Original Research Paper

General Medicine

CLINICAL PROFILE AND OUTCOME OF PATEINTS OF COVID19 ADMITTED IN SIR.T.HOSPITAL: A RECORD BASED STUDY

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ABSTRACT

Introduction: The clinical presentation and the mortality pattern is widely varied across the countries. In countries like India with diversity, the presentation of COVID-19 is different even among different States. This study was conducted to evaluate clinical, biochemical, radiological features and outcome among COVID-19 patients in a Sir T hospital of Bhavnagar, Gujarat, India. **Aim:** To study clinical profile and outcome in patients of COVID 19 admitted in sir t hospital. **Materials And Methods:** 800 patients were included in the study during 6 months of period. Based on inclusion and exclusion criteria patients were selected, though detailed medical history, clinical examination, physical examination and relevant investigation were collected then relevant data X and statistical analysis was performed with help of IBP SPSS version 22. **Result:** In present study, mean age of covid 19 pneumonitis was 48.79 ±10.58 years. Male (64.37%) COVID-19 Pneumonitis were predominantly higher than female (35.62 %.).HTN (38.75%) was immensely higher then DM (25.5%) and CVD (18.12%).Fever (76%) was vastly higher complain then Cough (73.62%) and Dyspnea (65.25%).COVID-19 Pneumonitis patients were categorized by respiratory rate and spo2 level as Mild (19.5%), moderate (47.87%) and Severe (32.62%) patients respectively. Due to biochemical parameters, it was found that anemia (8.75%), Leucopenia (4.75%), Leukocytosis (22.12%), thrombocytopenia (13.37%), Acute hepatitis (37.75%), high Creatinine (22.75%), high D dimer (32.62%), high CRP (42.37%) and high LDH (20.25%). Chest X-ray was abnormal in 64.37% patients and SPO2 at room air (<94%) in 38% patients, while mean duration of hospital stay was 10.05 ± 4.69 days. In addition, mortality rate was 7.62%. **Conclusion:**This study provided the spectrum of clinical presentations and host-related factors in outcome of COVID-19 which may help in decrease the burden of disease, minimize social disruption, and reduce the economic impact associated with a pandemic. Early detection, admission, and treatment of individuals with comorbidities and elderly would increase the recovery from the disease, thereby reduce mortality.

KEYWORDS : COVID 19

OBJECTIVES:

To assess clinical features of patients of COVID 19,To assess biochemical profile of patients of COVID 19,To assess radiological profile of patients of COVID19,To assess duration of hospital stay of patients of COVID 19 and To assess outcome of patients of COVID 19.

MATERIALS AND METHODS:

It was Descriptive record based study and conducted at Record Section, Sir T. General Hospital, Bhavnagar. All case records of RDT or RTPCR positive patients of COVID 19 admitted in Sir T. General Hospital, Bhavnagar during 1st January 2021 to 30th June 2021 having age >18years were included. Ethics approval was obtained from the Institutional Review Board of the Sir T Hospital, Bhavnagar. Epidemiological, clinical, laboratory and radiological characteristic data of patients were obtained with standardized data collection by using Performa. The data included age, gender, comorbidity (diabetes, hypertension, cardiovascular disease, etc.), presenting complains, category (mild, moderate, severe), biochemical parameters (Hb, TLC, PC, SGPT, SGOT, s.creatinine, PT INR, D dimer, CRP), oxygen saturation at the time of admission on room air, Chest x ray (Normal/Abnormal), Duration of hospital stay and outcome(survived/death) of patients. Continuous variables were expressed as mean with standard deviation and were compared between the groups by the student 't' test. Categorical variables were expressed as number (%) and compared by chi-square (v2) test or Fisher's exact test as appropriate. All statistical analyses were performed using the IBM SPSS 22.0 software. The significance level of the hypothesis tests was set at 0.05 (two-sided).

