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Demographic and clinical profile of RT-PCR confirmed severe acute respiratory syndrome coronavirus 2 patients of Chhindwara, Madhya Pradesh

Dr. Purti C. Tripathi
Associate Professor, Department of Microbiology, Chhindwara Institute of Medical Sciences, Chhindwara, Madhya Pradesh, India. Pin code – 480001
Corresponding author email: drpurti@gmail.com

Dr. Himanshu Singh
Demonstrator, Department of Microbiology, Chhindwara Institute of Medical Sciences, Chhindwara, Madhya Pradesh, India. Pin code – 480001
Email: himanshusingh230688@rediffmail.com

Rahul Kumar Suryawanshi
Department of Microbiology, Dr. Harisingh Gour Vishwavidyalaya, Sagar (M.P.) & Department of Microbiology,RT-PCR Virology Laboratory, Chhindwara Institute of Medical Sciences, Chhindwara, Madhya Pradesh, India. Pin code – 480001
Email: suryawanshi2311@gmail.com

Dr. Ritesh Upadhyay
Assistant Professor, Department of Community Medicine, Chhindwara Institute of Medical Sciences, Chhindwara, Madhya Pradesh, India. Pin code – 480001
Email: drritesh311@gmail.com

***Abstract*---**Background - Globally, over 2.3 million people were infected with Severe Acute Respiratory Syndrome Coronavirus 2 worldwide leading to a global pandemic with mortality rates ranging from 1.4% and 5%. Clinical manifestations of Severe Acute Respiratory Syndrome Coronavirus 2 include asymptomatic carriers, mild upper respiratory tract infections, severe viral pneumonia, multiple organ failure, acute respiratory distress syndrome and death. The present study conducted to describe the demographic and clinical characteristics in RT-PCR confirmed Severe Acute Respiratory Syndrome Coronavirus 2 cases. Material and Methods - Between October 2020 to December 2020, 264 RTPCR confirmed Severe Acute Respiratory Syndrome Coronavirus 2 patients were analyzed for demographic and clinical characteristics. Throat and nasal swabs

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were collected for qualitative detection of nucleic acid. Results - Among 264 patients, mean age was 51.9 ± 15.9 standard deviation years, 72.34% were males, 65.53% patients admitted in isolation ward and 34.46% patients in ICU. The values of Q1, Q2, Q3 and Q4 were 56 (21.21%), 99 (37.5%), 86 (32.57%) and 23 (8.71%), respectively. Common symptoms were Cough 87 (33.0%), Breathlessness 69 (26.1%) and Fever 60 (22.7%). The highest fatality rate 16.5% was seen in age group of 61-75 years. Significant difference was found in deaths and age *p* value (0.001). Conclusions - Demographic and clinical characteristics of RT-PCR confirmed cases admitted in hospital were reviewed. Increased prevalence was found in older age patients and male gender. Cough and fever were the most common presenting symptoms. No significant difference in mortality in relation to Cycle threshold was found.

***Keywords*---**COVID-19, SARS-CoV 2, demographic, clinical characteristics, cycle threshold, mortality.

Introduction

In early December 2019, an outbreak of pneumonia with an unknown cause emerged in cluster of patients with community acquired pneumonia in Wuhan, Hubei (China). The outbreak was confirmed to be caused by a new Coronavirus infection. On 10 January 2020, International Committee on Taxonomy of Viruses (ICTV) named the virus as Severe Acute Respiratory Syndrome Coronavirus 2(SARS-CoV-2) causing coronavirus disease 2019(COVID-19) [1]. Later on, On March 11, 2020, World Health Organization (WHO) had declared it as a pandemic [2]. WHO report states that as on May 24, 2021, 166,346,635 confirmed cases and 3,449,117 deaths were recorded with the still increasing numbers worldwide [3]. Globally, over 2.3 million people were infected worldwide leading to a global pandemic with mortality rates ranging from 1.4% and 5% [4]. Clinical manifestations of COVID-19 include asymptomatic carriers, mild upper respiratory tract infections, severe viral pneumonia, multiple organ failure, acute respiratory distress syndrome and death [4, 5]. Insidious clinical course is seen in few cases that progress from mild illness to severe disease with complications occurring in second week. Disease severity is associated with multiple factors including old age, male gender, hypertension, diabetes mellitus, cardio vascular diseases, lymphopenia. Several studies are done to understand the association of risk factors with severity of COVID- 19 [5].

