"CLINICAL & BIOCHEMICAL PROFILE OF SARS-CoV-2 INFECTIONS WITH VARIOUS ABO BLOOD GROUPS- A ONE YEAR CROSS-SECTIONAL STUDY"

BY

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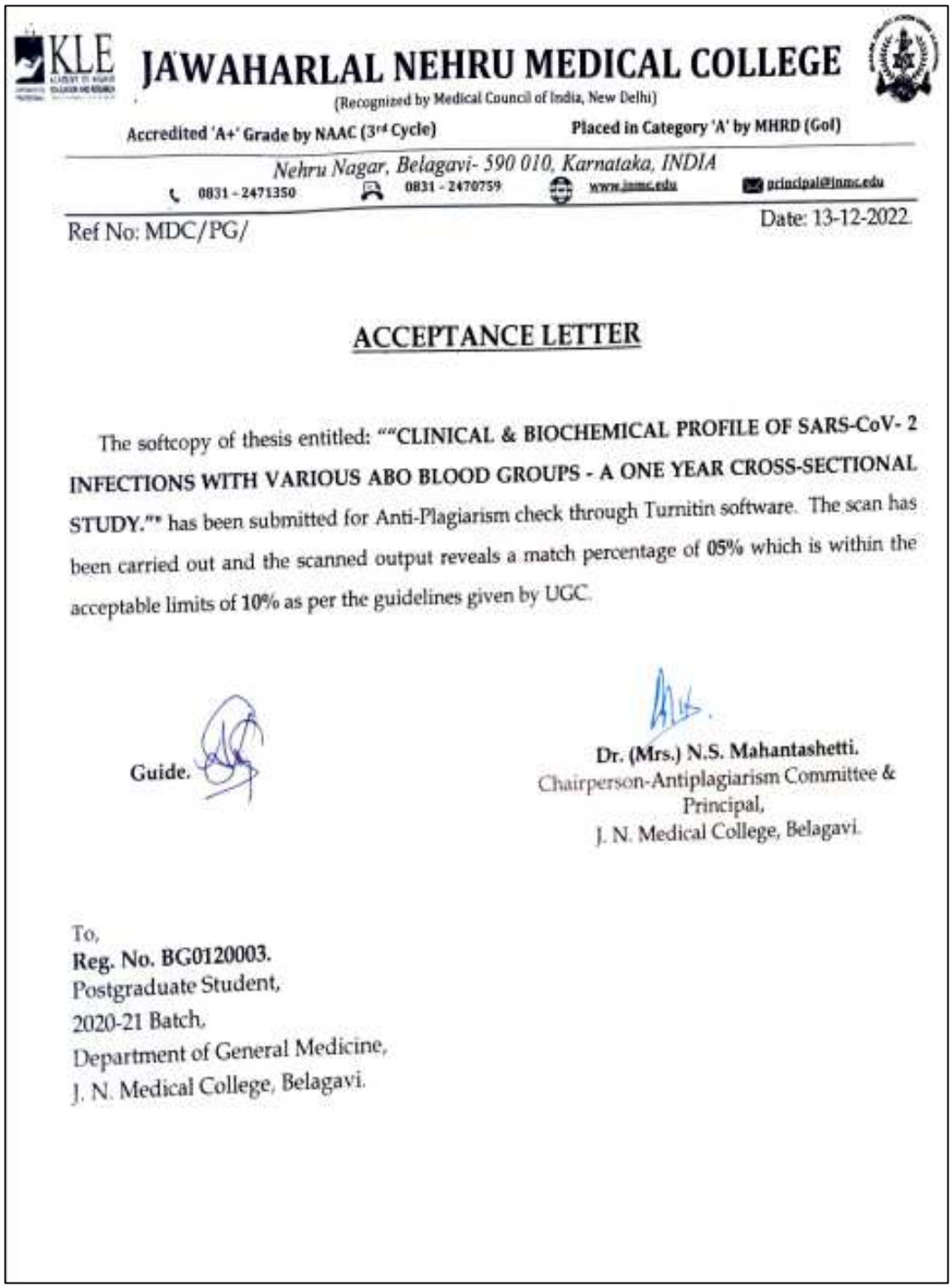

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ABBREVIATIONS

COVID 19	-	Coronavirus disease- 2019
SARS- CoV2	-	Severe acute respiratory syndrome coronavirus 2
RAT	-	Rapid antigen test
RTPCR	-	Real time polymerase chain reaction
CTSS	-	Computerized tomography severity score
DM	-	Diabetes mellitus
HTN	-	Primary hypertension
IHD	-	Ischemic heart disease
CPT	-	Convalescent plasma therapy
CRP	-	C reactive protein
LDH	-	Lactate dehydrogenase
IL 6	-	Interleukin 6
Rh	-	*Rhesus grouping*

ABSTRACT

Introduction

There is a dearth of studies linking blood groups of COVID 19 cases with inflammatory biomarkers and how the course of patient morbidity and mortality changes with different blood groups.

To assess ABO blood group with the clinical, biochemical and prognostic profile of the patient

Materials and methods

As a hospital based cross sectional study directed in KLES Dr Prabhakar Kore hospital, Belagavi, Karnataka, India.

Conclusion

This study found and re-affirmed findings of other studies which found that O blood group was considered protective. It concludes that the incidence in moderate and serious patients is higher in A positive group rather that other blood groups.

It goes on to reveal that the various morbidity factors- need for intensive care, intubation, length of stay and mode of oxygenation- all are more serious in A blood group when compared to O, B and AB groups. The same holds good for mortality, which was found to be higher in A blood group.

Key Words- COVID-19 infections, ABO blood grouping

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INTRODUCTION

In early December 2019, the coronavirus disease (COVID-19) caused by SARS-CoV-2 first emerged in Wuhan province in China [1]. On January 31st, 2020, the World Health Organisation declared COVID-19 a public health emergency of international concern, and on March 11th, 2020, it was finally characterised as a pandemic [2]. As of September 24th, 2020, a total of over 31 million COVID-19 cases and 9,73,000 deaths have been reported globally [3].

The pandemic ravaged through different continents and developed many mutations through its infection course. The alpha variant was first detected in the United Kingdom in early 2020 and was later found be 50% ore transmissible, with increased severity based on hospitalizations and case fatality rates. The beta variant was detected in South Africa and found to be more transmissible. The first surge of COVID-19 infections in India was attributed to the alpha variant.

The second surge of infections peaked months after the 'first wave'- ie; from April 2021 to May 2021- this was attributed to the delta variant- first detected in India. It was both more transmissible and associated with greater morbidity and mortality than previous variants.

ABO blood group is used worldwide and is the blood group system in humans. It includes 4 blood types, which are A, O, B, and AB. Many researchers have found that the ABO blood group partakes pathology for various human disorders.

The ABO blood group contributes for the possibility of many infections in many readings round the globe. Studies conducted have reported the linkage of blood

typing with rotavirus and dengue virus. Some others implicated include the Hepatitis B virus and infamous Norwalk virus.

There are only few clinical studies examining the connection amongst SARS-CoV-2 and the blood groups. Preliminary studies from Wuhan, Spain and some parts of the USA reveal that the incidence of SARS- CoV-2 infection is more in individual of A blood group- suggesting that these individuals are more susceptible. Another study suggests that O blood group might be most protective.

No study has been done linking blood group to the infection among Indian populace. There is a dearth of studies linking blood groups of cases with inflammatory biomarkers and how the course of patient morbidity and mortality changes with different blood groups.

OBJECTIVES

Aim- To assess ABO blood group with the clinical, biochemical and prognostic profile of the patient

Objectives-

1. To assess the levels of baseline prognostic biomarkers amongst those admitted with respective blood group types.
2. To study how clinical profile of the patient varies with the blood group.
3. To correlate morbidity and mortality in SARS-CoV-2 infected patients of various blood groups

REVIEW OF LITERATURE

Virology

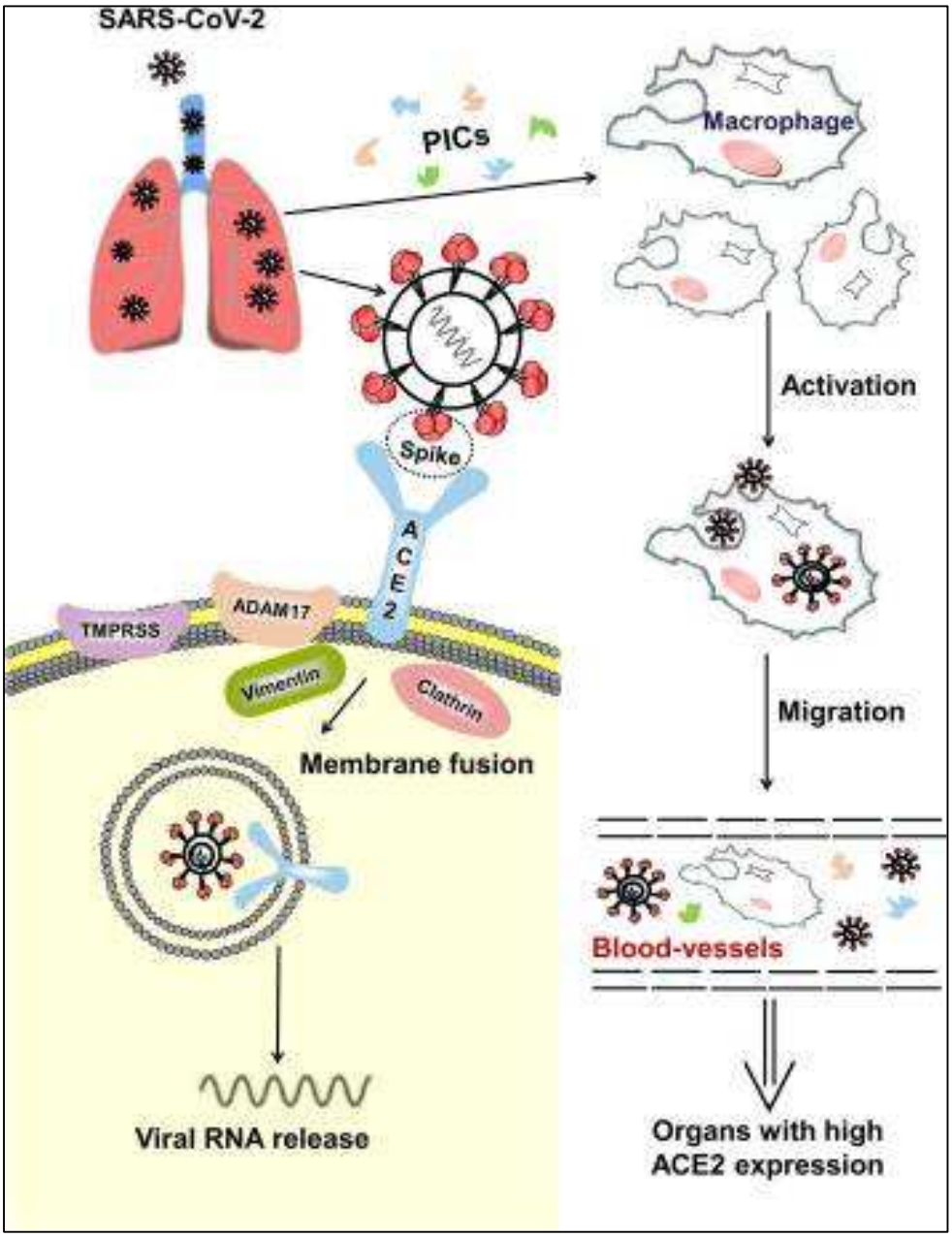
Coronavirus belong to the RNA family of viruses- they are positively stranded and enveloped. After genome sequencing and phylogenic analysis it was found that coronavirus that causes COVID-19 was a betacoronavirus in the same subgenus but different clade as the severe acute respiratory syndrome (SARS) virus. The worldwide governing body then proposed that it be designated as SARS-CoV-2. [4]

The ACE2 enzyme- is the host receptor which acts as the portal of entry for both virus SARS-CoV-2. There exists a domain present in the Spike protein on the virion which binds to ACE2 of the host cell. TMPRSS2 is a cellular protease which also appears to show increased activity to facilitate entry.[5]

The figure 1 clearly demonstrates this- wherein the virion targets the host cells in the lungs. Transmembrane proteins like TMPRSS2- transmembrane protease serine 2 and ADAM17- are also involved. This is a disintegrin metallopeptidase domain 17.

Immune mediation begins with activation of pro-inflammatory cytokines and chemokines.[4]

Figure 1-Model for SARS-CoV-2 entering the host cell [4]



All body organs express ACE2 to various degrees. In respiratory system, its mainly seen in the type 2 alveolar epithelial cells. This is also expressed on myocardial cells, enterocytes, urothelial cells and cells of PCT of kidney.

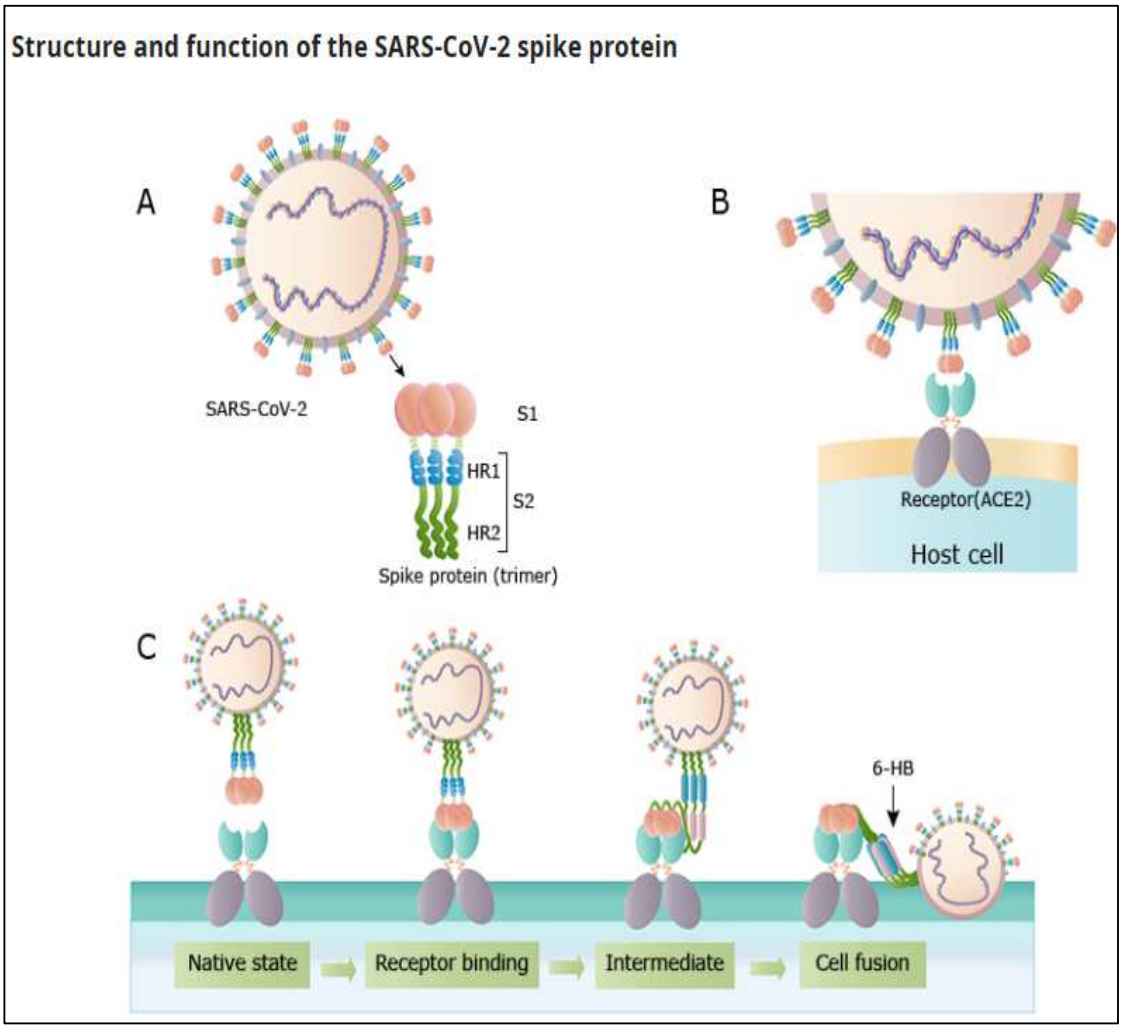


Figure 2 - SARS-CoV-2-LIFE CYLE AND STRUCTURE (MENTIONED BELOW)

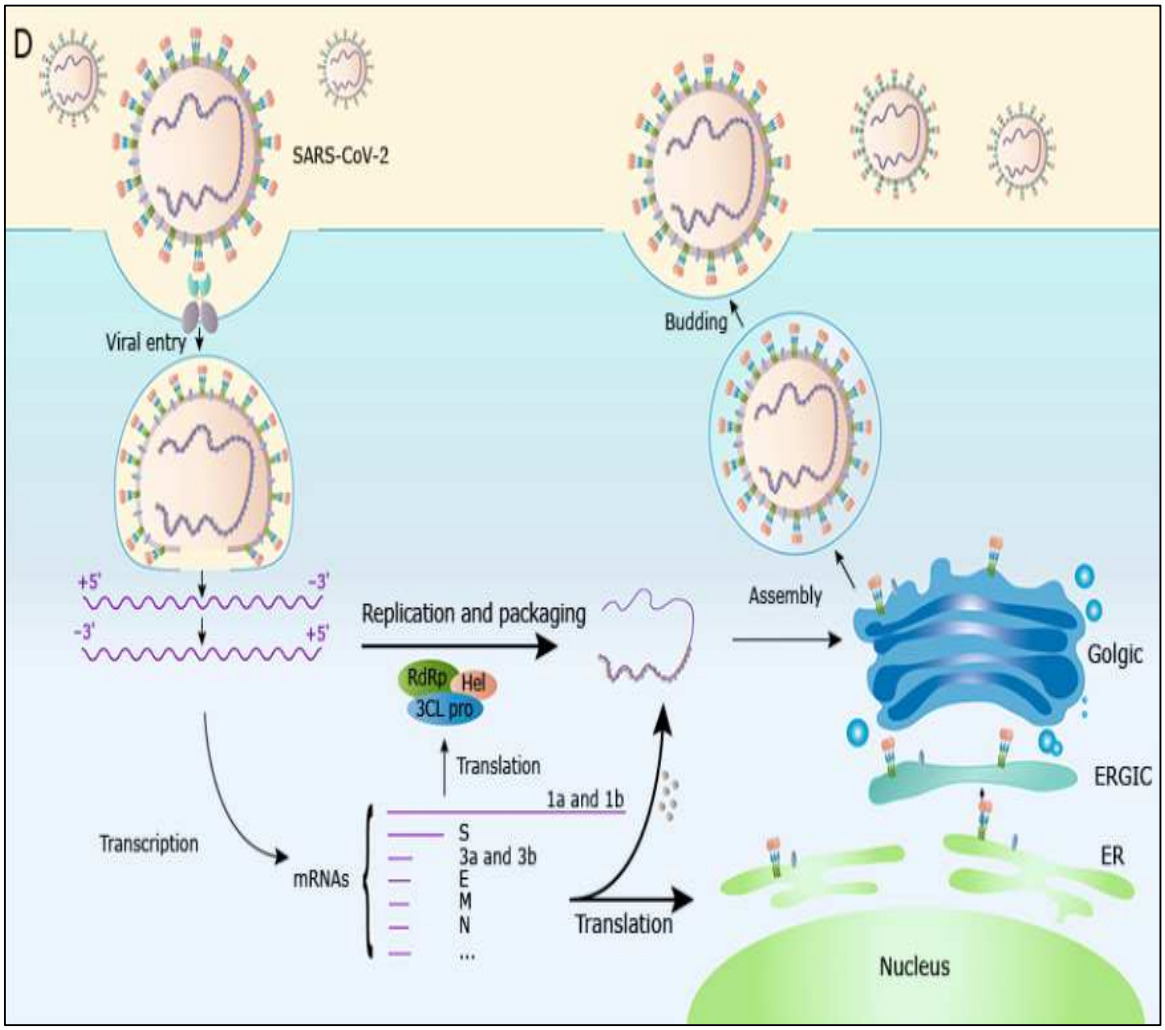


FIGURE 2- (1) This depicts the structure of the protein termed spike (S) protein which involves in entry.