RESULTS:

In the present study,(34.5%) of COVID-19 Pneumonitis were higher in 41-50 years age group followed by (27.37%) of patients in 51-60 years age group with mean age of 48.79 ± 10.58 years. (64.37%) of male COVID-19 Pneumonitis were predominantly higher than female (35.62%). Moreover, the male: female ratio was found 1.80:1. HTN was immensely higher in (38.75%) patients then DM patients as (25.5%) and CVD in (18.12%) of patients. Fever was vastly higher complain in (76%) then Cough patients as (73.62%) and Dyspnoea in (65.25%) of patients.COVID-19 Pneumonitis patients were categorized by respiratory rate and spo2 level as Mild (19.5%), moderate (47.87%) and Severe (32.62%) patients respectively. Due to biochemical parameters, it was found that anemia in (8.75%), Leucopenia in (4.75%), Leukocytosis in (22.12%), thrombocytopenia in (13.37%), Acute hepatitis in (37.75%), high Creatinine in (22.75%), high D dimer in (45.37%) and high CRP in (42.37%) respectively. Chest X-ray was abnormal in (64.37%) patients. On Admission, SPO2 at room air (<94%) in (86%) patients, while mean duration of hospital stay was 5.91 + 1.43 days respectively. In addition, mortality rate was found in 7.62% patients.

Table 1: Age Wise Distribution

Age (yrs.)	No of patients (n=800)
18-30	32 (4%)
31-40	147 (18.37%)
41-50	276 (34.5%)
51-60	219 (27.37%)
61-70	108 (13.5%)
>70	18 (2.25%)
Total	800 (100%)
Mean age (yrs.)	48.79±10.58

Table 2: Gender Wise Distribution

Gender	No of patients(n=80)
Male	515 (64.37%)
Female	285 (35.62%)
Total	800 (100%)
M:F Ratio	1.80:1

Table 3: Co-morbidities Wise Distribution

Co-Morbidities	No of patients (n=800)
HTN	310 (38.75%)
DM	204 (25.5%)
CVD	145 (18.12%)
CKD	87 (10.87%)
CLD	70 (8.75%)
COPD	99 (12.37%)
CVA	38 (4.75%)

Table 4: Presenting Complain Wise Distribution

Complain	No of patients (n=800)
Fever	608 (76%)
Dry Cough	589 (73.62%)
Dyspnea	522 (65.25%)
Cough with sputum	183 (22.87%)
Chest Pain	159 (19.87%)
Fatigue	134 (16.75%)
Sore Throat	125 (15.62%)
Body ache	116 (14.5%)
Anosmia	108 (13.5%)
Loss of taste	86 (10.75%)
Diarrhea	84 (10.5%)
Abdominal Pain	52 (6%)

Table 5: Category Wise Covid-19 Pneumonitis

Category	No of patients (n=800)
Mild	156 (19.5%)
Moderate	383 (47.87%)
Severe	261 (32.62%)
Total	800 (100%)

Table 6: Biochemical Paramters

Parameter	No. of pateints(800)	Median
Hb (gm/dL)		12.8
• <10 mg/dL	70 (8.75%)	
• >10 mg/dL	730(91.25%)	
Total Count (*103/cmm)		7.7
• <4000 (/cmm)	38 (4.75%)	
• 4000-11000(/cmm)	585(73.13%)	
• >11000 (/cmm)	177(22.12%)	
Platelet (*103/cmm)		229
• <1.5(*103/cmm)	107(13.37%)	
• >1.5(*103/cmm)	693(86.63%)	
SGOT (U/L)		43.6
• <45 U/L	498(62.25%)	
• >45 U/L	302(37.75%)	
SGPT (U/L)		34.6
• <56 U/L	638(79.25%)	
• >56 U/L	162(20.75%)	
S. Creatinine (mg/dL)		0.99
• <1.2 mg/dl	618(77.25%)	
• >1.2 mg/dL	182(22.75%)	
PT/INR		1.17
• <1.1	642(80.25%)	
• > 1.1	158(19.75%)	
D Dimer (μ/mL)		0.779
• <0. 50μ/mL	437(54.63%)	
• >0.50μ/mL	363(45.37%)	
CRP (mg/L)		9.9
• <10 mg/L	461(57.63%)	
• >10 mg/L	339(42.37%)	

Table 7: O2 Saturation Wise Distribution

Spo2 Saturation ON Room air At the time of Admission	No. Of Patients (n=800)
>94%	112(14%)
<94%	688(86%)
Total	800(100%)