The Indian Council of Medical Research (ICMR) recommended Real-time reverse-transcriptase PCR (RT-PCR) based tests approved by the US FDA EUA/CE-IVD kits, under intimation to Drug Controller General of India (DCGI) and Ministry of Health and Family Welfare (MoH&FW). The FDA EUA/CE-IVD approved RT-PCR kits are highly specific and detects the presence or absence of SARS-CoV-2 viral nucleic acid and thus directly confirms viral infection in a human sample. Other molecular methods such as virus antigen or serological antibody testing are currently recommended for use only in research settings and not in clinical decision-making (https://www.who.int/news-room/commentaries/detail/advice-

on-the-use-of-point-of-careimmunodiagnostic-tests-for-covid-19). RT-PCR remains the mainstay modality for detection of SARS CoV-2. In RT-PCR, cycle threshold (Ct) value is the number of cycles required for a sample (target viral gene) to amplify and cross a threshold to be considered as positive. Ct value is inversely proportional to the viral load present in the patient. Very limited studies have been done to know the association of Ct value with disease mortality reported [6-9]. A few studies have been published with limited data that described the clinical and demographic characteristics of RT-PCR confirmed COVID-19 cases. Therefore, the present study conducted to describe the demographic, baseline co-morbidities, clinical characteristic and outcomes in RT-PCR confirmed COVID 19 cases reported by Virology laboratory, Chhindwara Institute of Medical Sciences (CIMS), Chhindwara, Madhya Pradesh, India.

Materials and Methods

Study design and participants

This was an observational study carried out during October 2020 to December 2020 at CIMS, Chhindwara. A total of 264 hospitalized patients with RT-PCR confirmed SARS CoV-2 infection admitted in CIMS Hospital, Chhindwara during the earlier described period were included in this study. All the RTPCR negative cases of COVID-19 and confirmed positive cases admitted other than CIMS hospital, Chhindwara were excludedfrom this study. All the consecutive, non-duplicate samples were included in the study. This study was reviewed and approved by the Institutional Ethical committee, Chhindwara Institute of Medical Sciences (CIMS), Chhindwara, Madhya Pradesh (IEC no. CIMS/Ethics Committee/2022/623).

Data collection

ICMR Specimen Referral Form for COVID-19 (SARS-CoV2) and patient's medical record were used for data collection. The medical records of all RT-PCR confirmed COVID-19 patients admitted in CIMS hospital, Chhindwara and records from Virology laboratory, CIMS, Chhindwara, Madhya Pradesh between October 2020 to December 2020 were analysed. Information of various variables collected for analysis was: demographic characteristics such as age and gender. Clinical characteristics such as admitted facility, admitted unit, date of admission, date of discharge or death, clinical symptoms including fever, cough, breathlessness, body ache, nasal discharge, sore throat, and chest pain were recorded. Findings on examination included vitals such as pulse, body temperature, SPO_2 levels, co-morbidities including hypertension (blood pressure), diabetes mellitus (blood sugar levels), oxygen support and mechanical ventilation requirement were also recorded. Throat and nasal swabs were collected from suspected patients of SARS-CoV2 for qualitative detection of nucleic acids from these specimens and sent to Virology laboratory, CIMS, Chhindwara according to ICMR guidelines [10].

RTPCR assay for SARS-CoV-2

Throat swabs and Nasal swabs from the suspected SARS-CoV-2 patients were collected in viral transport medium (VTM) according to the ICMR guidelines [10].

All the samples were packed in triple layer packing and transported to the Virology laboratory with cold chain. All the specimens were tested as soon as possible on reaching the Virology laboratory. Quant Studio™ 5 Real-Time PCR System (Applied Biosystems, USA), was used for performing viral testing of the SARS-CoV-2 suspected specimens. MagMAX Viral RNA isolation Kit (Thermo-fisher, USA) was used for Viral RNA extraction. Detection of SARS-CoV-2 by RT-PCR assay using SARS-CoV-2 RT-PCR kit was used as protocol provided by the manufacturer. Depending on the amplification of the targeted genes such as E gene, N gene, ORF1ab gene, RdRp gene, S gene genes results were reported as positive and negative. Positive and negative controls were included in each RT-PCR experiment. Ct values for targeted genes were recorded in case of all the positive results. For analysis purpose, Ct values were divided into different quartiles (Q1, Q2, Q3 and Q4), where Q1 quartile consisted of Ct value < 22.9, Q2 quartile with Ct value between 23.0 and 27.9, Q3 quartile with Ct value between 28.0 and 32.9 and Q4 quartile with Ct value > 33.0 [9]. All the experiments done in triplicates and values represented as ± standard deviations.