(2) Spike (S) protein binds to the protein ACE2 which is a receptor complex. (3) The spike (S) protein mediates the binding process and play role in virus and cell fusion

(4) The life cycle

A few studies showed that in autopsies of SARS patients, infection can cause multiorgan failure. Critically ill patients with COVID-19 suffered from acute lung injury, acute kidney injury and liver dysfunction. Some patients develop complications like pneurmothorax.

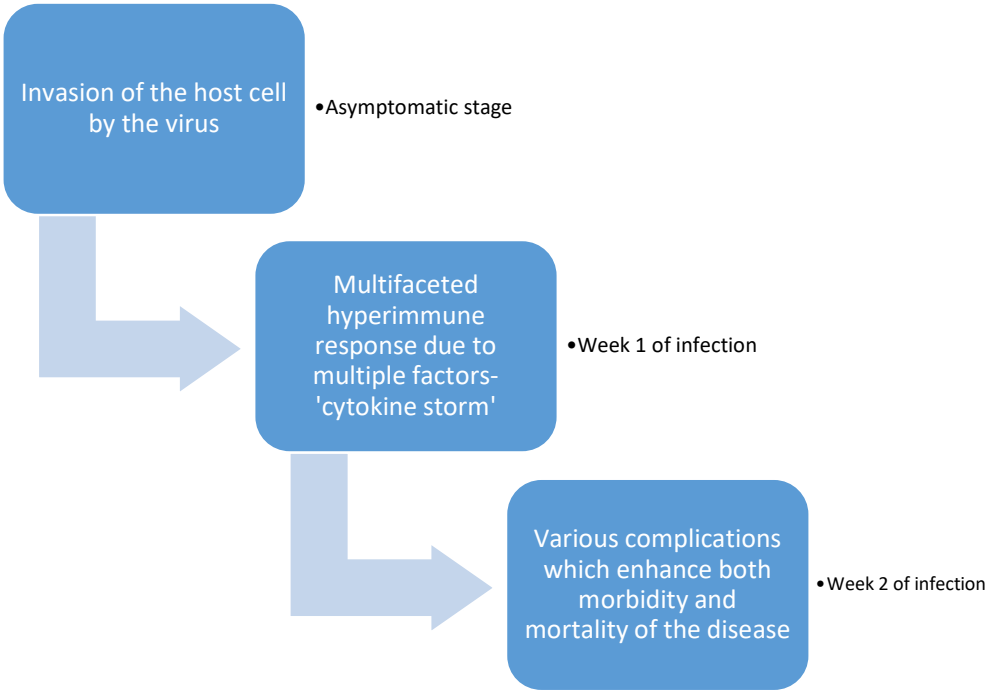


Figure 3- Pathogenesis in a nutshell

Diving into the nitty-gritty details of the pathophysiology, we find that complications of COVID-19 is very much a result of the immune response to the initial insult.

So what are the factors for such grave implications in severe COVID-19?

1. Virus induced inflammatory response
2. Excessive levels of cytokines and chemokines
3. Increasing recruitment of inflammatory cells
4. Diminshed interferon levels
5. Production of auto-antibodies

The 'cytokine storm'

Various clinical studies have positively proven the relationship of COVID-19 disease with levels of inflammatory cytokines.

Some of the well known cytokines are interleukin 1 and tumour necrosis factor alpha. Some studies incriminate monocyte chemoattractant protein also. This flare up is responsible for worsening of the status of the patient and the term 'cytokine storm' was coined by healthcare providers.

Cytokine storm leads to multiorgan dysfunction syndrome.

Commonly assessed levels in India include the pro-thrombotic marker D-dimer and pro-inflammatory biomarkers, namely, C-reactive protein, Lactate dehydrogenase (LDH), Interleukin-6 and Serum ferritin- an acute phase reactant. [6]

Various affections in COVID-19 disease

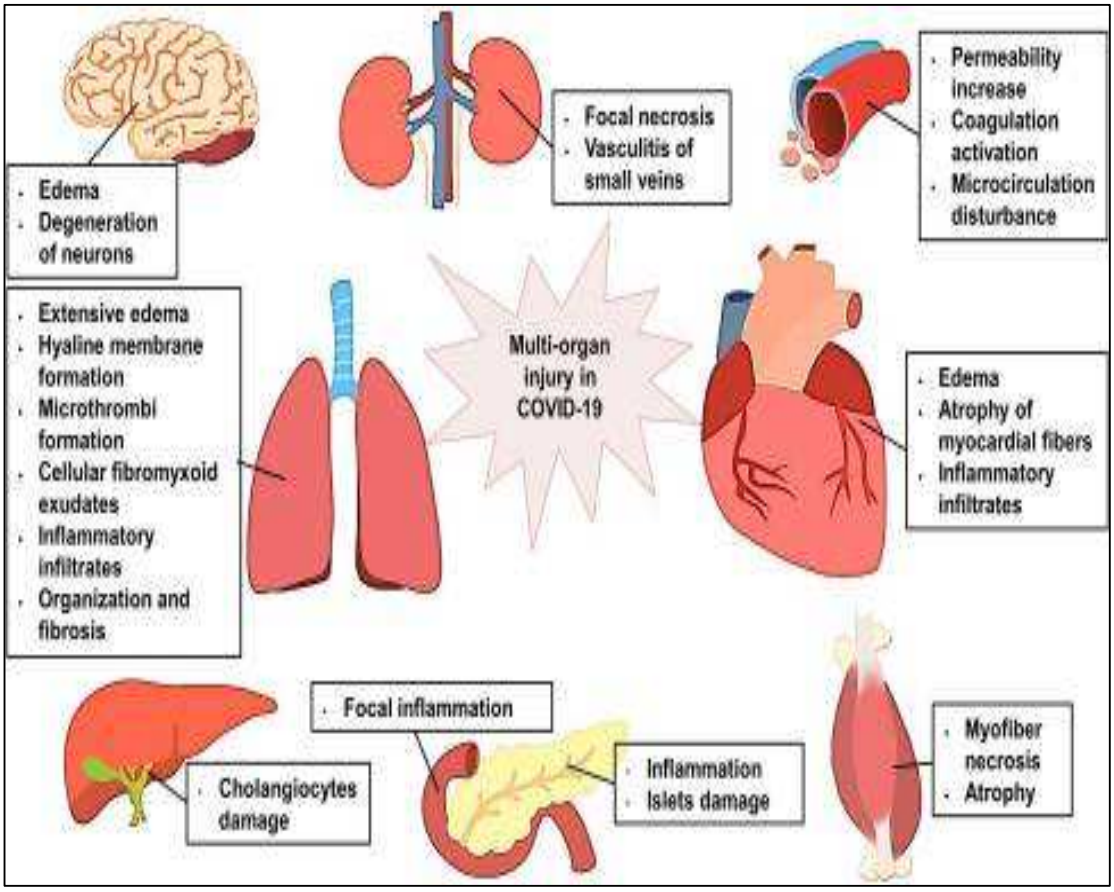


Figure 4-Multiorgan dysfunction in COVID-19 [6]

Symptomology of COVID-19

A multitude of symptoms are seen in COVID-19 disease, but generally, fever, myalgia, nasal congestion and cough are the most common ones in the mild cases. The moderate cases might have an addition of breathlessness to their symptomology. The following table enlists the spectrum of symptoms seen in moderate to severe COVID-19 cases.

This classification was based on the “Ministry of Health and Family Welfare (MoFHW), Government of India”.

It divides COVID 19 disease based on its severity at time of admission based on certain parameters to facilitate admission into appropriate floors to facilitate appropriate inpatient management.

They are classified as 'MILD', 'MODERATE' and 'SEVERE'. The parameters taken into account are respiratory rate and SpO2.

Table 1- Classification of COVID-19 infections based on MoHFW [7]

Mild disease
• Upper respiratory trace symptoms or fever WITHOUT shortness of breath or hypoxia • • ADVICE HOME ISOLATION

Moderate disease
•Any one of- •1- Respiratory rate >= 24/min, breathlessness •2- SpO2: 90% to 93% on room air •ADMIT IN WARD

Severe disease
•Any one of- •1- Respiratory rate >30/min, breathlessness •2- SpO2< 90% on room air •ADMIT IN ICU

Table 2- System wise symptoms in COVID-19

Body system	Symptoms
Generalized symptoms	Fever, anorexia, fatigue, headache, loss of taste and smell
Respiratory system	Cough, expectoration, breathlessness, tightness of chest
Gastrointestinal	Nausea, vomiting, diarrhea, abdominal pain and discomfort
Renal	Proteinuria, hematuria, Acute kidney injury
Ocular	Conjunctival congestion, dry eye, Epiphora
Musculoskeletal	Muscle soreness, backpain
Cardiovascular	Cardiac arrhythmias, hypovolemia, dehydration
Neurological	Headache, dizziness, loss of taste and smell, ataxia, seizures, confusion

The Concept of ABO blood grouping

Historical significance-

Karl Landsteiner, an Austrian scientist, at the beginning of the 20th century, found that red cells of some persons, on exposure to the serum of other persons, got agglutinated. He noted their agglutination patterns and divided them. This discovery earned Landsteiner the Nobel Prize in medicine.

He later clarified about interactions amongst erythrocytes and plasma were interrelated to the manifestation of antigens on RBC. They also depend on antibodies of the plasma of the host body. When Ag-ab binding occurred, the media was agglutinated.

The blood groups were named ‘A’ and ‘B’ initially. The following year based on discovery, both ‘O’ and ‘AB’ were introduced.

So what antigens are found in each blood group?

The immune system initially partakes in formation of antibodies to counter ABO antigens are absent in red cells of the patient. Therefore, a group A person carries anti-B antibodies. Similarly, a group B person carries anti-A antibodies. Patients with blood group O, individuals carry both anti-A and anti-B in plasma.

O blood group is the most recurring globally while, AB is least common.

Table 3-ABO BLOOD GROUP ANTIGENS

Blood group	Antigen on RBC	Antigen in the serum	Genotype
A	A antigen	Anti-B	AA or AO
B	B antigen	Anti-A	BB or BO
AB	A and B antigens	None	AB
O	None	Anti-A & anti-B	oo

BIOCHEMISTRY-

The production of ABO antibodies in serum is enthused when the body detects the 'missing' ABO antigens in microbes.

This loci has been found to have A, B and O – there are the alleleic forms

A allele- It translates glycosyltransferase that produced A antigen

B allele- It translates a glycosyltransferase that creates the B antigen

Compare this to- O allele which encrypts a enzyme without utility, so none of both A or B antigens are synthesized. Here fundamental predecessor- H antigen is left unaffected.

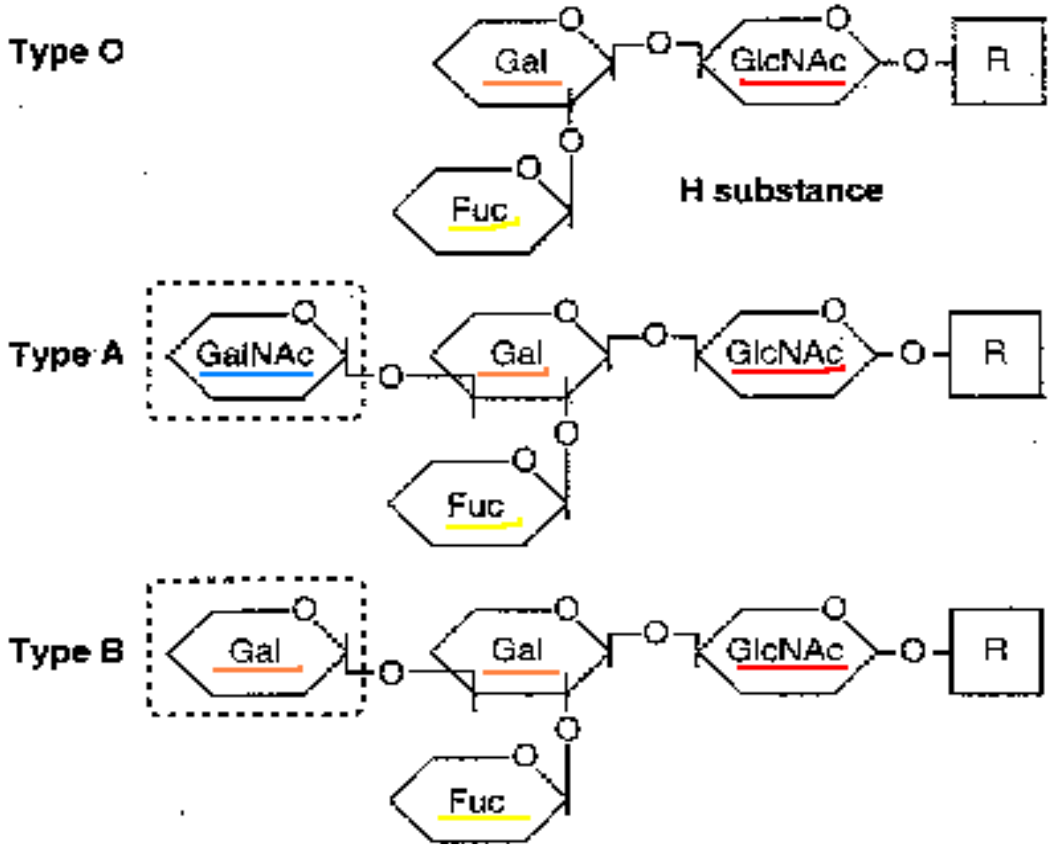


Figure 5- Biochemical structure of antigens in A, B and O blood groups

How are these distributed among the different races?

Blood group O is the most common phenotype in most populations.

Caucasians: group O, 44%; A_1, 33%; A_2, 10%; B, 9%; A1B, 3%; A2B, 1%

Blacks: group O, 49%; A_1, 19%; A_2, 8%; B, 20%; A1B, 3%; A2B, 1%

Asians: group O, 43%; A_1, 27%; A_2, rare; B, 25%; A1B, 5%; A2B, rare

Figure 6- Distribution among different races

What about the antibodies?

- **Antibody type** include IgG and IgM

  Antibody reactivity means the capability of hemolyzing

  Anti-A and anti-B can fix red cells and subsequently stimulate the complements.

- This can lyse the red cells when inside vasculature.

- **Capacity for transfusion reactions?**

Is known to cause an acute hemolytic transfusion reaction.

So what is the function of these antigens?

The functions are unknown.

Based on both ABO and Rh, 8 possible combinations exist-

- A positive
- A negative
- B positive
- B negative
- O positive
- O negative
- AB positive
- AB negative

Around 85% of the population is Rh positive- O positive being the commonest.

Special characteristics of the antibodies type-

- Antibody reactivity- Indicates that these IgG antibodies can hemolyze.
- Possibility of transfusion reaction exists
- Possibility of hemodynamic disease of the newborn exists

Why do we test for blood grouping?

1. Blood grouping with typing are done.
2. Blood grouping is done for the donor and recipient as crossmatching
3. Blood grouping is done in the expecting mother and newborn.

Sample requirements-

- Whole blood or even clotted blood
- Storage at 4 C
- Shelflife- 5 days
- Sometimes, weak subgroups may cause mistyping

Blood grouping reagents-

These help to rapidly identify both the ABO and Rh groups based on the protein existing on the membrane of erythrocytes.

Reagents	Colour	Volumes	T
Anti A sera	Blue	5ml	2-8 C
Anti B sera	Yellow	5ml	2-8 C
Anti-D	Clear	5ml	2-8 C

Figure 6- Blood grouping reagents

Procedure of blood grouping-

1) Inform the patient about the procedure and obtain consent
2) Fingertip to be sterilized before pricking
3) Wait for the finger to dry
4) A sterile lancet can be used to prick. Each of the wells are to get a drop of blood.
5) Now add a drop of both antiserum.
6) Using a applicator stick mix
7) Observe the tiles for formation of fine red granules for a period of 30 seconds to one minute.
8) The following picture depicts the permutations and combinations which might occur
9) The blood group is determined based on the interpretation table mentioned as aforementioned.

