of 10 days . IVIG being given in single dose instead of 5 days also proved of great benefit and also reduced the cost of therapy for developing nation like INDIA in this covid pandemic.

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