Kits and reagents

For viral RNA extraction, MagMAX Viral/Pathogen Nucleic Acid Isolation Kit (MVP I) (Thermo-fisher, USA) was used. RTPCR kits such as Genes2me (India), Covidsure (India), Meril (India), Q-line (India) and Taqpath (USA) were used for COVID-19 detection. All the other reagents were molecular grade and purchased from Hi-media, India.

Statistical Analysis

Individual study parameters were recorded in the Microsoft Office Excel sheet. Data presented as percentages, mean, standard deviations and chi square test. *p*-values with a significance level of <0.05 were recorded as statistically significant. Descriptive statistics were analyzed by Sigma plots (10.0 versions) and Origin 7.0 software.

Results

A total of 264 RT-PCR confirmed COVID-19 patients were included in this study during the period of October 2020 to December 2020. The demographic characteristics are shown in Table1.Out of these 264 patients 191 (72.34%) were males and 73 (27.65%) were females. The youngest patient was 4 years old and the oldest patient was 83 years old. The mean age of the participants was 51.9 ± 15.9 SD years.

All the patients were admitted in the hospital, among them 173 (65.53%) patients in isolation ward and 91 (34.46%) patients in ICU and their condition were critical. For RT-PCR sampling, throat swabs (TS) was taken from 235 (89.01%) patients. However, nasal swab (NS) specimen was taken only from 29 (10.98%) patients. All the 264 samples of COVID-19 confirmed positive patients was tested by RT-PCR kit using Genes2Me 155 (58.71%), Q Line 76 (28.78%), Taqpath 15 (5.68%), Covid Sure 12 (4.54%) and Meril 6 (2.27%). Table 2 is showing diagnostic parameters of COVID-19 confirmed patients.

The Ct values of all the COVID-19 confirmed 264 patients were divided into four different cycle quartiles (Q1, Q2, Q3 and Q4). Figure 1 is showing cycle quartile of Ct value of COVID-19 confirmed patients. Among COVID-19 confirmed patients the values of Q1, Q2, Q3 and Q4 were 56 (21.21%), 99 (37.5%), 86 (32.57%) and 23 (8.71%) respectively. Q2 showed maximum number of COVID-19 confirmed (99, 37.5%) and the range of Ct value between 23.0 and 27.9. While Q4 showed minimum number of COVID-19 confirmed (23, 8.71%) and the Ct value > 33.0.

COVID-19 confirmed patients admitted in the hospital showed clinical symptoms (Table 3) such as Cough 87 (33.0%), Fever 60 (22.7%), Breathlessness 69 (26.1%), Body ache 9 (3.4%), sore throat 12 (4.5%), Nasal discharge 5 (1.9%), Chest pain 1 (0.4%). Table 4 is showing vital parameters of COVID-19 confirmed patients admitted in the hospital. Where, Mean±SD Ct value was 26.77 ±4.52, Mean± SD Systolic Blood Pressure was 123.12 ±22.587, Mean±SD Diastolic Blood pressure was 77.11 ±12.501, Mean± SD Pulse rate was 88.90 ±14.478, Mean±SD SPO_2 was 96.10 ±2.989, Mean± SD Temperature was 97.963 ±0.4974 and Mean±SD CT Lung Score was 12.56±3.514. Table 5 is showing t*reatment and clinical outcome* of COVID-19 confirmed patients. Standard oxygen therapy were given to 68 (25.75%) patients, High-flow nasal cannula (HFNC) were given to 19(7.19%) patients, 13 (4.92%) patients were shifted to bi-level positive airway pressure (BiPAP), 18 (6.81%) of the patients were intubated. 15 (5.68%) of the patients were shifted from standard oxygen therapy to BiPAP and 6 (2.27%) of the patients were shifted from BiPAP to ventilator. COVID-19 confirmed patients which were admitted in the hospital among them 248 (93.93%) patients cured and discharged, only 16 (6.07%) patients died. Table 6 is showing correlation of variables and outcome of COVID-19 confirmed patients. The sample was categorized in 6 groups with age range of 15 years in each group starting from 0-15 years until 75 years and above. The highest fatality rate 13(16.5%) was seen in age group of 61-75 years and the lowest fatality rate (6.3%) was noticed in age group of 15-30 years, 31-45 years and 46-60 years. Higher fatality proportion was noticed in older age group. The Chi square result indicated that there was a significant difference between in deaths and age p value (0.001) was less than 0.05. The result accepted the null hypothesis suggesting that the chance of mortality rate increase with the age. Similarly, cycle quartile Q2 and Q3 both showed maximum discharge of COVID-19 confirmed patients from the hospital 92 (37.1%) and 81 (32.7%), respectively, as well as mortality of the old age patients 7 (43.8%) in Q2 and 5 (31.3%) in Q3.