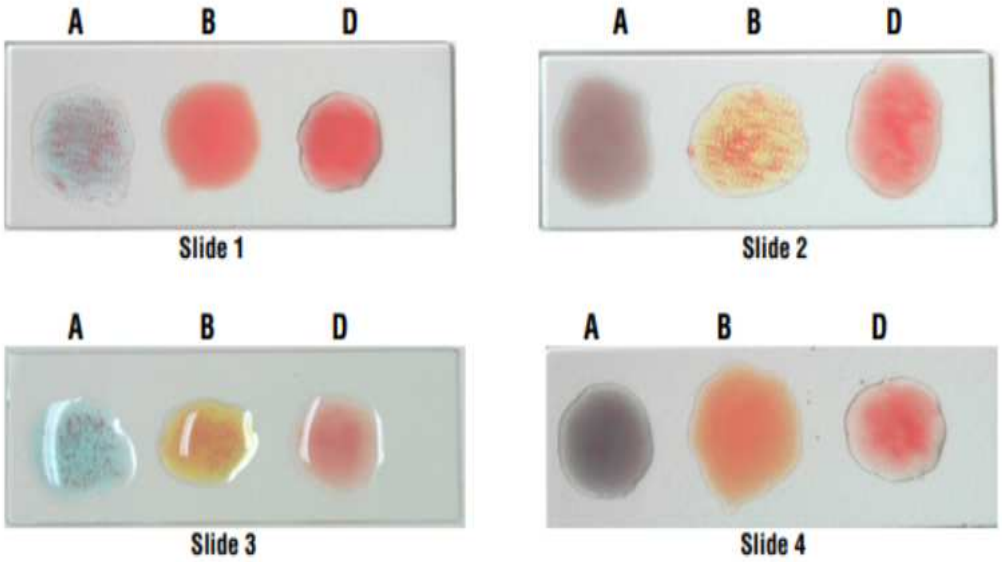


Figure 7- Blood grouping

Table 4- Interpretation of the test

Slide No	Anti A	Anti B	Anti RhD	Blood group
1	-	+	+	A positive
2	+	-	+	B positive
3	+	+	+	AB positive
4	-	-	+	O positive

'+' refers to agglutination

'-' refers to absence of agglutination

The above method is called the 'Slide method' of blood group interpretation. Another method common in practice is the tube method.

Interpretation of the above table-

- When the agglutination is witnessed when blood is variegated with Anti-A serum, then the person has blood group “A”.
- When the agglutination is witnessed when blood is variegated with Anti-B serum, then the person has blood group “B”.
- When the agglutination is witnessed when blood is variegated with Anti-A and Anti-B serum, then the person has blood group “AB”.
- When the no agglutination is witnessed when blood is variegated with Anti-A and Anti-B serum, then the person has blood group “O”.
- When the agglutination is witnessed when blood is variegated with Anti RhD serum, then the person has “+ve” Rh factor.
- No agglutination is witnessed when blood is mixed with Anti RhD serum, then the person has “-ve” Rh factor.

Drawbacks of this procedure-

1) FALSE POSITIVE results-

This is seen when the antisera intermix with each other. Solution- Guarantee so reagents are added appropriately onto the cavity.

2) NO AGGLUTINATION observed-

May occur when the antisera are not stored in proper conditions. Thus always store in a refrigerator (2-8C)

What precautions do we take before this procedure-

- During the experiment make sure to wear plastic gloves.
- Make sure that the slide is sterile and dry before use.

- The lab technician should avoid contacting the antisera to the slide with blood sample.
- The result must be analysed at once after mixing and any anticipated delay in interpretation should be foreseen and avoided.
- In order to prevent a erroneous result avoid the mixing of the antisera reagents when performing the experiment.

How does ABO blood group correlate with disease incidence?

Many studies have previously found that vulnerablity to plethora of diseases can be correlated with other blood groups. Additionally, individuals of AB group were revealed to be more liable to increasing risks of recollection decline.

It was later, deduced that illnesses like obesity, dyslipidemia, primary hypertension and hyperglycemia were also frequent in persons with memory loss. Few studies from around the world showed that blood type O is linked with amplified occurrence of infections like TB, while blood type A is allied with smallpox and other infections like necrotizing fasciitis.

A study based in Ethiopia, pointed out that significantly extraordinary incidence of cancers in persons having group A when compared to O group.[8]

How do different ABO blood groups fare on the advent of SARS-CoV-2 virus? The following studies have shed some light on the same.

A study in Wuhan involving a total of 104 cases and 102 controls demonstrated the existence of a significant link amongst the A blood group and COVID-19. It went to propose based on findings that female participants carrying A group were more prone for COVID-19. This was one of the few early studies to

suggest such a possible association, and on a small population, so more studies were warranted. [9]

A retrospective case- control study on 187 participants done in Hunan province, China concluded that individuals with blood group A had very elevated risk for contracting disease with SARS-CoV-2. On the other end of the spectrum, blood group O was linked with a reduced risk. [10]

Another retrospective study based in Navarro, Spain with 226 participants observed a link between thrombotic complications and ICU entry with blood group. Group B developed more hypercoagulation. Group O had least incidence of requiring intensive care. Very few studies have tried finding associations between thrombotic markers and ABO blood group in COVID-19 patients. The main limitations of this study was their limited population size and that they were limited to a particular geographical area. [11]

Another study from the United States, found high infection rate among non-O blood types. This change was overwhelmingly noted among Rh-positive individuals. AB and B types had higher intubation rates. These were dwindled among A and Rh-negative types. Mortality rates were slightly amplified among type AB individuals and was dwindled among types A, B, and Rh-negative types. [12]

A study from Sudan on 557 participants also supplied clear facts about link of the ABO blood system in populace with COVID-19. Additionally, the research validated that persons with A positive, but not A negative are more defenseless to catching the disease. Other data suggested after analysis that O positive rather than O negative persons are least exposed to features of the contagion. According to the authors, the main limitations of this study is that this is one of the few studies from the

African continent, so more studies are required to determine ethnic factors which might influence results.[13]

An Iranian case control study involving 397 participants found Iranians inclined to fall in the group of AB blood group are more inclined to COVID-19 infections. Similarly, risk is significantly dwindled in those possessing an O blood group.

The researchers had hypothesized that since the AB blood group organizes the least widespread proportion, and A blood group was the second most widespread blood group among the general Iranian public, the pragmatic incongruity between the findings of these two studies can help elucidate dissimilar epidemiological configurations in various communities. More studies were required to determine associations among various ethnicities.[14]

A study based in Vancouver, Canada had some interesting insights into this relationship of ABO blood grouping and SARS-CoV-2 infection. This study compared many parameters, like, mechanical ventilation, need for continuous renal replacement therapy, ICU admission and length of stay and discharge criterion amongst the various blood groups. They came to conclude that severely sick COVID-19 patients having blood group A or AB were linked with an increased risk for necessitating mechanical ventilation, and lengthy ICU stay times when distinguished from individuals having blood groups O or B.[15]

MATERIALS AND METHODS

Source of data

Medical records of patients admitted in KLES Dr Prabhakar Kore Hospital, Belagavi will be used for study purposes

Study design

A cross sectional study

Study period

October 2020 TO October 2021

Sample size

Calculated using universal sampling for all participants who satisfy the inclusion criteria

Formula used for sample size calculation is

$$n = \frac{p(100-p)Z^2}{E^2}$$

n is the sample size required, p is the percentage occurrence of a state or condition (proportion or prevalence), E is the percentage maximum error required, Z is the value corresponding to level of confidence required.

Prevalence of COVID 19 in blood group A is 36.90% [5], with percentage of maximum error as 5% at 95% confidence level sample size is given by,

$$n = \frac{36.90 \times (100 - 36.90) \times (1.96)^2}{10^2}$$

$$n = 89.44 \approx 89$$

Considering 10% attrition, the minimum sample size required is $97.9 \approx 98$.

As sample size increases, the accuracy of result also increases. In this study, 102 subjects are considered.

Sample Method

As a longitudinal hospital directed one year study, all consecutive patients fulfilling the inclusion criteria will be incorporated in the study, statistical analysis will be done by SPSS using descriptive analysis and chi-square test.

Inclusion criteria

- Patients who have consented to take part in the study
- Patients admitted in KLES Dr Prabhakar Kore hospital whose RT PCR OR Rapid Antigen Test for SARS CoV-19 is positive
- Patients with all required data- complete case sheets, ABO group, pro inflammatory biomarkers

Exclusion criteria

- Age < 18 yrs
- Patients with chronic inflammatory diseases which may increase levels of biomarkers- COPD, sarcoidosis, pancreatitis, patients in sepsis due to any other cause.

Methodology

1. The study will begin after ethical clearance from the Institutional Ethics committee and will be conducted during the planned study period.
2. Patients admitted to KLES Dr Prabhakar Kore hospital with a positive SARS-CoV-19 RT-PCR or Rapid antigen test report as per inclusion criteria will be selected.
3. Data collection- As this is a prospective study, with required permissions in hand, currently admitted patient case files were used for the purpose of this research.
4. ABO blood groups were correlated with classified according to clinical profile of patient on admission using GoI and MoHFW COVID-19 classification. The cases will be selected to keep the distribution of blood groups same as that in general population and then further analysis was done.
5. The respective blood groups were assessed for any significant variation in biochemical inflammatory and thrombotic markers- D dimer, CRP, Ferritin, LDH and IL-6.
6. Other clinical data regarding patient status, disease progression, prognostic markers and clinical recover or decline during his/her course at the hospital will be used for the purpose of this study. Some of these include- symptoms and signs at admission, length of stay, oxygen requirement, need for ICU admission, need for ventilator/ intubation and final outcome of patient.

STATISTICAL ANALYSIS

All the data was collected in proformas (attached herein), and entered into Microsoft Excel and analysed as aforementioned. The demographic details of the patients are presented using tables, figures, bar diagrams and summarized as frequency, percentage, mean and standard deviation.

Data is analysed using R software version 4.1.2 and Excel. Approved statistical tests were used. P-value below or equaling 0.05 indicates significance.

RESULTS

Data contains measurements on 102 subjects whose age ranges from 24-86 years with mean age of 57.11 ± 13.26 years. The following table gives the distribution of subjects according to demographic details.

Table 1- Distribution of subjects according to demographic details

Demographic variables	Sub Category	Number of Subjects (%)
Age (years)	21-30	4 (3.92%)
	31-40	10 (9.8%)
	41-50	15 (14.71%)
	51-60	31 (30.39%)
	61-70	29 (28.43%)
	71-80	8 (7.84%)
	>80	5 (4.9%)
	Mean ± SD Median (Min, Max)	57.11 ± 13.26 58 (24, 86)
Gender	Female	19 (18.63%)
	Male	83 (81.37%)

Majority subjects were aged more than 50 years (71.57%). Out of 102 subjects, 83 (81.37%) are males and 19 (18.63%) are females with gender ratio 4.37:1.

The following graph can give a simpler understanding of the same-

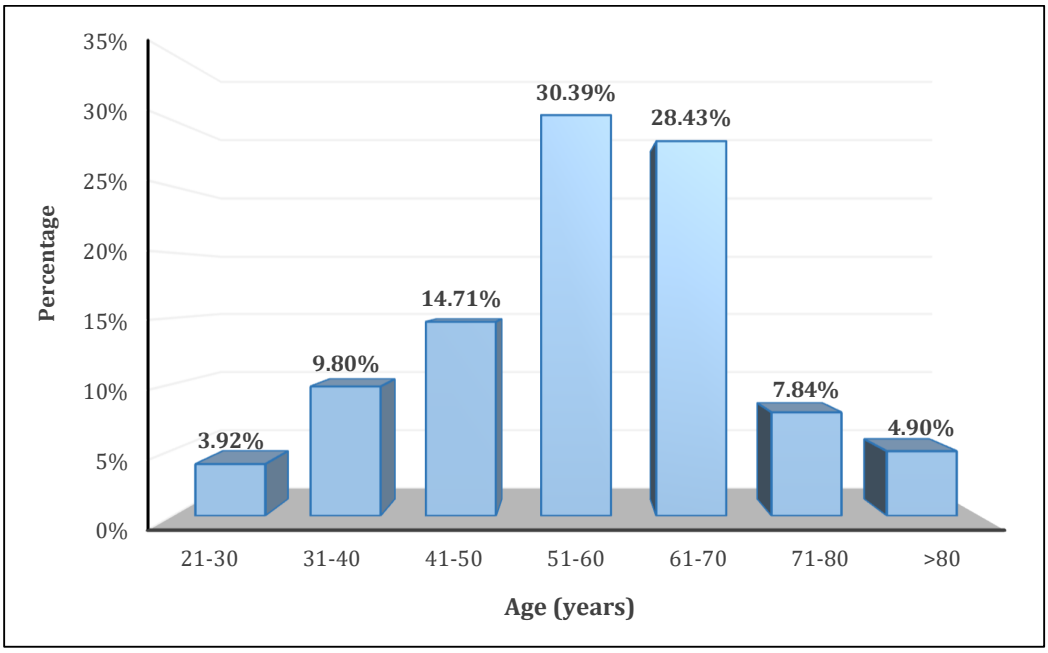


Figure 8- Distribution of subjects according to age.

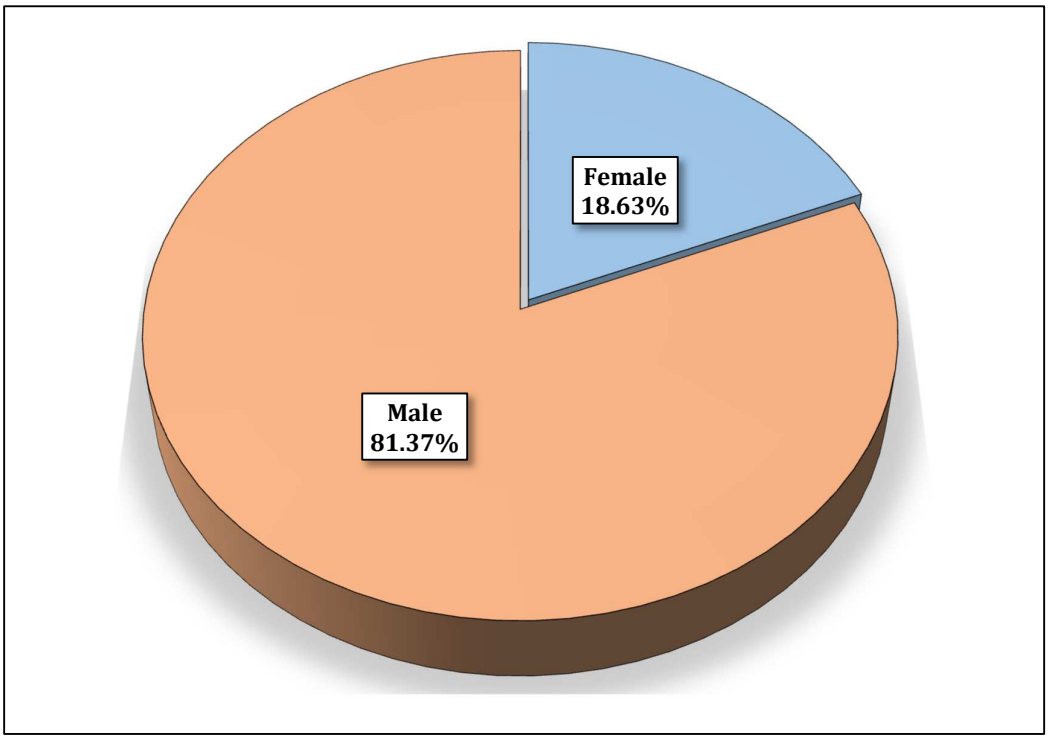


Figure 9- Distribution of subjects according to gender.

How were the different blood groups distributed amongst our study subjects?

Table 2-Distribution of subjects according to blood group.

Blood Group	Number of Subjects (%)
A-	1 (0.98%)
A+	28 (27.45%)
AB-	2 (1.96%)
AB+	7 (6.86%)
B-	3 (2.94%)
B+	18 (17.65%)
O-	5 (4.9%)
O+	38 (37.25%)

Out of 102 subjects, 38 (37.25%) were O+,28 (27.45%) were A+,18 (17.65%) were B+,7 (6.86%) AB+,5 (4.9%) O-,3 (2.94%) B-, 2 (1.96%) AB- and 1 (0.98%) was A-.

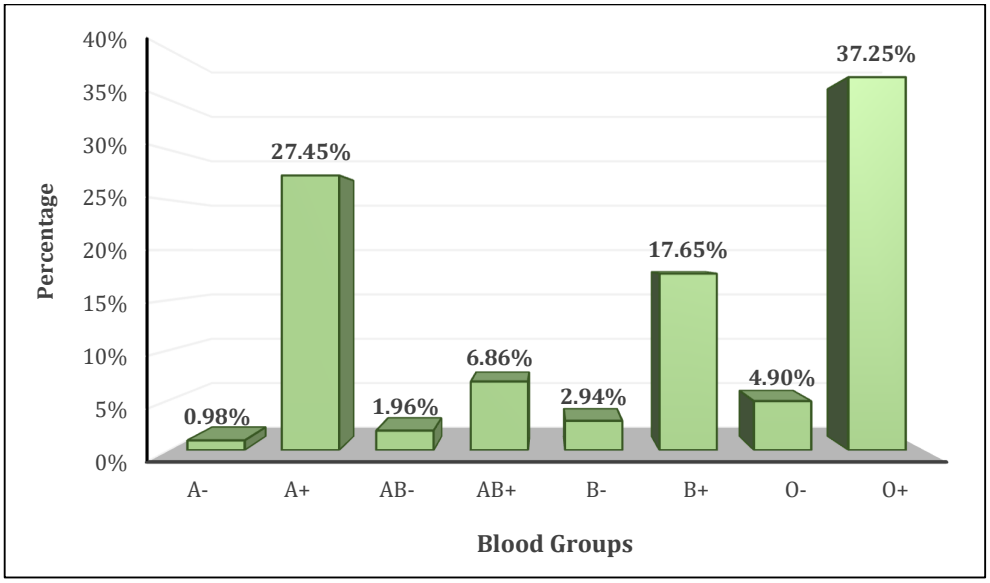


Figure 10- Distribution of subjects according to blood group.

