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Clinical Pattern and Outcome of Severe Cases of Covid-19 in a Rural Medical College Hospital In Karnataka

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Abstract
Aims: *To study the clinical profile and outcome of severe form of Covid-19 subjects, to compare those who succumbed with those who survived*
Methods: *All adult subjects who fulfilled the criteria for severely ill covid-19 admitted to the dedicated Covid 19 facility attached to Adichuchangiri Institute of medical Science and Research Center, BG.Nagar between July 2020 and October 2020 were included.*
Results*: Out of 759 patients admitted to Covid-19 facility 60% were mild,35%were moderately severe and 5% were severe requiring HFNO or invasive ventilatory support total subjects succumbed to the illness were 20(2.63%)*
Conclusion*: Early screening at the fever clinic along with checking oxygen saturation and immediate transfer to the Critical Care Unit And Following Updated ICMR guidelines was instrumental in reducing the mortality. Male sex, advanced age ,comorbidities like DM,HTN.IHD,CKD,CLD, markedly raised inflammatory markers such as CRP,LDH and D-DIMER were found to be statistically significant adverse prognostic markers.*

Keywords: *HFNO-Highflow nasal oxygen, ESR-erythrocyte sedimentation rate, CRP c-reactive protein, LDH Lactate dehydrogenase, DM Diabetes mallitus, HTN. Hypertension, CLD Chronic liver disease, IHD Ischemic heart disease, CKD Chronic kidney disease, N.I.V. Non invasive ventilator*

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I. Introduction:

Worldover the affected subjects with Covid-19 virus infection had a mortality which ranged between 4.3 to 15%.We admitted 759 subjects during the peak months of the infection and the fatality was 2.63%.The present study was undertaken to detect those factors which affected the outcome adversely. We wanted to know whether early recognition and prompt treatment with HFNO, invasive ventilation and strict adherance to the updated treatment protocol helped in reducing the mortality.

II. Materials And Methods:

The study population consisted of those subjects admitted to Adichuchangiri Institute of medical Science and Research Centre between July 2020 and October 2020.

This cross sectional observational study included subjects who succumbed to the illness and those who recovered. 20 subjects in the former group were compared with 20 subjects who recovered. After obtaining approval from the ethical committee and consent from the subjects as per protocol the demographic variables, clinical characteristics, comorbid conditions and laboratory parameters were recorded.

STATISTICAL ANALYSIS:
The tools used in this study are discriptive statistics and z test using SPSS software.

III. Results:

Out of 759 subjects admitted to Covid-19 facility 40 subjects fulfilled the criteria for severely ill category. Among these subjects 20 succumbed and 20 recovered total cases admitted V/s total deaths (month wise) given in table 1. The demographic variables and comorbidities in Table 2.The comorbid conditions which affected the outcome in both above groups is given in Table 2.

Table 3 depicts the inflammatory markers that had statistically significant difference when compared with those who succumbed d with those who survived.

Table 1

Total cases admitted	July2020	August 2020	September2020	October2020
Total cases	37	272	248	202
No. Of deaths	2	8	6	4

Table 2 Demographic variables and comorbidities (Age in years)

Demographic variables	Succumbed group	Survived group
Less than 40	2	5
41to50	1	4
51to60	6	2
61to70	5	7
71to80	6	2
Male	13	15
Female	7	5
DM with HTN..	9	4
I.H.D.	1	0
C.K.D.	1	0
C.L.D.	1	0
No comorbidities	8	16

Table 3

Clinical characteristics	Number of subjects	Percentage
Shortness of breath	32	90
cough	28	70
fever	26	65
Bodyache	24	60
Nousea and vomiting	20	50
More than one symptom	32	80

Table 4

Radiological characteristics	Total number of subjects:40	Percentage
Unilateral pneumonia	10	25%
Bilateral pneumonia	30	75%
Ground glass opacity	24	60%

Table 5

Treatment variables	Total number of subjects:40	Percentage
Supplemental oxygen with N.I.V.	10	25%
HFNO	20	50%
Mechanical ventilator support	10	25%

Table 6

Laboratory variables	Succumbed Group	Recovered Group
R.B.S.	305	240

CRP	16.4	12.5
E.S.R.	39	12
LDH	769.8	604.7
D-Dimer	1450	458.3

IV. Discussion:

We included 40 subjects who fulfilled the criteria for severe Covid-19.Most common symptom was shortness of breath. Less common symptoms were fever, fatigue, headache and bodyache. The same pattern was reported by studies done by Wang D et al [4, 1-3,5],

Uncommon symptoms were nousea, vomiting and loose stools Most common comorbidity was dibetes and hyprtension. Less common were I.H. D.,C.K.D. and C.L.D. Similar trend was notedby studies by Joshy[6] et al and Richardson F et al[7].

Out of 20 patients who succumbed 9 had Diabetes and 8 had Hypertension. In a study byChen N[1] et al 51%had chronic disease.There were no comorbidities in 8 of the succumbed group compared with 16 subjects in the recovered group.

There was a male preponderance both in succumbed and survived group. The male to female ratio was 13:7and 15:5 respectively.These results are comparable to a study done by Chen N[1]et al(This author studied 99 subjects out of which 67 wer males and 32 were females.

Those with advanced age had higher mortality.Those above 70 years were 6 in the succumbed group compared to 2 in the survived group.The raised inflammatory markers were statistically significant.According to Velavan TP et al[8] CRP,D-dimer, Ferritin,Cardiac Troponin, ND i.l.6 either alone or in combination may be used for risk stratification.

V. Conclusion

Out of 40 subjects included in this study when succumbed subjects compared with those who survived the following variables were found to be statistically significant Elderly males, those with comorbidities like DM,HTN.CKD,CLD,IHD. Those with increased inflammatory markers like CRP,LDH,D; dimer had higher mortality.

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