Discussion

Novel Corona virus (SARS-CoV-2) causes viral pneumonia. First case of COVID-19 as pneumonia of unknown origin was detected in December 2019 in Wuhan, China [1]. Prevalence and mortality by COVID-19 cases varies from region to region. Similarly, clinical presentation and demographic characteristics varies from region to region across the globe and also in India. Different ethnic background, age of the patients, immune status and co-morbidities of the patients can affect these varied clinical and demographic conditions of COVID-19 [11]. Thus, the present study aimed to describe the demographic and clinical characteristics in RT-PCR confirmed COVID-19 cases which were reported by Virology laboratory, CIMS, Chhindwara, Madhya Pradesh.

In this study, a total of 264 RT-PCR confirmed COVID-19 patients were included during the period of October 2020 to December 2020. In demographic characteristics age in years, gender of the patient, facility and unit where the patients admitted were included (Table 1). Among 264 patients, 191 (72.34%) were males and 73 (27.65%) were females. In a similar study higher proportion of RT-PCR confirmed COVID-19 male patients have been reported [12]. The reason of male preponderance could be because of males being more actively involved in outdoor activity and tend to travel more compared with females [12]. Difference in immune response in males and females might be another reason where in females showed increased production of $CD4^+$ T cells, $CD8^+$ T cytotoxic cells, B cell immunoglobulin and type 1 interferon thus responded early against COVID-19 as compared with males [13]. In present study, the youngest patient was 4 years old and the oldest patient was 83 years old. The mean ages of the participants were 51.9 ± 15.9 SD years which was comparable with other study [14]. For effective suppression and elimination of SARSCoV-2 virus, the immune system has to perform recognition, alert, destroy and clear of pathogen. All of these mechanisms were dysfunctional and diverse in older age patients [15]. Therefore, in older age patient COVID-19 disease advances rapidlyas compared with young patients. In present study, 173 (65.53%) patients were admitted in isolation ward and 91 (34.5%) patients admitted in Intensive Care Unit (ICU) and their condition was critical. In a similar study, Huang et al. [16] reported 32% of patients were admitted in ICU facility which was comparable with present study.

Pooled nasal and throat swab specimens showed the better diagnosing of SARS CoV-2. Tsang et al. [17] have reported sensitivity of nasopharyngeal swab, nasal swab and throat swab as 94%, 86% 68%, respectively. However, in the present study most of the specimens used for RT-PCR were throat swabs (89.01%) patients. While nasal swab specimens was taken only from (10.98%) patients (Table 2). On the other hand, sputum sample was a better indicator of viral replication in the body than throat and nasal swabs [18]. Although, the sensitivity of throat swab was lower than of nasal swab but discomfort experienced by the patients during nasal swab collection was more than throat swab. In present study, different kind of RT-PCR kits used for COVID-19 testing such as Genes2Me 55 (58.7%), Q Line 76 (28.8%), Taqpath 15 (5.7%), Covid Sure 12 (4.5%) and Meril 6 (2.3%) (Table 2).