Distribution of subjects taking into account the following parameters

1) **Severity of disease (according to the MoFHW classification mentioned above)**

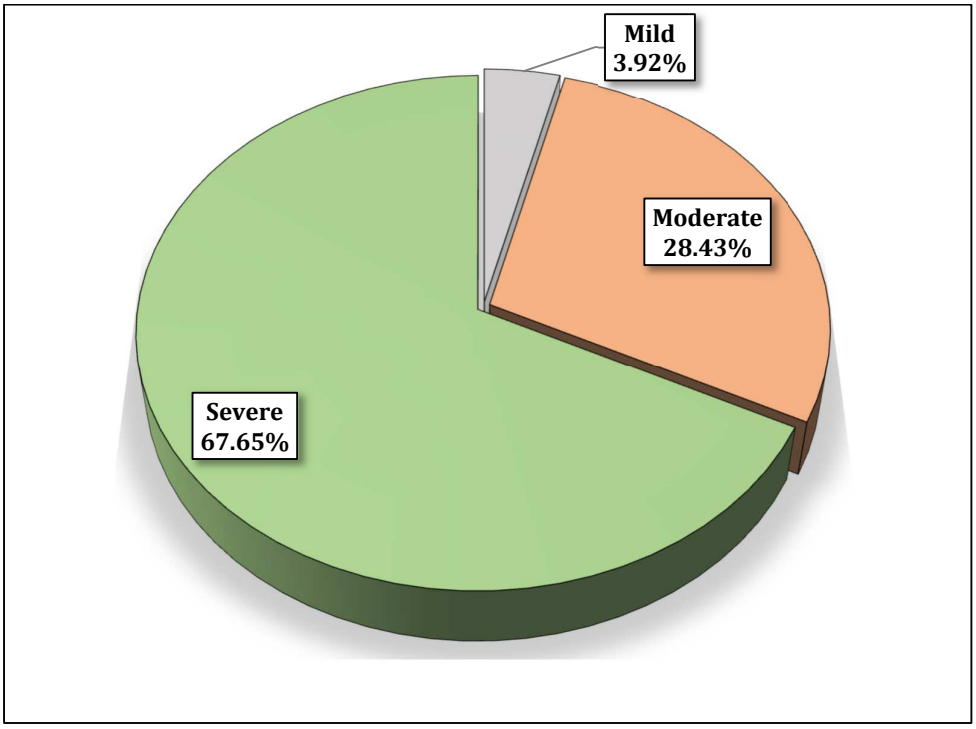


Figure 11- Distribution of patients based on disease severity

All subjects were tested positive in RTPCR test. 69 (67.65%) were infected with severe disease while 29 (28.43%) were in moderate and 4 (3.92%) in mild categories respectively. Most subjects fell in the severe disease category according to MoFHW classification mentioned before. As a result some mode of oxygenation was required in all participants of this study.

2) Mode of oxygenation- Oxygen was supplied via oxygen mask, non re-breathing masks (NRBM) or intubation and ventilation.

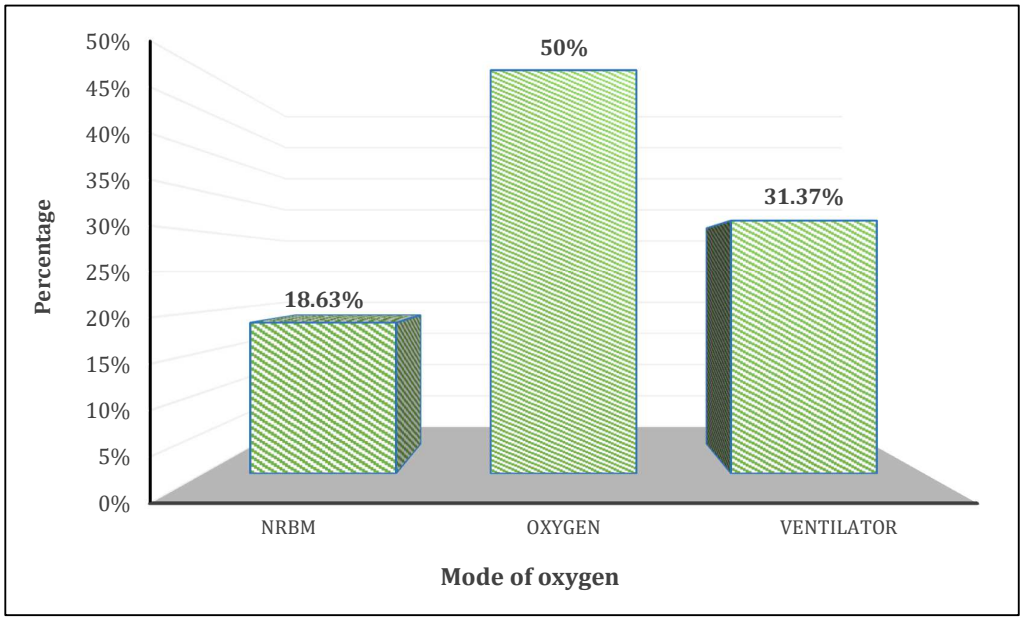


Figure 12- Mode of oxygenation

3) Requirement of admission into intensive care facility

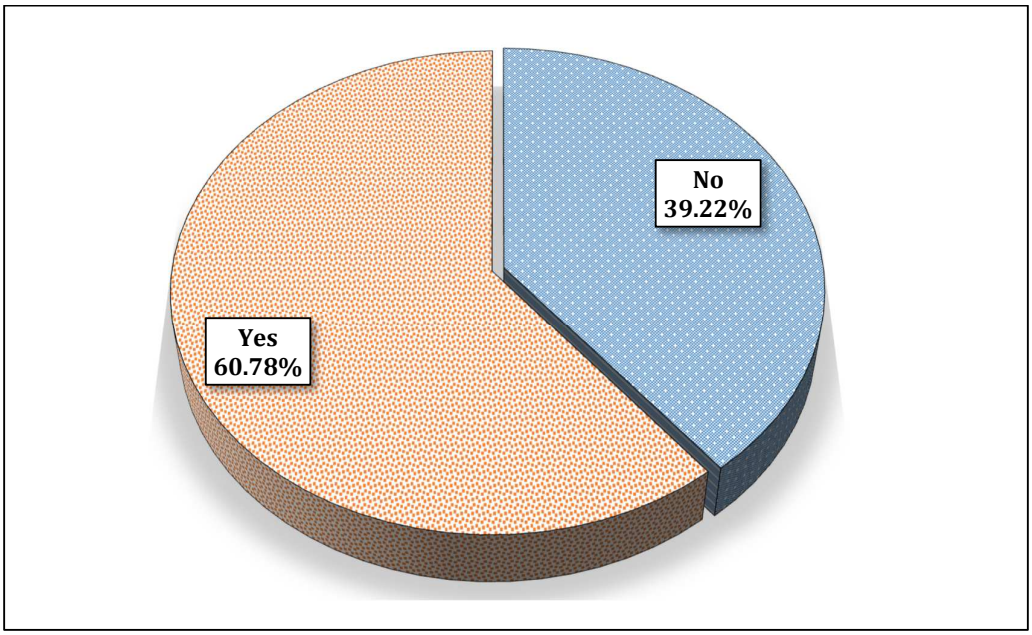


Figure 131- Requiring admission into ICU

4) Needing intubation

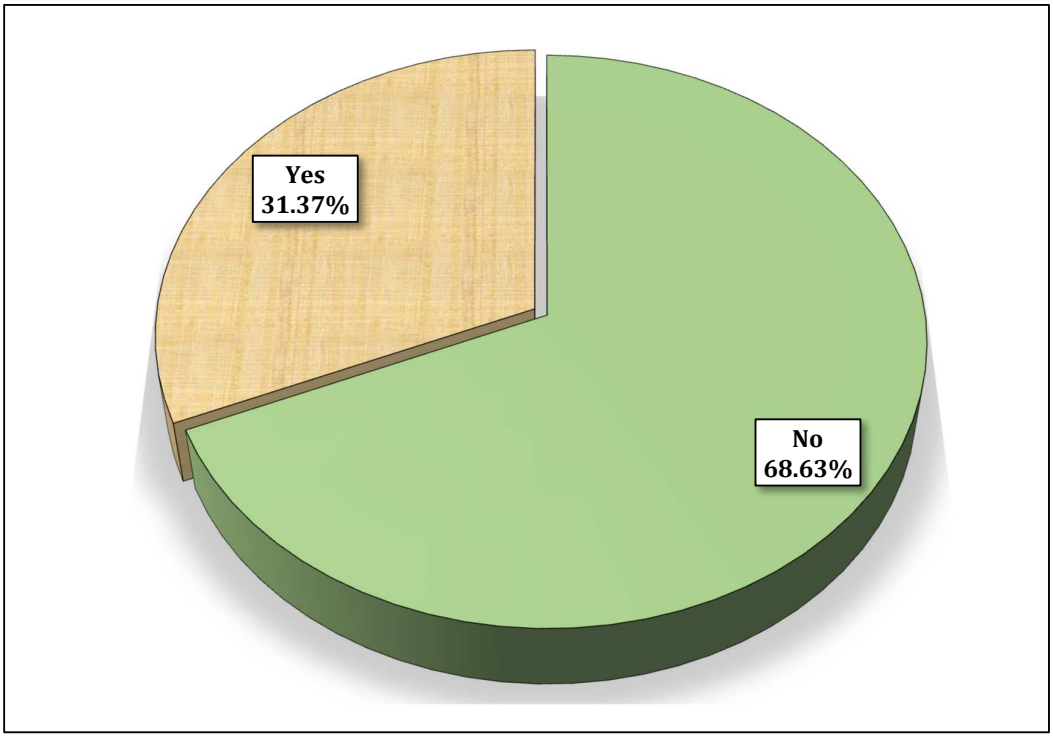


Figure 14- Patients needing intubation

Totally, 62 patients (60.78%) were admitted to ICU. 32 (31.37%) needed intubation with ventilator support. 51 (50%) needed oxygen, 19 (18.63%) had NRBM. Final outcomes groups included those who survived at the end of hospital course, those deceased and those who chose to get discharged against medical advice (AMA). How were the study participants distributed based on the final outcome? The figure below depicts the same.

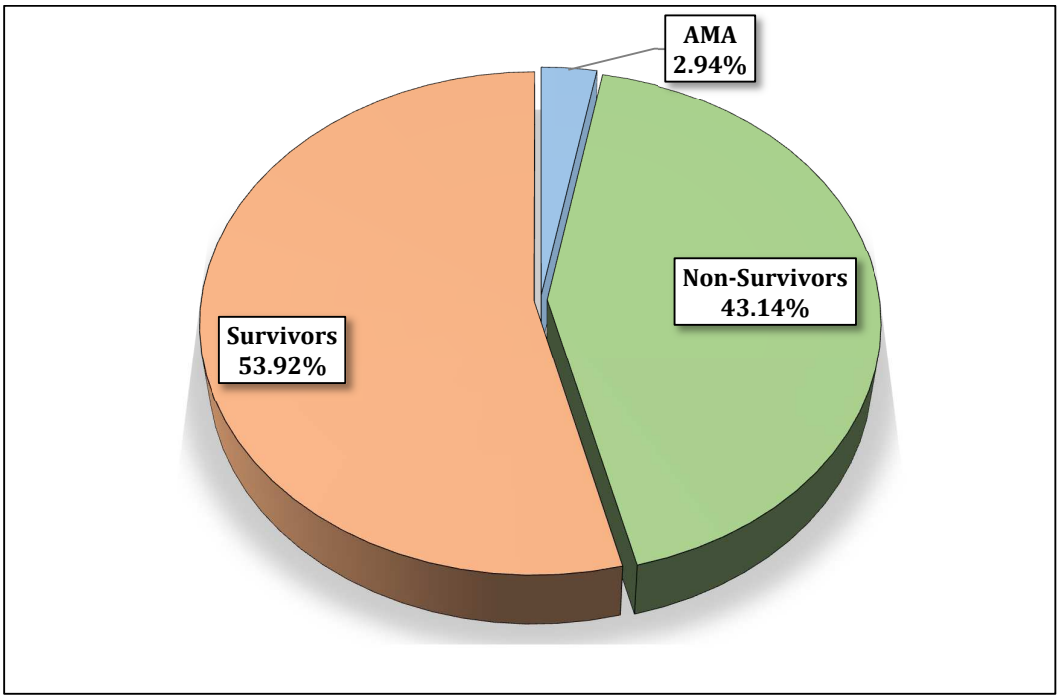


Figure 15- Final outcomes

Parameters such as admission SpO2 (oxygen saturation) and corads severity score were compared of various blood groups, but no significant difference in the distribution of data was obtained.

Prothrombotic and inflammatory markers in various blood groups- The average serum levels for prothrombotic biomarker D dimer and other pro-inflammatory like D dimer, IL-6, hsCRP, LDH (Lactate dehydrogenase) and ferritin were compared to see if levels fluctuated between different blood groups.

It was found that their levels usually tend to be lesser in individuals with O blood group. But from Kruskal Wallis test, we find that, there isn't any difference in the distribution of LDH, D-dimer, IL6, FERR and CRP over blood groups which can be deemed singificant. The following figures demonstrate the same.