Table 8: Chest X Ray Wise Distribution

Chest X ray	No of patients (n=800)	
• Norma l	285 (35.62%)	
• Abnorma l	515 (64.37%)	
• Infiltra te	Unila tera l	Bila tera l
• Upper Zone	16	38
• Middle Zone	48	176
• Lower Zone	85	342

Table 9: Duration Of Hospital Stay

DURATION	No. of patients
<7 da ys	541(67.62%)
>7 da ys	259(32.37%)
Total	800(100%)
Mean Hospital Stay(days)	5.91+1.43

Table 10: Comparison Of Outcome Of Patients With Other Parameters

	Survived(n=739)	Death (n=16)	P value
Mean Age (yrs)	48.77 ± 10.57	49.11 ± 10.81	0.8096
Gender			
• Male	479 (64.81%)	36 (59.01%)	0.3631
• Female	260 (35.18%)	25 (40.98%)	
Comorbidities			
• HTN	274 (37.07%)	36 (59.01%)	<0.0001
• DM	177 (23.95%)	27 (44.26%)	0.0004
• CVD	132 (17.86%)	13 (21.31%)	0.5013
• CKD	83(11.23%)	4 (6.55%)	0.2597
• CLD	64 (8.66%)	6 (9.83%)	0.7542
• COPD	95 (12.85%)	4 (6.55%)	0.1511
• CVA	32 (4.33%)	6 (9.83%)	0.0519
Complaint			
• Fever	550 (73.05%)	58 (95.05%)	<0.0001
• Cough	536 (72.53%)	53 (86.88%)	0.0144
• Dyspnea	478 (64.68%)	44 (72.13%)	0.2402
• Sputum	159 (21.51%)	24 (39.34%)	0.0014
• Chest pain	147 (19.89%)	12 (19.67%)	0.2498
• Fatigue	121 (16.37%)	13 (21.31%)	0.3209
• Sore Throat	111 (15.02%)	14(22.95%)	0.1011
• Body ache	109 (14.74%)	7 (11.47%)	0.4852
• Anosmia	99 (13.39%)	9 (14.75%)	0.7654
• Loss of taste	80 (10.82%)	6 (9.83%)	0.8113
• Diarrhea	74 (10.01%)	10 (16.39%)	0.1182
• Abdominal Pain	48 (6.90%)	4 (6.55%)	1.0000
Biochemical Parameters			
• Hb	12.8	8.9	<0.0001
• TC	7.7	7.3	0.0620
• PLC	228	144.5	<0.0001
• SGPT	43	45	0.9136
• SGOT	34.5	35.3	0.8470
• Creatinine	0.93	5.2	<0.0001
• PT/INR	1.17	1.13	0.0015
• D-Dimer	0.721	1.31	<0.0001
• CRP	9.6	12.75	<0.0001
SPO2 Saturation			
• <94%	627(84.84%)	61(100%)	<0.0001
• >94%	112(15.15%)	00	
Chest X ray			
• Normal	274 (37.07%)	11 (18.03%)	<0.0001
• abnormal	465 (62.92%)	50 (81.96%)	
Hospital Stay (days)			
• <7 days	5.83 ± 1.30	5.83 ± 1.30	
	512 (69.28%)	512 (69.28%)	

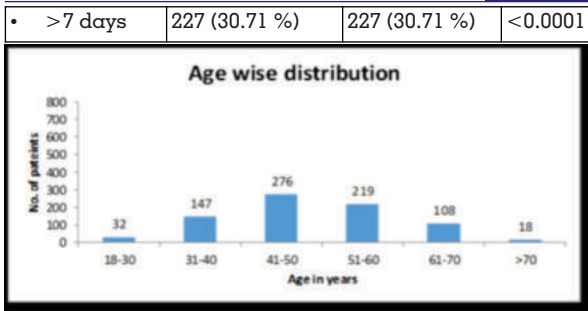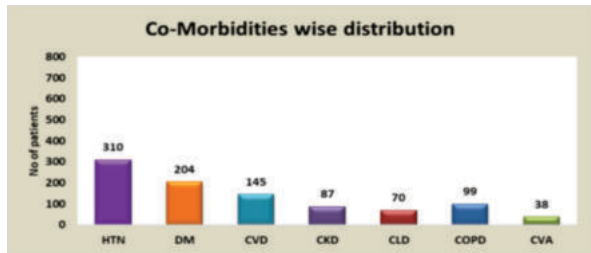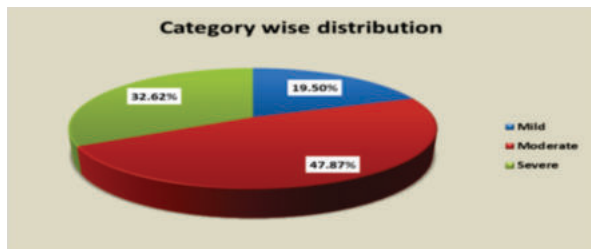| • | >7 days | 227 (30.71 %) | 227 (30.71 %) | <0.0001 |