The number of cycles required for the fluorescent signal to cross the threshold is cycle threshold (Ct) value. Ct value is inversely proportional to the amount of target nucleic acid in the sample (i.e. the lower the Ct level the greater the amount of targeted nucleic acid in the sample or patient). Choudhuri et al. [9] have been used cycle quartiles (Q1, Q2, Q3 and Q4) for Ct value study of COVID-19 confirmed patients. Similarly, in present study the Ct value was grouped into four different quartiles in which samples were grouped to study the indirect significance of viral load. Under Q2 (37.5%) and Q3 (32.6%) quartile maximum number of COVID-19 confirmed patients recorded while in case of Q1 and Q2 only (21.2%) and (8.7%) COVID-19 confirmed patients recorded, respectively (Figure 1).

COVID-19 mainly affects respiratory system of the infected patient and fever, cough, chest pain, difficulty in breathing were the main symptoms occurred. It

can affect multiple organ system and extra pulmonary symptoms can also be developed. In present study, COVID-19 confirmed patients experienced some common complaints such as cough (33.0%), fever (22.7%), breathlessness (26.1%), body ache (3.4%), sore throat (4.5%), nasal discharge (1.9%) and chest pain (0.4%). Patients with mild and moderate symptoms, and influenza like illness were admitted in isolation wards. While, severe symptoms such as difficulty in breathing, co-morbidities and less oxygen saturation level having patients were admitted in ICU [19].

Vital parameters such as Ct, SBP, pulse rate, DBP, SPO2 saturation, temperature (°F) and CT lung score of COVID-19 confirmed patient was important for recovery. Iroungou et al [19] reported higher chest CT lung score with patients have severe symptoms of COVID-19 and also oxygen saturation was found to be lower in these patients. In present study, Table 4 showed the vital parameters of admitted patients. Similar findings were also observed by Meftahi et al [20] in COVID-19 patients, cytokine storm leads to acute lesions of interstitial lung parenchyma and pulmonary edema. Common chest CT findings observed include ground glass appearance, focal consolidation and crazy paving pattern (showing interlobular and intralobular thickening with multiple ground glass opacities).

Most of the patients admitted in isolation ward were recovered. While, 25.8 % patients required standard oxygen therapy, 7.2 % were given High-flow nasal cannula (HFNC), 4.9% patients were shifted to bi-level positive airway pressure (BiPAP) and6.8% of the patients were intubated and required ventilator support.5.7% patients who required standard oxygen support were shifted from standard oxygen therapy to BiPAP and among them 2.3% of the patients were shifted from BiPAP to Ventilator (Table 5). Shobeiri et al [14] observed that patients with mean 81.53±9.88 PSO_2 level were without respiratory aid devices and 3.1% patients have nasal cannula, 15.6% patients in O_2 support with a simple mask, 46.9%with reserve mask, and 3.1% patients used continuous positive air pressure machines (CPAP). Among these patients 84.37% were intubated while in the present study 2.3% patients were intubated.

In present study, most of the patients (93.93%) cured and were discharged; only 6.1% patients died. The highest fatality rate 16.5% was seen in age group of 61-75 years and Q2 quartile. However, lowest fatality rate (6.3%) was noticed in age group of 15-30 years, 31-45 years and 46-60 years. The Chi square test result indicated that there was a significant difference between in deaths and age p value (0.001) was less than 0.05. The result accepted the null hypothesis and suggested the chance of mortality rate increase with the age. In the present study we did not find any significant difference of mortality with gender and cycle quartile (Table 6). Changes in immune system referred to as immunosenescence and inflammaging occur during aging were the major factors responsible for high mortality rates in older age patients [15].

Ct value could be an indicator of prognosis as suggested by Zheng et al [21] and suggested that respiratory samples of patients with increased viral load had an aggressive course of disease compared with those with mild disease. Quantitative monitoring of viral load in lower respiratory tract samples by RT-PCR can help to evaluate disease progression [18]. Choudhari et al [9] also suggested that Ct

values were inversely correlated with mortality. On the other hand Bullard et al [22] have reported that RT-PCR detected only genetic material of the virus not the infectious virus and its ability to determine duration of infectivity of patients may be limited. Similarly, in the present study we did not find any significant role of cycle quartile on mortality.