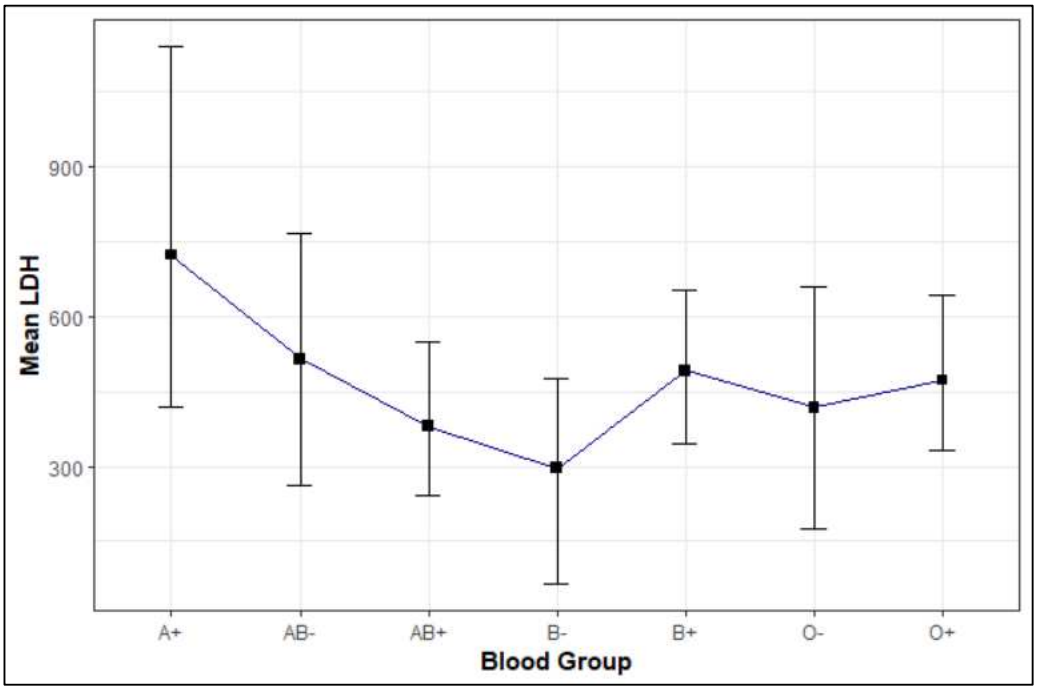


Figure 16- LDH levels over blood groups

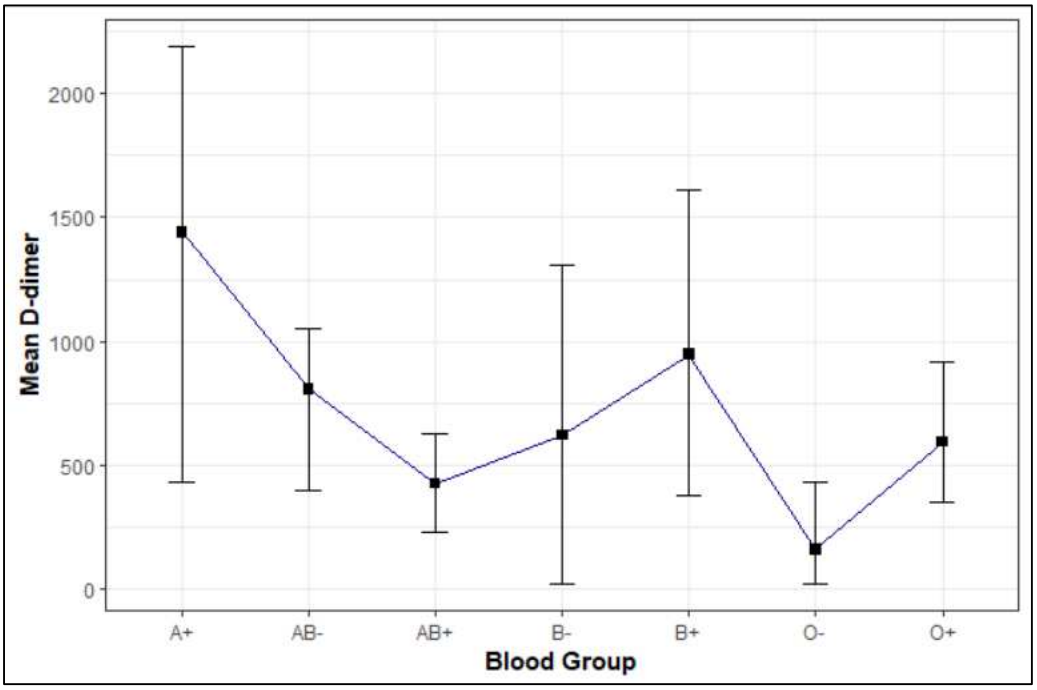


Figure 17- D-dimer levels over blood groups

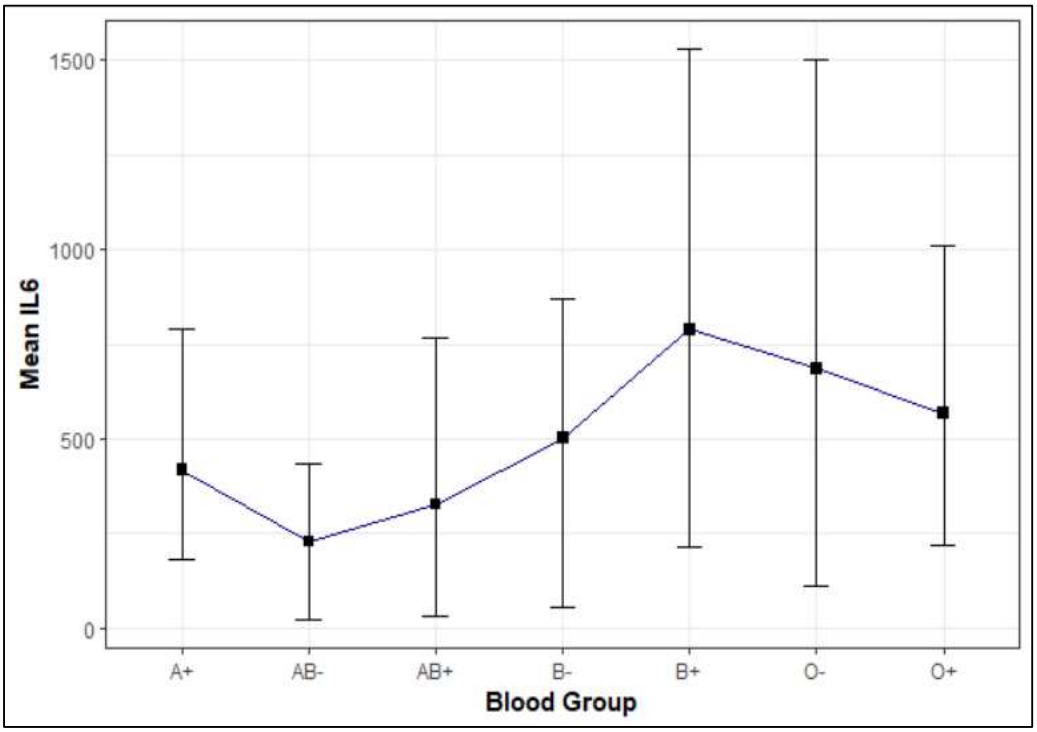


Figure 18- Il6 levels over blood groups

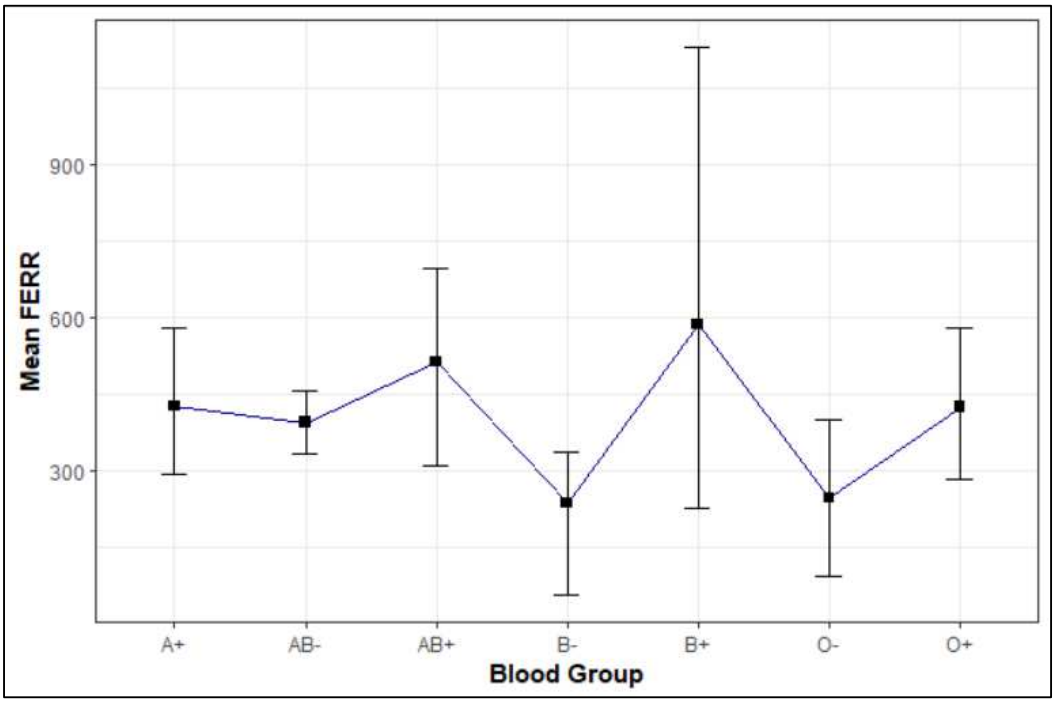


Figure 19- Ferritin levels over blood groups

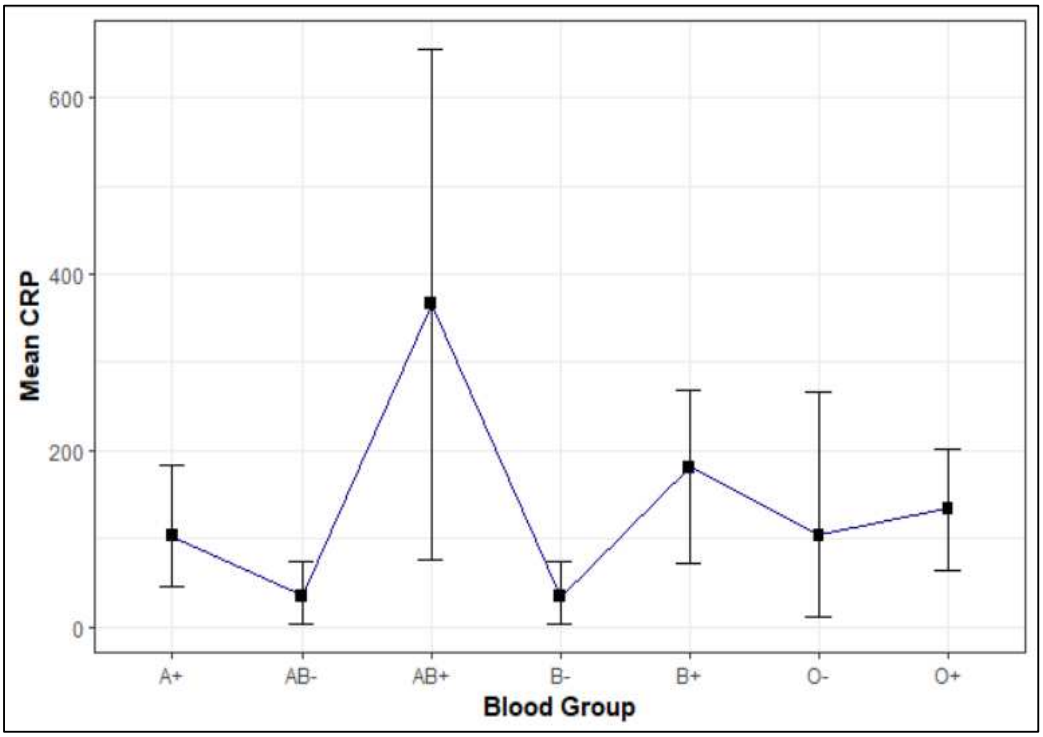


Figure 2- Serum C reactive proteins levels over blood groups

How severe were infections amongst different blood groups?

From other studies, the incidence of severe COVID-19 was seen more in A blood group. But this was not the case in this study, as infections were more evenly distributed, as from Chi square test, it can be said that the distribution of severity over blood groups is not significant statically.

Table 3- Distribution of severity of COVID-19 disease over different blood groups

Severity	A-	A+	AB-	AB+	B-	B+	O-	O+	p-value
Mild	0	0	0	0	1 (33.33%)	0	1 (20%)	2 (5.26%)	0.1874[MC]
Moderate	0	8 (28.57%)	1 (50%)	4 (57.14%)	1 (33.33%)	3 (16.67%)	2 (40%)	10 (26.32%)	
Severe	1 (100%)	20 (71.43%)	1 (50%)	3 (42.86%)	1 (33.33%)	15 (83.33%)	2 (40%)	26 (68.42%)	

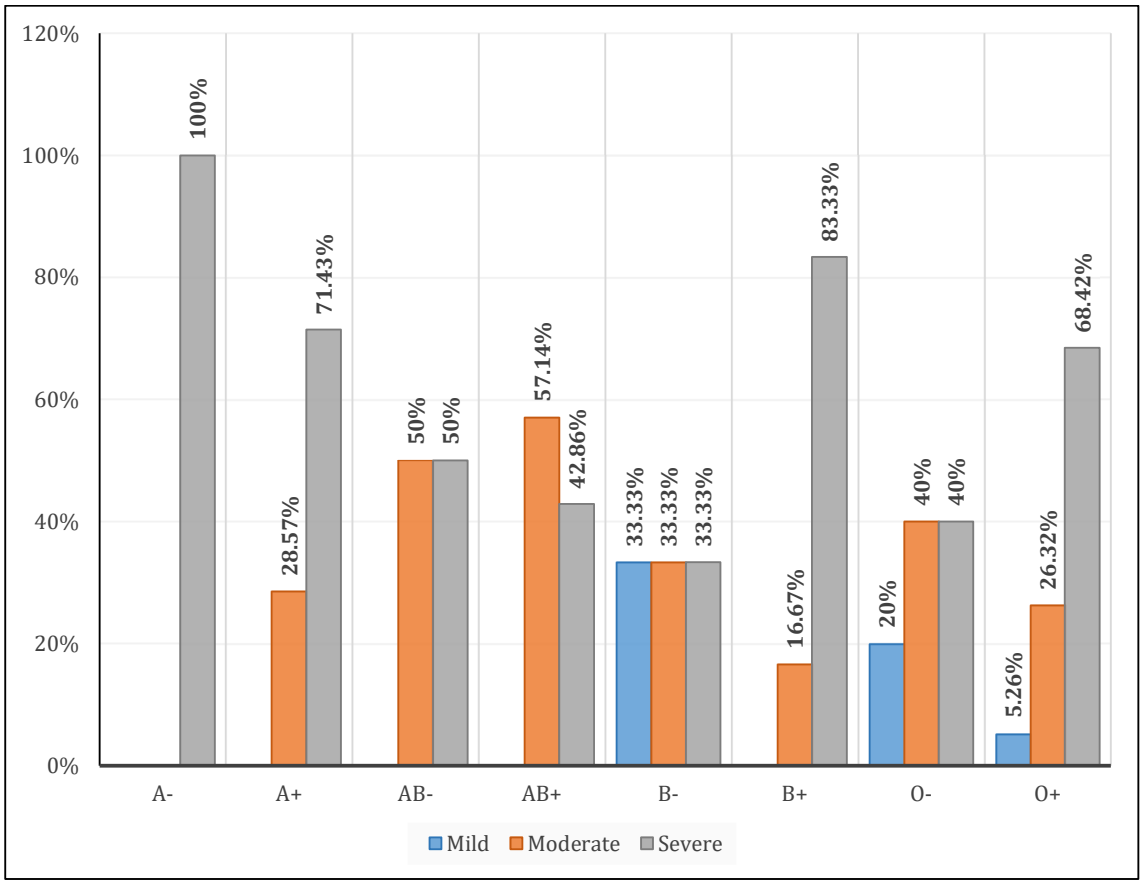


Figure 21- Distribution of severity of COVID-19 disease over different blood groups How do parameters like need for ICU admission, need for intubation and mode of oxygenation change depending on the blood group?

1) Need for ICU admission- From Chi square test, we observed that variation of ICU admission over various blood groups was as the data as given in the table below.

Table 4- Distribution of blood groups in requirement of ICU care

ICU admission	A-	A+	AB-	AB+	B-	B+	O-	O+	p-value
No	1 (100%)	3 (10.71%)	0	1 (14.29%)	2 (66.67%)	6 (33.33%)	5 (100%)	22 (57.89%)	< **0.001**^{MC*}
Yes	0	25 (89.29%)	2 (100%)	6 (85.71%)	1 (33.33%)	12 (66.67%)	0	16 (42.11%)	

2) Need for intubation- From Chi square test, we can say there exists a variability in occurrence of variables in the need for intubation over various blood groups, which was deemed as significant statistically. It is as shown below.

Table 5- Distribution of blood groups in the requirement of intubation

Need of intubation	A-	A+	AB-	AB+	B-	B+	O-	O+	p-value
No	1 (100%)	15 (53.57%)	0	3 (42.86%)	3 (100%)	11 (61.11%)	5 (100%)	32 (84.21%)	**0.006**^{MC*}
Yes	0	13 (46.43%)	2 (100%)	4 (57.14%)	0	7 (38.89%)	0	6 (15.79%)	

3) Modes of oxygenation in different blood groups- Non-rebreathing mask (NRBM), oxygen therapy via masks or intubation and ventilation to assist with respiratory effort. Even though need for higher oxygen supplementation was warranted for non O blood groups, from Chi square test, no significant difference was noted based on the distribution of variables.

Table 6- Distribution of blood groups in the mode of oxygenation

Mode of Oxygen	**A-**	**A+**	**AB-**	**AB+**	**B-**	**B+**	**O-**	**O+**	**p-value**
NRBM	0	10 (35.71%)	0	3 (42.86%)	0	2 (11.11%)	0	4 (10.53%)	
Oxygen	1 (100%)	5 (17.86%)	0	0	3 (100%)	9 (50%)	5 (100%)	28 (73.68%)	0.0505^{MC}
Ventilator	0	13 (46.43%)	2 (100%)	4 (57.14%)	0	7 (38.89%)	0	6 (15.79%)	

4) Outcome of disease vs blood group- From Chi square test, significant difference in distribution of outcomes over blood groups was noticed. Where, survival of O and B blood groups was higher that that observed in A blood group. The data is as in the table below.

Table 7- How outcomes varied amongst different blood groups

Outcome	**A-**	**A+**	**AB-**	**AB+**	**B-**	**B+**	**O-**	**O+**	**p-value**
AMA	1 (100%)	1 (3.57%)	0	0	0	1 (5.56%)	0	0	**0.0075^{MC}***
Non-Survivors	0	18 (64.29%)	1 (50%)	4 (57.14%)	1 (33.33%)	7 (38.89%)	1 (20%)	12 (31.58%)	
Survivors	0	9 (32.14%)	1 (50%)	3 (42.86%)	2 (66.67%)	10 (55.56%)	4 (80%)	26 (68.42%)	

Length of hospital stay based on blood group-

Our study also computed total days of stay and compared among different blood groups. From Kruskal Wallis test, we can say the distribution of length of stay over blood groups shows a significant difference statistically. From post hoc analysis (Dunn's test), we observe that, the distribution of length of stay in O+ is significantly different from A+ (p-value< 0.001), AB+ (p-value = 0.0061) and B+ (p-value = 0.0464).

The median length of stay in O positive blood group was 8 days, 12 days in both O negative and B negative groups, whereas 13 days in B positive, 14.5 days in A positive.

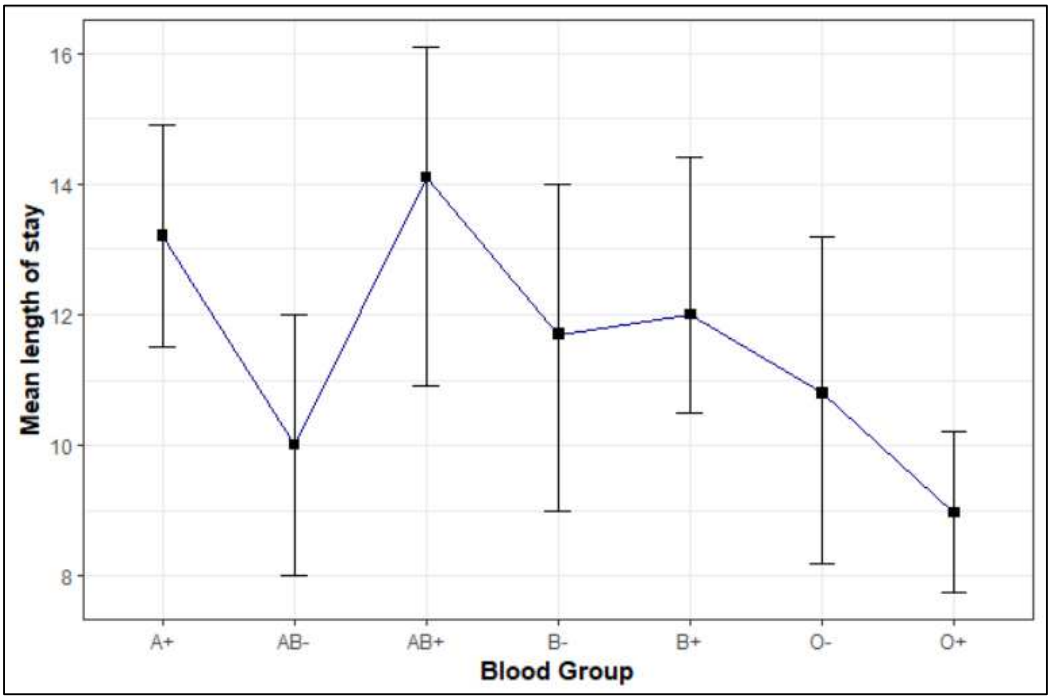


Figure 22- Total duration of stay at the hospital for different blood groups

Comparing variables on the basis of Rh status-

When the levels of mean prothrombotic and inflammatory biomarkers were compared, no significant distribution was found, but it was noted that mean levels were lower in Rh negative groups when compared to positive ones.