Figure 1:

Figure 2:
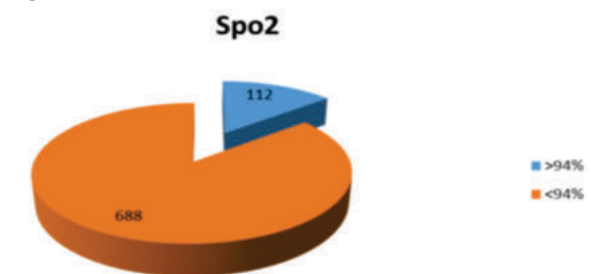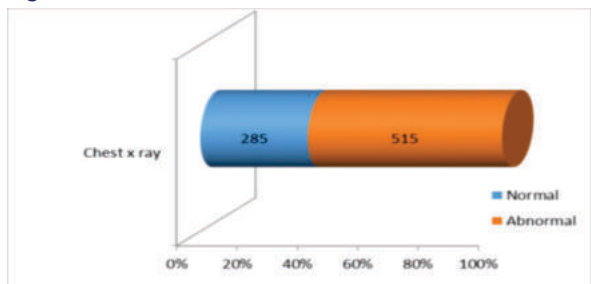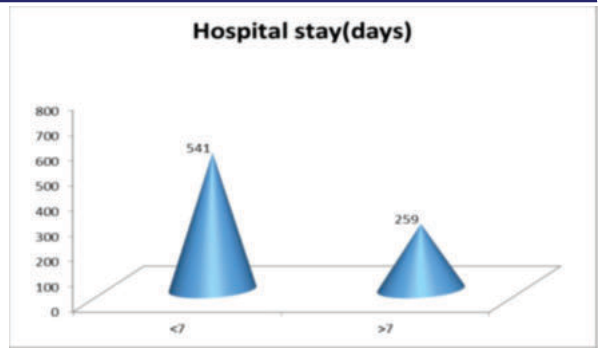

Figure 3:

Figure 4:

Figure 5:

Figure 6:

Figure 7:

DISCUSSION:

In the present study, it was found that mean age COVID-19 patients was **48.79** which was similar to others study .Moreover, the results of our study illustrate that the risk of severe disease gradually increases with age starting from 41-50 years. In the present study, it was found that 64.37% of male COVID-19 Pneumonitis were predominantly higher than female COVID-19 Pneumonitis (36%) . In the present study, COVID-19 Pneumonitis patients with Co-Morbidities found such as HTN was in 38.75% then DM patients 25.5% and 18.12% of CVD patients were comparable to other indian studies by **Punzalan FER et al**, **Anand MP et al**and **Dave M et al** with higher in patients.In our study, people with comorbidities such as diabetes, cardiovascular diseases, hypertension, chronic respiratory conditions (COPD), and chronic kidney disease developed multiple symptoms requiring hospitalization and oxygen support. However, 61.25 % of cases had no comorbidities, implying that the comorbidities predispose to disease severity rather than acquiring infection.In the present study, COVID-19 Pneumonitis patients with common presenting complains have found such as Fever was vastly higher in 76% then Cough patients as 73.62% and Dyspnea in 65.25% of patients which was comparable with **Hossain I et al**, **Anand MP et al** and **Zuala S et al** and followed by the less common manifestations such as chest pain(19.87%),fatigue(16.75%), sore throat (15.62%), Anosmia,Ageusia and Diarrhea/GI symptoms . Although the relative transmissibility (R0) of the asymptomatic cases is lower than the symptomatic cases, still the identification of the asymptomatic cases is epidemiologically important as they mark the existing transmissibility of the virus in the community and serve as overt sources of infection. In the present study, it was found that COVID-19 Pneumonitis patients were categorized as Mild (19.5%), Moderate (47.87%) and Severe (32.62%) patients respectively which was comparable to other studies such as **Anand MP et al** with higher patients in moderate group. In the present study, due to biochemical parameters, it was found that anemia in 70 (8.75%), Leucopenia in 38 (4.75%), Leukocytosis in 177 (22.12%), thrombocytopenia in 107 (13.37%), Acute hepatitis in 302 (37.75%), high INR in 158 (19.75%), high Creatinine in 182 (22.75%), high D dimer in 363 (45.37%) and high CRP in 339 (42.37%) respectively. Similarly, the study by **Dave M et al** have found thatCBC revealed leukocytosis in (6.25%) patients, leucopenia in (20.98%) patients, lymphopenia in (12.05%) and thrombocytopenia in (14.28%) patients. (09.80%) of patients had impaired RFT, (6.69%) patients had raised total bilirubin, (16.96%) of patients had raised AST and (9.37%) patients had raised ALT whereas (41.07%) patients had elevated alkaline phosphatase. Elevated serum CRP, ESR, LDH and CKMB was present sequentially in (65.17%), (82%), (91%) and (93.60%) patients respectively.In another study, **Rahar S et al** have found that Anemia was present in (36.5%) patients. Leukocytosis was noted in (15.3%) a patient of which lymphopenia was noted in (41.2%) patients while neutrophilia was noted in (26.5%) patients. Twenty-two (12.9%) patients had thrombocytopenia. However, it was noted that PT and