Peckman et al [13] have suggested a significantly higher risk of severe disease and mortality in males compared with females. This difference was due to the immune responses as females have more vigorous innate and adaptive immune response, antiviral interferon response. While, in present study no significant difference of mortality was found in gender. Limitation of study is that this is a hospital based study and only those suspected patients who admitted in the hospital were subjected for RT-PCR test. We could not review few clinical parameters of the patients which could reveal the other risk factors and co-morbidities responsible for mortality of patients in COVID-19. This study was conducted during the first corona spike in cases in India.

Conclusion

This study reviewed the demographic and clinical characteristics of RT-PCR confirmed cases admitted in hospital. Increased prevalence was found in older age patients and male gender. Cough and fever were the most common presenting symptoms. We did not find any significant difference in mortality in relation to Cycle threshold. Further study is needed to find out cycle threshold as an independent predictor of mortality. More research is needed with a larger sample size to get more insight in COVID-19 disease.

List of Abbreviations

ICTV - International Committee on Taxonomy of Viruses
WHO - World Health Organization
SARS - CoV-2 - Severe Acute Respiratory Syndrome Coronavirus 2
COVID-19 - Coronavirus disease 2019
ICMR - Indian Council of Medical Research
RT-PCR - Real-time reverse-transcriptase PCR
DCGI - Drug Controller General of India
Ct - cycle threshold
CIMS - Chhindwara Institute of Medical Sciences
HFNC - High-flow nasal cannula
BiPAP - bi-level positive airway pressure
CPAP - continuous positive air pressure machines
ICU - Intensive Care Unit
SBP - Systolic Blood Pressure
DBP - Diastolic Blood pressure
SPO_2 - Oxygen saturation

Declarations

Ethical Approval - This study was reviewed and approved by the Institutional Ethical committee, Chhindwara Institute of Medical Sciences (CIMS), Chhindwara, Madhya Pradesh (IEC no. CIMS/Ethics Committee/2022/623).
Data availability - ICMR Specimen Referral Form for COVID-19 (SARS-CoV2) and patient's medical record were used for data collection.
Competing Interest - The author(s) declare that they have no competing interest.

Author's contribution

PCT has made substantial contribution to conception, design, acquisition, analysis, interpretation, drafting the manuscript. HS has contributed in design, acquisition, analysis and drafting the manuscript. RKS has contributed in analysis, interpretation and drafting the manuscript. GBR has contributed in acquisition and drafting. PP has contributed in drafting the manuscript. All authors read and approved the final manuscript.

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Table 1: Demographic characteristics of COVID-19 confirmed patients

Characteristics	Variables	N (%)
Age group	15 - 30	23 (8.71)
	31 - 45	58 (21.96)
	46 - 60	86 (32.57)
	61 - 75	79 (29.92)
	75 above	13 (4.92)
	below 15 years	5 (1.89)
Mean age	51.9 ± 15.9	
Gender	Male	191 (72.34)
	Female	73 (27.65)
Admitted facility	CIMS hospital	264 (100)
Admitted unit	ICU	91 (34.46)
	Isolation ward	173 (65.53)

Table 2: Diagnostic parameters of COVID-19 confirmed patients

Characteristics	Variables	N	(%)
Specimen Type	TS	235	89.01
	NS	29	10.98
Kit used for COVID Test	Covid Sure	12	4.54
	Genes2Me	155	58.71
	Meril	6	2.27
	Q Line	76	28.78
	Taqpath	15	5.68
Cycle quartile	Q1	56	21.21
	Q2	99	37.5
	Q3	86	32.57
	Q4	23	8.71

Table 3: Clinical characteristics *of COVID-19 confirmed patients*

Symptoms	Occurrence	N (%)
Fever	No	204 (77.27)
	Yes	60 (22.72)
Cough	No	177 (67.04)
	Yes	87 (32.95)
Breathlessness	No	195 (73.86)
	Yes	69 (26.13)
Body ache	No	255 (96.59)
	Yes	9 (3.40)
Nasal discharge	No	259 (98.10)
	Yes	5 (1.89)
sore throat	No	252 (95.45)
	Yes	12 (4.54)
Chest pain	No	263 (99.62)
	Yes	1 (0.37)