Table 8- Levels of biomarkers in Rh positive and negative groups

Parameters	Rh Negative	Rh Positive	p-value
LDH	371.73 ± 277.32 277 (64, 766)	547.8 ± 673.05 427.5 (27, 4677)	0.41^{MW}
D-dimer	386.82 ± 446.98 119 (23, 1307)	917.3 ± 1355.85 456.5 (22, 5000)	0.1073^{MW}
IL6	491.9 ± 665.93 434 (10.95, 2277)	542.45 ± 1127.04 87 (1.5, 5000)	0.8659^{MW}
FERR	253.99 ± 172.17 321.9 (22, 477)	464.72 ± 599.55 345 (22, 4555)	0.1782^{MW}
CRP	66.53 ± 106.6 33 (3, 343)	142.59 ± 172.87 65.9 (2, 676)	0.0583^{MW}

Severity of disease when compared to Rh-

Table 9- Severity of disease in Rh positive and negative groups

Severity	Rh Negative	Rh Positive	p-value
Mild	2 (18.18%)	2 (2.2%)	
Moderate	4 (36.36%)	25 (27.47%)	**0.03998^{MC*}**
Severe	5 (45.45%)	64 (70.33%)	

Monte Carlo simulation, *

From Chi square test, we can see the distribution of severity over Rh- Rh negative tended to manifest in less severe disease according to our study- and this showed significance statistically.

When the data was compared to requirement of ICU admission amongst Rh groups, it was found to be significantly higher in Rh positive participants. (Table 14)

Table 10- Comparison of ICU admission with Rh groups

ICU admission	Rh Negative	Rh Positive	p-value
No	8 (72.73%)	32 (35.16%)	**0.0285^{MC*}**
Yes	3 (27.27%)	59 (64.84%)	

The admission oxygen saturation, need for intubation, mode of oxygenation and hospital length of stay amongst Rh groups did not vary significantly. Nor was there any significant difference in the final mortality related outcomes between the blood groups.

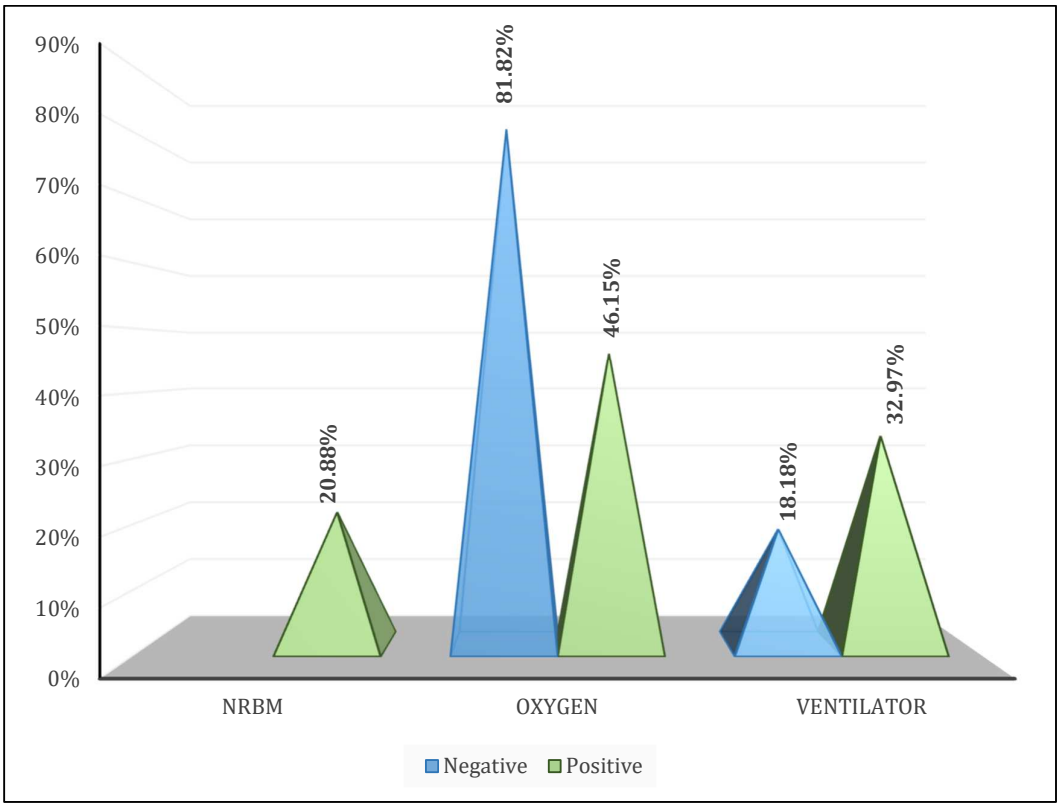


Figure 23- Distribution of subjects according to mode of O2 and Rh group

Table 11-Comparison of outcome with Rh

Outcome	Negative	Positive	p-value
Discharged against medical advice	1 (9.09%)	2 (2.2%)	0.2554^{MC}
Non-Survivors	3 (27.27%)	41 (45.05%)	
Survivors	7 (63.64%)	48 (52.75%)	

DISCUSSION

Since the onset of COVID-19 pandemic, multiple studies across the world have been based on various factors regarding laboratory parameters and treatment of COVID-19. Fewer ones concentrated on etiological/ risk factors.

Studies done show O blood group to have an overall protective effect for both incidence and disease severity. A blood group seems to have the highest risk of both incidence and severity.

Rh positive have shown to be mainly lesser incidence than Rh negative in most studies. Inspite of the prevalence of Rh negative participants being the same as general population, our study showed higher incidence and severity in these populace.

Table 5 depicts the demographic profile of the study populace. Of the 102 participants, 83 were male and 19 female. The mean age was found to be 57 years with a standard deviation of 13 years.

The blood group distribution in general population shows O group to me most common, followed by A followed by B, then AB group. In our study, out of 102 subjects, 38 (37.25%) were O+,28 (27.45%) were A+,18 (17.65%) were B+,7 (6.86%) AB+,5 (4.9%) O-,3 (2.94%) B-, 2 (1.96%) AB- and 1 (0.98%) was A-.

Severity of the disease- As our study was a hospital based study, more severe and moderate infection cases formed a part of study pool. And interpretation of the study was using a pool of hospitalized severe cases, and not mild infections. The exact breakup has been elucidated in Figure 12.

All the participants required oxygen treatment- oxygen masks were most common followed by intubation and ventilation, followed by non rebreathing masks (NRBM) as shown in Figure 13.

Final outcome showed of the total populace, 53.9 % survived and 43.1% died.

Comparing various parameters with the blood group-

Other studies across the globe, have showed that O blood group is more protective and A blood group is least.

Prothrombotic and inflammatory markers in various blood groups- the average serum levels for prothrombotic biomarkers- D dimer and inflammatory biomarkers like IL-6, Lactate Dehydrogenase (LDH) and ferritin were compared to see if levels fluctuated between different blood groups.

It was found that their levels usually tend to be lesser in individuals with O blood group. But nothing specific was found from our study, with regard to biomarker levels in different blood groups.

No relation was found between severity of COVID-19 infection and different blood groups. Perhaps, this could not be determined because our study group involved inpatients- most of whom fell into moderate and severe categories of disease.

Just like few other studies as discussed in the review of literature, it was found that admission into intensive care units and frequency of intubation are more common in the A positive and B positive blood groups, as indicated in Tables 8 and 9. Oxygen requirement is also significantly higher in these groups. The above data is elicited in

Tables 8 and 9- and it is statistically significant. This is in support of some of the other studies discussed in the review of literature.

Finally, Table 11 depicts that patients with A positive blood group tends to have less survivors than patients with O positive, O negative, B positive and B negative blood groups. The median length of stay in O positive blood group was 8 days, 12 days in both O negative and B negative groups, whereas 13 days in B positive, 14.5 days in A positive. This difference was statically significant.

The above information tells us that ABO blood groups can have an effect on important morbidity factors like need for intubation and intensive care and also effect oxygen requirement and length of hospital stay. But from our study, levels of both inflammatory and prothrombotic biomarkers as mentioned above are not significantly elevated or decreased in particular blood groups. But Table 11 shows a significant difference in mortality in patients with A blood group with the others- where mortality is significantly higher in A blood group.

When comparing Rh positive and negative groups, our study found that more Rh negative patients tend to have less severe disease as per the classification goes, and the same is true for requirement of intensive care admission- where a Rh negative shows higher rate of protection when compared to Rh positive. Unfortunately, the total available Rh negative participants were in too small a number and more studies in this regard is warranted.

Thus, we see that the blood group does play role in determining not just incidence of COVID-19 disease, but also affects the morbidity and mortality of the disease- and the parameters to describe mortality and morbidity are as discussed above. This is in accordance with a few studies published abroad.

CONCLUSION

Since the start of the pandemic, doctors and scientists across the globe were on the look out for factors which predisposed to infection. As the days passed, the focus of the scientific community shifted onto factors affecting morbidity and mortality along with newer treatment options.

Blood grouping and its relation to incidence of SARS-CoV-2 infection was initially researched after which other factors which were indicators of morbidity and mortality were studies.

This study found and re-affirmed findings of other studies which found that O blood group was considered protective. It concludes that the incidence in moderate and serious patients is higher in A positive group rather that other blood groups.

It goes on to reveal that the various morbidity factors- need for intensive care, intubation, length of stay and mode of oxygenation- all are more serious in A blood group when compared to O, B and AB groups. The same holds good for mortality, which was found to be higher in A blood group.

This knowledge will help in evaluating and predicting patients who might have poorer prognosis, and other treatment modalities like convalescent plasma therapy aggressive treatment can be preferred in such patients, so that they get a better chance to recover.

SUMMARY

Our study based in KLES Dr Prabhakar Kore Hospital, Belagavi goes on to reveal that the various morbidity factors among patients admitted with severe COVID-19 infections. The data reveals that the need for intensive care, intubation, length of stay and mode of oxygenation- all are more serious in A blood group when compared to O, B and AB groups. The same holds good for mortality, which was found to be higher in A blood group.

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ANNEXURE - I

ETHICAL CLEARANCE

K.L.E. ACADEMY OF HIGHER EDUCATION AND RESEARCH
(Deemed to be University)
Accredited 'A' Grade by NAAC (2nd Cycle) Placed in Category '1' by MHRD
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA, INDIA)
Website: http:\www.jnmc.edu
E-Mail: dome@jnmc.edu
Phone: (+91-0831) Office: 2423570
Principal: 2471701
Fax No: (+91-0831) 2420779

Ref: MDC/DOME/ 15 **Date: 25/01/2021**

To.
REG. NO: BG0120003
PG student in Medicine,
J.N Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"CORRELATION BETWEEN THE CLINICAL & BIOCHEMICAL PROFILE SARS-COV-2 INFECTIONS WITH VARIOUS ABO BLOOD GROUPS-A ONE YEAR CROSS-SECTIONAL STUDY AT KLES DR. PRABHAKAR KORE HOSPITAL AND MRC"**, is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Smita Sonoli)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N Medical College, Belagavi

(Dr. Harsha Hegde)
Chairman
JNMC Institutional Ethics Committee
on Human Subjects Research
J.N Medical College, Belagavi

ANNEXURES - II

INFORMED CONSENT IN ENGLISH, HINDI, KANNADA AND MARATHI

INFORMED CONSENT

Dear Mr./Mrs./Dr. _____, you are kindly requested to enroll yourself in a research study tilted, "CLINICAL & BIOCHEMICAL PROFILE OF SARS-CoV-2 INFECTIONS WITH VARIOUS ABO BLOOD GROUPS- A ONE YEAR CROSS-SECTIONAL STUDY" being conducted by REG. NO: BG0120003, a post graduate student in M.D. General Medicine and the study will be carried out under the direct supervision and guidance of Dr. _____, Professor and Unit Chief, Department of General Medicine, Jawaharlal Nehru Medical College, Belagavi. You have been requested to participate in this as you fit into the laid out criteria for a study 'subject'/ participant.

Your participation in study is voluntary. Your decision whether or not to participate in the study will not affect your treatment in any form. If you decide to participate you are free to withdraw at any time.

TITLE OF THE STUDY:

"CLINICAL & BIOCHEMICAL PROFILE OF SARS-CoV-2 INFECTIONS WITH VARIOUS ABO BLOOD GROUPS- A ONE YEAR CROSS-SECTIONAL STUDY"

PURPOSE OF THE STUDY:

To study the correlation between the ABO blood group and the incidence of SARS- CoV-2 infection, variation of biochemical markers and clinical profile amongst various blood groups.

PROCEDURES INVOLVED:

If you agree to enroll yourself in my study, I will require some of your history and investigations accordingly, as mentioned below.

1) RT-PCR or RAT for SARS-CoV-2
2) ABO blood group
3) D dimer
4) Ferritin
5) CRP
6) Lactate Dehydrogenase
7) IL- 6

RISKS AND BENEFITS:

There are no potential risks involved in this study. Benefits of taking part in this research:

- To establish a proven relationship between ABO blood group and SARS- CoV 2 infection, clinical and biochemical profile.
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VOLUNTARY PARTICIPATION / WITHDRAWAL FROM THE STUDY:

Taking part in the study is voluntary. You may choose not to enroll yourself in this study and may choose to leave the study anytime in between.

ALTERNATIVES:

Your decision regarding participation in study will not change present or future health care services offered to you at KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum. You would simply be excluded from the study if you wish to, and all your details shall be kept confidential and you will get the routine line of management.

PRIVACY AND CONFIDENTIALITY:

All data collected or disclosed by you during the course of participation of study, will be kept fully confidential. If however during the course it becomes necessary for the progress of the course to disclose the identity, it would be done so only after your informed & written consent.

The only people to know that you are a research subject are members of the research team. No information about you will be disclosed to other without your written permission except:

- In emergency to protect your rights AND welfare.
- If required by law.

AUTHORIZATION TO PUBLISH RESULT:

The results of the study may be used to publish an article. When the results of research published or discussed, in a conference, no information will be displayed that would disclose your identity. Any information obtained in connection with this study and that can be identified with you will remain confidential.

FINANCIAL INCENTIVES FOR PARTICIPATION:

No additional costs shall be incurred upon you for the purpose of this study. It is purely being done with the idea of research and all the cost of study will be borne by the investigator.

COMPENSATION:

In the event that you become injured as a result of taking part in this study, treatment will be offered to you at KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum, or you will be given information about where to receive medical care. However, no reimbursement, compensation or free medical care will be given.

QUESTIONS/CONTACT DETAILS:

You shall be free to contact the below mentioned name & addresses anytime during the study period for any clarification or help as you may desire for.

In case of the queries during study or in future you may contact following persons,

1. Dr. _____
Chairman,

J.N.M.C Ethical Committee for Human Research

2. Dr. _____
Professor and Unit Head,
Dept of General Medicine,
JNMC, Belgaum.

3. REG. NO: BG0120003
Principal Investigator,
PG in General Medicine, JNMC,
Belgaum.

CONSENT FORM

I voluntarily agree to take part in this study by signing below. I may withdraw at any time. I am not giving up any of my legal rights by signing this form. My signature below indicates that I have read this consent form, or it has been read to me, this consent form and have had all the questions answered

Signature / Left Thumb print of the Participant or legally authorized representative

Participant's name :……...

Signature / Left thumb impression of the participant :……...

Name of the legally authorized representative / guardian :……...

Signature / Left thumb impression :……...

Witness' name :……...

Signature / Left thumb impression :……...

Investigator's name and signature :……..

.

Date-

Place-

सूचित सहमति

प्रिय श्री/श्रीमती/डॉ. _____, आप कृपया झुके हुए एक शोध अध्ययन में खुद को नामांकित करने का अनुरोध किया, "विभिन्न एबो रक्त समूहों के साथ सार्स-सीओवी-2 संक्रमणों का नैदानिक और जैव रासायनिक प्रोफाइल - एक वर्ष का पार-अनुभागीय अध्ययन" एमडी जनरल मेडिसिन में स्नातकोत्तर छात्र डॉ. आकाश रामास्वामी द्वारा संचालित किया जा रहा है और अध्ययन सीधे पर्यवेक्षण के तहत किया जाएगा और डॉ नवीन एस अंगड़ी, प्रोफेसर और यूनिट के प्रमुख, सामान्य चिकित्सा विभाग, जवाहरलाल नेहरू मेडिकल कॉलेज, बेलगाम, के प्रत्यक्ष पर्यवेक्षण और मार्गदर्शन में किया जाएगा।

आपसे इसमें भाग लेने का अनुरोध किया गया है क्योंकि आप एक अध्ययन 'विषय'/प्रतिभागी के लिए निर्धारित मानदंडों में फिट बैठते हैं।
अध्ययन में आपकी भागीदारी स्वैच्छिक है। अध्ययन में भाग लेने या न लेने का आपका निर्णय किसी भी रूप में आपके उपचार को प्रभावित नहीं करेगा। यदि आप भाग लेने का निर्णय लेते हैं तो आप किसी भी समय वापस लेने के लिए स्वतंत्र हैं।

अध्ययन का शीर्षक:

"सार्स- सी ओ वी-2 संक्रमण और विभिन्न ऐब रक्त समूहों के नैदानिक और जैव रासायनिक प्रोफाइल के बीच सहसंबंध"

अध्ययन का उद्देश्य:

एबीओ रक्त समूह और सार्स - सीओवी -2 संक्रमण की घटनाओं के बीच सहसंबंध का अध्ययन करने के लिए, विभिन्न रक्त समूहों के बीच जैव रासायनिक मार्कर और नैदानिक प्रोफ़ाइल की भिन्नता।

शामिल प्रक्रियाएं:

यदि आप मेरे अध्ययन में खुद को नामांकित करने के लिए सहमत हैं, तो मुझे नीचे बताए अनुसार आपकी कुछ जांचों की आवश्यकता होगी।

1) आर टी- पी सी आर के लिए आर ए टी सार्स-कोव-2
2) एबीओ रक्त समूह
3) डी डिमर
4) फेरिटीन
5) सीआरपी
6) लैक्टेट डिहाइड्रोजनेज
7) आईएल- 6

जोखिम और लाभ: इस अध्ययन में कोई संभावित जोखिम शामिल नहीं हैं।

इस शोध में भाग लेने के लाभ:

एबीओ रक्त समूह और सार्स - सीओवी 2 संक्रमण, नैदानिक और जैव रासायनिक प्रोफ़ाइल के बीच एक सिद्ध संबंध स्थापित करने के लिए।

अध्ययन से स्वैच्छिक भागीदारी / निकासी :

अध्ययन में भाग लेना स्वैच्छिक है। आप इस अध्ययन में खुद को नामांकित नहीं करना चुन सकते हैं और बीच में कभी भी अध्ययन छोड़ने का विकल्प चुन सकते हैं।

विकल्प:

अध्ययन में भाग लेने के बारे में आपका निर्णय के एल ई एस डॉ। प्रभाकर कोरे अस्पताल और चिकित्सा अनुसंधान केंद्र, बेलगाम में आपके लिए पेश की गई वर्तमान या भविष्य की स्वास्थ्य देखभाल सेवाओं को नहीं बदलेगा। यदि आप चाहें, तो आपको अध्ययन से बाहर रखा जाएगा और आपके सभी विवरणों को गोपनीय रखा जाएगा और आपको प्रबंधन की नियमित लाइन मिल जाएगी।

गोपनीयता और गोपनीयता :

अध्ययन की भागीदारी के दौरान आपके द्वारा एकत्र या प्रकट किए गए सभी डेटा को पूरी तरह से गोपनीय रखा जाएगा। हालांकि यदि पाठ्यक्रम के दौरान यह आवश्यक है कि पाठ्यक्रम की प्रगति के लिए पहचान का खुलासा करना आवश्यक है, तो यह आपकी सूचना और लिखित सहमति के बाद ही किया जाएगा।
केवल यह जानने के लिए कि आप एक शोध विषय हैं, अनुसंधान टीम के सदस्य हैं। आपके लिखित अनुमति के बिना आपके बारे में कोई भी जानकारी का खुलासा नहीं किया जाएगा :

- अपने अधिकारों और कल्याण की रक्षा के लिए आपातकाल में।
- यदि कानून द्वारा आवश्यक हो।

परिणाम प्रकाशित करने के लिए प्राधिकरण :

अध्ययन के परिणामों का उपयोग एक लेख प्रकाशित करने के लिए किया जा सकता है। जब एक सम्मेलन में प्रकाशित या चर्चा की गई शोध के परिणाम, कोई भी जानकारी प्रदर्शित नहीं की जाएगी जो आपकी पहचान का खुलासा करेगी। इस अध्ययन के संबंध में प्राप्त की गई कोई भी जानकारी और जिसे आप के साथ पहचाना जा सकता है, गोपनीय रहेगी।

भागीदारी के लिए वित्तीय प्रोत्साहन :

इस अध्ययन के उद्देश्य से आपके ऊपर कोई अतिरिक्त लागत नहीं लगेगी।
यह विशुद्ध रूप से अनुसंधान के विचार के साथ किया जा रहा है और अध्ययन का सारा खर्च अन्वेषक द्वारा वहन किया जाएगा।

भरपाई :

इस अध्ययन में भाग लेने के परिणामस्वरूप आप घायल हो जाते हैं, तो केएलईएस डॉ। प्रभाकर कोरे अस्पताल और चिकित्सा अनुसंधान केंद्र, बेलगाम में उपचार की पेशकश की जाएगी, या आपको चिकित्सा देखभाल कहाँ प्राप्त होगी, इसके बारे में जानकारी दी जाएगी। हालांकि, कोई प्रतिपूर्ति, मुआवजा या मुफ्त चिकित्सा देखभाल नहीं दी जाएगी।

अध्ययन के दौरान या भविष्य में प्रश्नों के मामले में आप निम्नलिखित व्यक्तियों से संपर्क कर सकते हैं,

प्रश्न / संपर्क विवरण :

आप किसी भी स्पष्टीकरण या मदद के लिए अध्ययन अवधि के दौरान किसी भी समय नीचे दिए गए नाम और पते से संपर्क करने के लिए स्वतंत्र हो सकते हैं।

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सहमति पत्र

मैं स्वेच्छा से नीचे हस्ताक्षर करके इस अध्ययन में भाग लेने के लिए सहमत हूं। मैं किसी भी समय वापस ले सकता हूं। मैं इस फॉर्म पर हस्ताक्षर करके अपने किसी भी कानूनी अधिकार को नहीं छोड़ रहा हूं। नीचे दिए गए मेरे हस्ताक्षर से संकेत मिलता है कि मैंने इस सहमति फॉर्म को पढ़ा है, या यह मेरे लिए पढ़ा गया है, यह सहमति फॉर्म और उत्तर दिए गए प्रश्नों के उत्तर हैं

तिभागी या कानूनी रूप से अधिकृत प्रतिनिधि का हस्ताक्षर / बायाँ अंगूठा प्रिंट

प्रतिभागी का नाम: ....।

हस्ताक्षर / बाएं अंगूठे का निशान: ....।

प्रतिभागी का

कानूनी रूप से अधिकृत का नाम: ....।

प्रतिनिधि / अभिभावक

हस्ताक्षर / बाएं अंगूठे का निशान: ....।

साक्षी का नाम: ....।

हस्ताक्षर / बाएं अंगूठे का निशान: ....।

अन्वेषक का नाम और हस्ताक्षर: ....।

दिनांक:

जगह:

ತಿಳುವಳಿಕೆಯ ಸಮ್ಮತಿ

ಆತ್ಮೀಯ ಶ್ರೀ/ಶ್ರೀಮತಿ/ಡಾ. _____, ನೀವು ದಯಮಾಡಿ ನಿಮ್ಮನ್ನು ಸಂಶೋಧನಾ ಅಧ್ಯಯನಕ್ಕೆ ಸೇರಿಸಿಕೊಳ್ಳಲು ವಿನಂತಿಸಲಾಗಿದೆ, "ವಿವಿಧ ಅಬೊ ಬ್ಲಡ್ ಗ್ರೂಪ್‌ಗಳೊಂದಿಗೆ ಸಾರ್ಸ್-ಕೋವ್-2 ಸೋಂಕುಗಳ ಕ್ಲಿನಿಕಲ್ ಮತ್ತು ಬಯೋಕೆಮಿಕಲ್ ಪ್ರೊಫೈಲ್- ಒಂದು ವರ್ಷದ ಅಡ್ಡ-ವಿಭಾಗದ ಅಧ್ಯಯನ" ಎಂ.ಡಿ. ಜನರಲ್ ಮೆಡಿಸಿನ್‌ನಲ್ಲಿ ಸ್ನಾತಕೋತ್ತರ ವಿದ್ಯಾರ್ಥಿ ಡಾ. ಆಕಾಶ್ ರಾಮಸ್ವಾಮಿ ಅವರು ನಡೆಸುತ್ತಿದ್ದಾರೆ ಮತ್ತು ಅಧ್ಯಯನವನ್ನು ನೇರ ಮೇಲ್ವಿಚಾರಣೆಯಲ್ಲಿ ನಡೆಸಲಾಗುವುದು ಮತ್ತು ಡಾ. ನವೀನ್ ಎಸ್ ಅಂಗಡಿ, ಪ್ರಾಧ್ಯಾಪಕರು ಮತ್ತು ಘಟಕದ ಮುಖ್ಯಾಧಿಕಾರಿ, ಜನರಲ್ ಮೆಡಿಸಿನ್ ವಿಭಾಗ, ಜವಾಹರಲಾಲ್ ನೆಹರು ವೈದ್ಯಕೀಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ ಇವರ ಮಾರ್ಗದರ್ಶನದಲ್ಲಿ ಈ ಅಧ್ಯಯನವನ್ನು ನಡೆಸಲಾಗುವುದು.

ಅಧ್ಯಯನದ 'ವಿಷಯ' / ಭಾಗವಹಿಸುವವರಿಗೆ ನೀವು ನಿಗದಿಪಡಿಸಿದ ಮಾನದಂಡಗಳಿಗೆ ಸರಿಹೊಂದುವಂತೆ ಇದರಲ್ಲಿ ಭಾಗವಹಿಸಲು ನಿಮ್ಮನ್ನು ವಿನಂತಿಸಲಾಗಿದೆ.

ಅಧ್ಯಯನದಲ್ಲಿ ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆಯು ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿದೆ. ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಬೇಕೆ ಅಥವಾ ಬೇಡವೇ ಎಂಬ ನಿಮ್ಮ ನಿರ್ಧಾರವು ಯಾವುದೇ ರೂಪದಲ್ಲಿ ನಿಮ್ಮ ಚಿಕಿತ್ಸೆಯ ಮೇಲೆ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ. ನೀವು ಭಾಗವಹಿಸಲು ನಿರ್ಧರಿಸಿದರೆ ನೀವು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಹಿಂಪಡೆಯಲು ಮುಕ್ತರಾಗಿದ್ದೀರಿ.

ಅಧ್ಯಯನದ ಶೀರ್ಷಿಕೆ:

"ವಿವಿಧ ಅಬೊ ಬ್ಲಡ್ ಗ್ರೂಪ್‌ಗಳೊಂದಿಗೆ ಸಾರ್ಸ್-ಕೋವ್-2 ಸೋಂಕುಗಳ ಕ್ಲಿನಿಕಲ್ ಮತ್ತು ಬಯೋಕೆಮಿಕಲ್ ಪ್ರೊಫೈಲ್- ಒಂದು ವರ್ಷದ ಅಡ್ಡ-ವಿಭಾಗದ ಅಧ್ಯಯನ"

ಅಧ್ಯಯನದ ಉದ್ದೇಶ:

ಎಬಿಒ ರಕ್ತದ ಗುಂಪು ಮತ್ತು ಸಾರ್ಸ್-ಸಿಒವಿ -2 ಸೋಂಕಿನ ಸಂಭವದ ನಡುವಿನ ಪರಸ್ಪರ ಸಂಬಂಧವನ್ನು ಅಧ್ಯಯನ ಮಾಡಲು, ಜೀವರಾಸಾಯನಿಕ ಗುರುತುಗಳ ವ್ಯತ್ಯಾಸ ಮತ್ತು ವಿವಿಧ ರಕ್ತ ಗುಂಪುಗಳ ನಡುವಿನ ಕ್ಲಿನಿಕಲ್ ಪ್ರೊಫೈಲ್.

ಒಳಗೊಂಡಿರುವ ಕಾರ್ಯವಿಧಾನಗಳು:

ನನ್ನ ಅಧ್ಯಯನದಲ್ಲಿ ನಿಮ್ಮನ್ನು ದಾಖಲಿಸಿಕೊಳ್ಳಲು ನೀವು ಒಪ್ಪಿದರೆ, ಕೆಳಗೆ ತಿಳಿಸಿರುವಂತೆ ನಿಮ್ಮ ಕೆಲವು ಇತಿಹಾಸ ಮತ್ತು ತನಿಖೆಗಳು ನನಗೆ ಅಗತ್ಯವಿರುತ್ತದೆ.

1) ಆರ್ ಟಿ-ಪಿ ಸಿ ಆರ್ ಅಥವಾ ಆರ್ ಎ ಟಿ ಸಾರ್ಸ್-ಕೋವ್-2 ಗಾಗಿ
2) ಎಬಿಒ ರಕ್ತ ಗುಂಪು
3) ಡಿ ಡೈಮರ್
4) ಫೆರಿಟಿನ್
5) ಸಿಆರ್‌ಪಿ
6) ಲ್ಯಾಕ್ಟೇಟ್ ಡಿಹೈಡ್ರೋಜಿನೇಸ್
7) ಐಎಲ್- 6

ಅಪಾಯ ಮತ್ತು ಪ್ರಯೋಜನಗಳು : ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಯಾವುದೇ ಸಂಭಾವ್ಯ ಅಪಾಯಗಳಿಲ್ಲ.

ಈ ಸಂಶೋಧನೆಯಲ್ಲಿ ಪಾಲ್ಗೊಳ್ಳುವ ಪ್ರಯೋಜನಗಳು :

ಎಬಿಒ ರಕ್ತ ಗುಂಪು ಮತ್ತು ಸಾರ್ಸ್-ಸಿಒವಿ -2 ಸೋಂಕು, ಕ್ಲಿನಿಕಲ್ ಮತ್ತು ಜೀವರಾಸಾಯನಿಕ ಪ್ರೊಫೈಲ್ ನಡುವೆ ಸಾಬೀತಾದ ಸಂಬಂಧವನ್ನು ಸ್ಥಾಪಿಸಲು.

ಸ್ವಯಂಪ್ರೇರಿತ ಭಾಗವಹಿಸುವಿಕೆ / ಅಧ್ಯಯನದಿಂದ ಹಿಂತೆಗೆದುಕೊಳ್ಳುವಿಕೆ:

ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವುದು ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿದೆ. ಈ ಅಧ್ಯಯನಕ್ಕೆ ನಿಮ್ಮನ್ನು ಸೇರಿಸಿಕೊಳ್ಳದಿರಲು ನೀವು ಆಯ್ಕೆ ಮಾಡಬಹುದು ಮತ್ತು ಈ ನಡುವೆ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಅಧ್ಯಯನವನ್ನು ಬಿಡಲು ಆಯ್ಕೆ ಮಾಡಬಹುದು.

ಪರ್ಯಾಯಗಳು :

ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವ ಬಗ್ಗೆ ನಿಮ್ಮ ನಿರ್ಧಾರವು ಕೆಎಲ್ಇಎಸ್ ಡಾ. ಪ್ರಭಾಕರ್ ಕೋರೆ ಆಸ್ಪತ್ರೆ ಮತ್ತು ಬೆಳಗಾವಿ ವೈದ್ಯಕೀಯ ಸಂಶೋಧನಾ ಕೇಂದ್ರದಲ್ಲಿ ನಿಮಗೆ ನೀಡುತ್ತಿರುವ ಪ್ರಸ್ತುತ ಅಥವಾ ಭವಿಷ್ಯದ ಆರೋಗ್ಯ ಸೇವೆಗಳನ್ನು ಬದಲಾಯಿಸುವುದಿಲ್ಲ. ನೀವು ಬಯಸಿದರೆ ನಿಮ್ಮನ್ನು ಅಧ್ಯಯನದಿಂದ ಹೊರಗಿಡಲಾಗುವುದು, ಮತ್ತು ನಿಮ್ಮ ಎಲ್ಲಾ ವಿವರಗಳನ್ನು ಗೌಪ್ಯವಾಗಿಡಲಾಗುತ್ತದೆ ಮತ್ತು ನೀವು ವಾಪಸಿಯ ನಿರ್ವಹಣೆಯನ್ನು ಪಡೆಯುತ್ತೀರಿ.

ಗೌಪ್ಯತೆ ಮತ್ತು ಗೌಪ್ಯತೆ :

ಅಧ್ಯಯನದ ಭಾಗವಹಿಸುವಿಕೆಯ ಸಮಯದಲ್ಲಿ ನೀವು ಸಂಗ್ರಹಿಸಿದ ಅಥವಾ ಬಹಿರಂಗಪಡಿಸಿದ ಎಲ್ಲಾ ಡೇಟಾವನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ಗೌಪ್ಯವಾಗಿಡಲಾಗುತ್ತದೆ. ಕೋರ್ಸ್ ಸಮಯದಲ್ಲಿ ಪ್ರಗತಿಗೆ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸುವುದು ಅಗತ್ಯವಿದ್ದರೆ, ನಿಮ್ಮ ಮಾಹಿತಿ ಮತ್ತು ಲಿಖಿತ ಒಪ್ಪಿಗೆಯ ನಂತರವೇ ಇದನ್ನು ಮಾಡಲಾಗುತ್ತದೆ.
ನೀವು ಸಂಶೋಧನಾ ವಿಷಯ ಎಂದು ತಿಳಿದುಕೊಳ್ಳುವ ವಿಕ್ಕಿಕ ಜನರು ಸಂಶೋಧನಾ ತಂಡದ ಸದಸ್ಯರು. ನಿಮ್ಮ ಲಿಖಿತ ಅನುಮತಿಯಿಲ್ಲದೆ ನಿಮ್ಮ ಬಗ್ಗೆ ಯಾವುದೇ ಮಾಹಿತಿಯನ್ನು ಇತರರಿಗೆ ಬಹಿರಂಗಪಡಿಸಲಾಗುವುದಿಲ್ಲ :
- ನಿಮ್ಮ ಹಕ್ಕುಗಳು ಮತ್ತು ಕಲ್ಯಾಣವನ್ನು ರಕ್ಷಿಸಲು ತುರ್ತು ಪರಿಸ್ಥಿತಿಯಲ್ಲಿ.
- ಕಾನೂನಿನ ಪ್ರಕಾರ ಅಗತ್ಯವಿದ್ದರೆ.

ಫಲಿತಾಂಶಗಳನ್ನು ಪ್ರಕಟಿಸಲು ಅಧಿಕಾರ:

ಅಧ್ಯಯನದ ಫಲಿತಾಂಶಗಳನ್ನು ಲೇಖನವನ್ನು ಪ್ರಕಟಿಸಲು ಬಳಸಬಹುದು. ಸಂಶೋಧನೆಯ ಫಲಿತಾಂಶಗಳು ಪ್ರಕಟವಾದ ಅಥವಾ ಚರ್ಚಿಸಿದಾಗ, ಸಮ್ಮೇಳನದಲ್ಲಿ, ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸುವ ಯಾವುದೇ ಮಾಹಿತಿಯನ್ನು ಪ್ರದರ್ಶಿಸಲಾಗುವುದಿಲ್ಲ. ಈ ಅಧ್ಯಯನಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಪಡೆದ ಯಾವುದೇ ಮಾಹಿತಿಯು ಮತ್ತು ಅದನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಗುರುತಿಸಬಹುದು.

ಭಾಗವಹಿಸುವಿಕೆಗೆ ಆರ್ಥಿಕ ಪ್ರೋತ್ಸಾಹ:

ಈ ಅಧ್ಯಯನದ ಉದ್ದೇಶಕ್ಕಾಗಿ ಯಾವುದೇ ಹೆಚ್ಚುವರಿ ವೆಚ್ಚಗಳು ನಿಮ್ಮ ಮೇಲೆ ಆಗುವುದಿಲ್ಲ.

ಇದನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ಸಂಶೋಧನೆಯ ಆಲೋಚನೆಯೊಂದಿಗೆ ಮಾಡಲಾಗುತ್ತಿದೆ ಮತ್ತು ಅಧ್ಯಯನದ ಎಲ್ಲಾ ವೆಚ್ಚವನ್ನು ತನಿಖಾಧಿಕಾರಿ ಭರಿಸುತ್ತಾರೆ.