aPTT were increased in only 25% and 16.6% of the patients. Among the inflammatory markers, procalcitonin was increased in 100%, LDH in 96%, and ferritin in 75% of the patients, respectively.Moreover, the study by **Ghimire P et al** have found that Complete blood count reports showed that 50.5 % of the patients have absolute lymphocyte count < 1800 /cumm, the lower limit ofs normal for adults, of which 16% had a value < 800/cumm. AST and ALT was elevated among 67.2% of the patients. D-dimer reports were available for only 73.9% of the patients with a median value of 880 ng/mL, among which 76% had D-dimer elevated with 54% of them having a level > 1000 ng/mL. Of 93 patients who had CRP measured at admission, 70(75.3%) had a CRP value > 20 mg/L. The median CRP value of those patients was 73.7 mg/L.In the present study, mean Chest X ray was abnormal in 64.37% patients including Unilateral (28.93%)/ Bilateral infiltrates (35.44%). Similarly, **Rahar S et al** have found that the chest X-ray was normal in 35.3% of the patients while bilateral infiltrates were noticed in 49.4% and pneumonia was present in 14.7% of the patients. In another study, **Punzalan FER et al** have found that Chest X ray was abnormal in (51.2%) patients including Unilateral infiltrates (22.0%)/ Bilateral infiltrates (29.3%). In the present study, mean duration of hospital stay was 5.91 $\pm$ 1.43 days. Similarly, **Rahar S et al** have found that mean duration of the hospital stay was 15.05 $\pm$ 7.86 days ranging from 3 to 48 days. . In another study, **Punzalan FER et al** have found that the median duration of hospitalization was around 12 days.In the present study, mortality rate was found 7.62% among of 800 patients. Similarly, **Rahar S et al** have found that Out of the 170 patients, 20 died, giving a mortality rate of 11.8%.. In another study, **Punzalan FER et al** have found that the mortality rate was 16.9%, predominantly in the older age group.

CONCLUSION:

This study shows the various range of COVID 19 presentation varying from mild to severe pneumonia. Lymphocytopenia, and elevated biomarkers with peripheral opacities in chest X-ray helps to assess the prognosis. The disease typically presented as a viral pneumonia involving both lungs, with 86% of cases requiring oxygen therapy. Old age and patients with multiple co-morbidities are associated with poor prognosis.So, this study provided the spectrum of clinical presentations and host-related factors in outcome of COVID-19 which may help in decrease the burden of disease, minimize social disruption, and reduce the economic impact associated with a pandemic. Early detection, admission, and treatment of individuals with comorbidities and elderly would increase the recovery from the disease, thereby reduce mortality.As COVID 19 virus genome is persistently evolving, further study is required.