Table 4: Vital parameters of COVID-19 confirmed patients

Parameters	N	Minimum	Maximum	Mean	Std. Deviation
Age	264	4	83	51.97	15.921
Mean Cycle threshold (Ct)	264	14.86	36.63	26.77	4.52
Systolic Blood Pressure (SBP)	264	66	189	123.12	22.587
Diastolic Blood pressure (DBP)	264	40	112	77.11	12.501
Pulse rate	264	60	150	88.90	14.478
Oxygen saturation (SPO_2)	264	80	100	96.10	2.989
Temperature (°F)	264	96.6	99.0	97.963	0.4974
CT Lung Score	264	5	25	12.56	3.514

Table 5: *Treatment and clinical outcome* of COVID-19 confirmed patients

Parameter	Outcome	N	Percentage (%)
Oxygen	No	196	74.24
	Yes	68	25.75
High Flow Nasal Cannula (HFNC)	No	245	92.80
	Yes	19	7.19
bi-level positive airway pressure (BiPAP)	No	251	95.07
	Yes	13	4.92
Ventilator	No	246	93.18
	Yes	18	6.81
Outcome	Cured And Discharged	248	93.93
	Death	16	6.06

Table 6: Correlation of variables and outcome of COVID-19 confirmed patients

Variable	Sub variable	Outcome		Test Value
		Cured and Discharged	Death	
Age group	Below 15 years	5 (2.01%)	0	X^2=16.967
	15-30 years	22 (8.87%)	1 (6.25%)	P=0.001
	31-45 years	57 (22.98%)	1 (6.25%)	
	46-60 years	85 (34.27%)	1 (6.25%)	
	61-75 years	66 (26.61%)	13 (81.25%)	
	75 years above	13 (5.24%)	0	
	Total (264)	248 (93.93%)	16 (6.06%)	
Gender	Male	176 (92.1%)	15 (93.8%)	X^2=3.900
	Female	72 (29.0%)	1 (6.3%)	P=0. 079
Admitted	ICU	82 (33.1%)	9 (56.3%)	X^2=3.577
Unit	Isolation Ward	166 (66.9%)	7 (43.8%)	P=0.1
Cycle	Q1	52 (21%)	4 (25%)	X^2=1.402
Quartile	Q2	92 (37.1%)	7 (43.8%)	P=0.6
	Q3	81 (32.7%)	5 (31.3%)	
	Q4	23 (9.3%)	0	
Total		248 (93.93%)	16 (6.06%)	

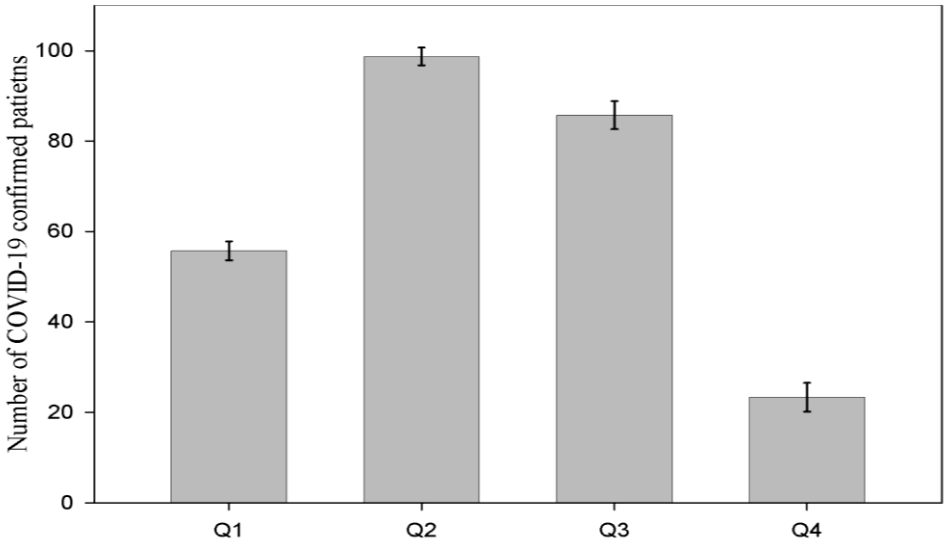

Figure 1: Cycle quartile of Ct value of COVID-19 confirmed patients. Q1 quartile consisted Ct value < 22.9, Q2 quartile with Ct value between 23.0 and 27.9, Q3 quartile with Ct value between 28.0 and 32.9 and Q4 quartile with Ct value > 33.0.