ಪರಿಹಾರ:

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಪಾಲ್ಗೊಂಡ ಪರಿಣಾಮವಾಗಿ ನೀವು ಗಾಯಗೊಂಡರೆ ಬೆಳಗಾವಿನ ಕೆಎಲ್ಇಎಸ್ ಡಾ. ಪ್ರಭಾಕರ್ ಕೋರೆ ಆಸ್ಪತ್ರೆ ಮತ್ತು ವೈದ್ಯಕೀಯ ಸಂಶೋಧನಾ ಕೇಂದ್ರದಲ್ಲಿ ನಿಮಗೆ ಚಿಕಿತ್ಸೆ ನೀಡಲಾಗುವುದು ಅಥವಾ ವೈದ್ಯಕೀಯ ಆರೈಕೆಯನ್ನು ಎಲ್ಲಿ ಪಡೆಯಬೇಕು ಎಂಬ ಬಗ್ಗೆ ನಿಮಗೆ ಮಾಹಿತಿ ನೀಡಲಾಗುವುದು. ಅದಾಗ್ಯೂ, ಯಾವುದೇ ಮರುಪಾವತಿ, ಪರಿಹಾರ ಅಥವಾ ಉಚಿತ ವೈದ್ಯಕೀಯ ಸೌಲಭ್ಯವನ್ನು ನೀಡಲಾಗುವುದಿಲ್ಲ.

ಪ್ರಶ್ನೆಗಳು / ಸಂಪರ್ಕ ವಿವರಗಳು:

ನೀವು ಬಯಸಿದಂತೆ ಯಾವುದೇ ಸ್ಪಷ್ಟೀಕರಣ ಅಥವಾ ಸಹಾಯಕ್ಕಾಗಿ ಅಧ್ಯಯನದ ಅವಧಿಯಲ್ಲಿ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಈ ಕೆಳಗಿನ ಹೆಸರು ಮತ್ತು ವಿಳಾಸಗಳನ್ನು ಸಂಪರ್ಕಿಸಲು ನೀವು ಮುಕ್ತರಾಗಿರಬೇಕು.

ಡಾ.ರೂಪಾ ಎಂ ಬೆಲ್ಲದ

ನೈತಿಕ ಸಮಿತಿಯ ಮುಖ್ಯಸ್ಥ
ಮಾನವ ಸಂಶೋಧನೆ
ಜೆಎನ್ಎಂಸಿ, ಬೆಳಗಾವಿ.
ಮೊಬೈಲ್ - 9448113403

ಡಾ. ನವೀನ್ ಎಸ್ ಅಂಗಡಿ

ಪ್ರಾಧ್ಯಾಪಕ ಮತ್ತು ಯುನಿಟ್ ಮುಖ್ಯಸ್ಥ.
ಜನರಲ್ ಮೆಡಿಸಿನ್ ಇಲಾಖೆ,
ಜೆಎನ್ಎಂಸಿ, ಬೆಳಗಾವಿ.
ಮೊಬೈಲ್ - 9880940984

ಡಾ. ಆಕಾಶ್ ರಾಮಸ್ವಾಮಿ

ತನಿಖಾಧಿಕಾರಿ, ಸ್ನಾತಕೋತ್ತರ ವಿದ್ಯಾರ್ಥಿ
ಜನರಲ್ ಮೆಡಿಸಿನ್ ಇಲಾಖೆ,
ಜೆಎನ್ಎಂಸಿ, ಬೆಳಗಾವಿ.
ಮೊಬೈಲ್ - 7760410071

ಒಪ್ಪಿಗೆ ಪತ್ರ

ಕೆಳಗೆ ಸಹಿ ಮಾಡುವ ಮೂಲಕ ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನಾನು ಸ್ವಯಂಪ್ರೇರಣೆಯಿಂದ ಒಪ್ಪುತ್ತೇನೆ. ನಾನು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಹಿಂತೆಗೆದುಕೊಳ್ಳಬಹುದು. ಈ ಫಾರ್ಮ್ಗೆ ಸಹಿ ಮಾಡುವ ಮೂಲಕ ನಾನು ನನ್ನ ಯಾವುದೇ ಕಾನೂನು ಹಕ್ಕುಗಳನ್ನು ಬಿಟ್ಟುಕೊಡುತ್ತಿಲ್ಲ. ಕೆಳಗಿನ ನನ್ನ ಸಹಿ ನಾನು ಈ ಒಪ್ಪಿಗೆಯ ಫಾರ್ಮ್ ಅನ್ನು ಓದಿದ್ದೇನೆ ಅಥವಾ ಈ ಸಮ್ಮತಿಯ ಫಾರ್ಮ್ ಅನ್ನು ನನಗೆ ಓದಿದ್ದೇನೆ ಮತ್ತು ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿದೆ ಎಂದು ಸೂಚಿಸುತ್ತದೆ

ಭಾಗವಹಿಸುವವರ ಅಥವಾ ಕಾನೂನುಬದ್ಧವಾಗಿ ಅಧಿಕೃತ ಪ್ರತಿನಿಧಿಯ ಸಹಿ / ಎಡ ಹೆಬ್ಬೆರಳು ಮುದ್ರಣ ಭಾಗವಹಿಸುವವರ ಹೆಸರು: ....

ಸಹಿ / ಎಡ ಹೆಬ್ಬೆರಳು ಅನಿಸಿಕೆ: ....

ಭಾಗವಹಿಸುವವರ ಕಾನೂನುಬದ್ಧವಾಗಿ ಅಧಿಕಾರ ಪಡೆದವರ ಹೆಸರು: ....

ಪ್ರತಿನಿಧಿ / ರಕ್ಷಕ ಸಹಿ / ಎಡ ಹೆಬ್ಬೆರಳು ಅನಿಸಿಕೆ: ....

ಸಾಕ್ಷಿ ಹೆಸರು: ....

ಸಹಿ / ಎಡ ಹೆಬ್ಬೆರಳು ಅನಿಸಿಕೆ: ....

ತನಿಖಾಧಿಕಾರಿ ಹೆಸರು ಮತ್ತು ಸಹಿ: ....

ದಿನಾಂಕ:

ಸ್ಥಳ:

माहितीपूर्ण संमती

प्रिय श्री/श्रीमती/डॉ. _____, तुम्ही आहात
कृपया झुकलेल्या संशोधन अभ्यासात स्वतःची नोंदणी करण्याची विनंती केली आहे, "विविध एबो रक्तगटांसह सार्स-कोव्ह -2 संसर्गाचे क्लिनिकल आणि बायोकेमिकल प्रोफाइल- एक वर्षाचा क्रॉस-सेक्शनल अभ्यास" एमडी जनरल मेडिसिनमधील पदव्युत्तर विद्यार्थी डॉ. आकाश रामस्वामी यांच्याद्वारे आयोजित केला जात आहे आणि हा अभ्यास थेट देखरेखीखाली केला जाईल आणि डॉ नवीन एस अंगाडी, प्राध्यापक आणि युनिट यांचे मार्गदर्शन
प्रमुख, जनरल मेडिसिन विभाग, जवाहरलाल नेहरू वैद्यकीय महाविद्यालय, बेळगाव.

तुम्ही अभ्यास 'विषय'/ सहभागीसाठी दिलेल्या निकषांमध्ये बसता म्हणून तुम्हाला यात सहभागी होण्याची विनंती करण्यात आली आहे.
तुमचा अभ्यासातील सहभाग ऐच्छिक आहे. अभ्यासात भाग घ्यायचा की नाही याचा तुमचा निर्णय कोणत्याही स्वरूपात तुमच्या उपचारांवर परिणाम करणार नाही. तुम्ही सहभागी होण्याचे ठरवल्यास तुम्ही कधीही माघार घेण्यास मोकळे आहात.

अभ्यासाचे शीर्षक:

"सार्स-सीओव्ही -२संक्रमण आणि विविध अबो रक्त गटांच्या क्लिनिकल आणि बायोकेमिकल प्रोफाइलमधील सहसंबंध".

अभ्यासाचा हेतू:

एबीओ रक्तगट व सार्स-सीओव्ही -२ संसर्ग, बायोकेमिकल मार्करचे विविधता आणि विविध रक्त गटांमधील क्लिनिकल प्रोफाइल यांच्यातील परस्पर संबंधाचा अभ्यास करणे.

प्रक्रिया समाविष्ट:

आपण माझ्या अभ्यासामध्ये स्वत: ला नावनोंदणी करण्यास सहमती देत असल्यास, खाली नमूद केल्याप्रमाणे मला त्यानुसार आपल्या काही तपासणीची आवश्यकता असेल.

1) आर टी- पी सी आर किंवा आर ए टी साठी सार्स-कोव-2
2) एबीओ रक्तगट
3) डी डायमर
4) फेरीटिन
5) सीआरपी
6) दुग्धशर्करा
7) आयएल- 6

जोखीम आणि फायदे : या अभ्यासामध्ये कोणतेही संभाव्य धोके गुंतलेले नाहीत.

या संशोधनात भाग घेण्याचे फायदे:

एबीओ रक्त गट आणि सार्स-सीओव्ही -२ संसर्ग, क्लिनिकल आणि बायोकेमिकल प्रोफाइल दरम्यान सिद्ध संबंध स्थापित करणे.

ऐच्छिक सहभाग / अभ्यासामधून पैसे काढणे :

अभ्यासामध्ये भाग घेणे ऐच्छिक आहे. आपण या अभ्यासामध्ये स्वत: ची नावनोंदणी न करणे निवडू शकता आणि दरम्यान अभ्यास कधीही सोडणे निवडू शकता.

विकल्प:

अभ्यासात सहभागासंदर्भातील तुमचा निर्णय केएलईएस डॉ. प्रभाकर कोरे हॉस्पिटल आणि वैद्यकीय संशोधन केंद्र, बेळगाव येथे तुम्हाला देऊ केलेल्या सध्याच्या किंवा भविष्यातील आरोग्य सेवा बदलणार नाही. आपली इच्छा असेल तर आपल्याला अभ्यासापासून वगळले जाईल आणि आपले सर्व तपशील गोपनीय ठेवले जातील आणि आपल्याला व्यवस्थापनाची नियमित रूंदी मिळेल.

गोपनीयता आणि गोपनीयता :

अभ्यासाच्या सहभागादरम्यान आपण गोळा केलेला किंवा जाहीर केलेला सर्व डेटा पूर्णपणे गोपनीय ठेवला जाईल. अर्थात कोर्सच्या दरम्यान ओळख जाहीर करणे आवश्यक झाले तर ते तुमच्या माहिती व लेखी संमतीनंतरच केले जाईल. आपण संशोधन विषय आहात हे फक्त लोकांनाच माहित आहे की ते संशोधन पथकाचे सदस्य आहेत. आपल्या लेखी परवानगीशिवाय इतर आपल्याबद्दल कोणतीही माहिती उघड केली जाणार नाही:

- आपत्कालीन परिस्थितीत आपले हक्क आणि कल्याण यांचे संरक्षण करण्यासाठी.
- कायद्याने आवश्यक असल्यास.

निकाल प्रकाशित करण्यासाठी अधिकृतता:

अभ्यासाचा निकाल लेख प्रकाशित करण्यासाठी वापरला जाऊ शकतो. जेव्हा एखाद्या संशोधनाचे निकाल कॉन्फरन्समध्ये प्रकाशित केले जातात किंवा त्यावर चर्चा केली जाते तेव्हा आपली ओळख उघडकीस आणणारी कोणतीही माहिती दर्शविली जाणार नाही. या अभ्यासाच्या संदर्भात प्राप्त केलेली कोणतीही माहिती आणि ती आपल्याशी ओळखली जाऊ शकते ती गोपनीय राहील.

सहभागासाठी आर्थिक प्रोत्साहन :

या अभ्यासाच्या हेतूने आपल्यावर कोणत्याही प्रकारची अतिरिक्त किंमत आकारली जाणार नाही.
हे निव्वळ संशोधनाच्या कल्पनेने केले जात आहे आणि अभ्यासाचा सर्व खर्च तपासनीस करेल.

भरपाई :

या अभ्यासामध्ये भाग घेतल्यामुळे आपण जखमी झाल्यास, केएलईएस डॉ. प्रभाकर कोरे हॉस्पिटल आणि मेडिकल रिसर्च सेंटर, बेळगाव येथे तुम्हाला उपचार देण्यात येतील किंवा तुम्हाला वैद्यकीय सेवा कोठून घ्यावी याविषयी माहिती दिली जाईल. तथापि, कोणतेही प्रतिपूर्ती, भरपाई किंवा विनामूल्य वैद्यकीय सेवा दिली जाणार नाही.

अभ्यासाच्या वेळी किंवा भविष्यातील प्रश्नांच्या बाबतीत आपण खालील व्यक्तींशी संपर्क साधू शकता,

प्रश्न / संपर्क तपशील:

अभ्यासाच्या कालावधीत कोणत्याही स्पष्टीकरणासाठी किंवा तुम्हाला पाहिजे असलेल्या मदतीसाठी तुम्ही खाली नमूद केलेल्या नावाने व पत्त्यांशी कधीही संपर्क साधू शकता.

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संमती फॉर्म

मी खाली स्वाक्षरी करून या अभ्यासात भाग घेण्यास स्वेच्छेने सहमत आहे. मी कधीही माघार घेऊ शकतो. या फॉर्मवर सही करून मी माझा कोणताही कायदेशीर हक्क सोडत नाही. खाली माझी स्वाक्षरी सूचित करते की मी हा संमती फॉर्म वाचला आहे किंवा हा संमती फॉर्म मला वाचला आहे आणि मला सर्व प्रश्नांची उत्तरे दिली आहेत

सहभागी किंवा कायदेशीररित्या अधिकृत प्रतिनिधीची सही / डावा अंगठा प्रिंट

सहभागीचे नाव: ....

स्वाक्षरी / डावा अंगठा ठसा: ....

सहभागीचा

कायदेशीररीत्या अधिकृत नाव: ....

प्रतिनिधी / पालक

स्वाक्षरी / डावा अंगठा ठसा: ....

साक्षीचे नाव: ....

स्वाक्षरी / डावा अंगठा ठसा: ....

अन्वेषकांचे नाव आणि स्वाक्षरी: ....

तारीख:

ठिकाण:

ANNEXURE – III

PROFORMA

CASE NO: **NAME-** **IP NO**

AGE/SEX-

DOA AND DOD:

COMPLAINTS AT PRESENTATION:

<table>
<tr><td colspan="6">Tick the applicable Box</td></tr>
<tr><td>Cough</td><td></td><td>Fever</td><td></td><td rowspan="2">Other Symptoms</td><td rowspan="2"></td></tr>
<tr><td>Myalgia</td><td></td><td>Breathlessness</td><td></td></tr>
<tr><td colspan="5">Time to hospital from symptom onset (Days)</td><td></td></tr>
</table>

Past history:

Personal history:

Oxygenation Parameters at admission	
Admission Respiratory rate (RR/min)	
Admission SPO2(%)	
Admission O2 modality (RBM,HFO,NIV, Ventilator)	
Admission O2 rate (in Litres per minute)	
Admission O2 FiO2 (%)	
Admission PO2 (Look at admission ABG)	

CT SEVERITY SCORE-

BLOOD GROUP OF CASE-

INVESTIGATION	DATE	DATE	DATE	DATE
D DIMER				
IL-6				
hsCRP				
LDH				
FERRITIN				
OTHERS				

ICU ADMISSION--- YES / NO

OXYGEN REQUIREMENT AND NEED FOR INTUBATION-

Maximum OXYGENATION Support required during entire stay	
Mode of O2 (RBM,HFO,NIV, Ventilator)	
FiO2%	
SpO2 %	
PO2% (Look at ABG)	

TREATMENT-

Remdesivir (No. of Doses)	
Tocilizumab (No. of Doses)	
LMWH (Max Dose)	
Un-fractioned Heparin (Max Dose)	
Type of Steroid used (methyle pred or dexa)	
Max dose of steroid per day used	
OTHER DRUGS	

OUTCOME-

Outcome	Tick	Date
Improved and discharged		
Died		
Worsened and went AMA		
Improved and went AMA		

CASE NO	AGE	SEX	IP NO	BLOOD GRP	DOA	SYMPTOMS	DAYS OF PRESENTATION	COMORBODITIES (DM=D, HTN=H. THYROID=T, HEART=S)	RTPCR	CORADS	CSS	SEVERITY CLASSIFICATION (MILD=M; MODERATE=O; SEVERE=S)	Admission SPO2	Admission O2 modality (O2 mask, RBM,HFO, NIV, Ventilator)	DATE	LDH	Ddimer	IL6	FERR	CRP	ICU ADMISSION	NEED FOR INTUBATION	MODE OF O2 (O=OXYGEN,R=NRBM, H=HFO, V=VENTILATOR)	LENGTH OF STAY	OUTCOME- SURVIVORS-S NON SURVIVORS-N AMA-A
1	58	M	1021484	A+	22-Aug	F,C,B	3	D,H	POS	5	12	S	76	RA	22-Aug	188	175	5.83	264	2.4	Y	Y	V	20	N
2	48	F	1021485	AB+	22-Aug	F,B	2	D	POS	5	3	S	80	RA	22-Aug	408	285	65.8	195	77	Y	Y	V	17	N
3	40	M	1021492	O+	22-Aug	C,F,B	3	D	POS	5	5	O	93%	RA	22-Aug	782	1229	75	819		Y	Y	V	15	N
4	81	M	1021494	A+	22-Aug	B,C	2	D,H	POS	5	3	O	92%	RA	22-Aug	476	439	80	513	57	Y	Y	V	15	N
5	75	F	1021495	B+	22-Aug	F,C,B,GENERALISED WEAKNESS	3		POS	5	2	S	85%	RA	22-Aug	173	181	1.5	86	4.2	N	N	O	13	N
6	70	M	1021504	O+	22-Aug	C,GENERALISED WEAKNESS	3	D,H,S	POS	5	6	S	86	RA	22-Aug	178	210	2.4	251	4.5	N	N	O	17	S
7	47	M	1021508	O+	22-Aug	C,B	3	D	POS	5	4	S	90%	RA	22-Aug	245			245		N	N	O	6	S
8	63	F	1021511	O+	22-Aug	B,C	3		POS	5	4	S	82%	RA	22-Aug	502	699	15	311		N	N	O	6	N
9	63	M	1021512	B+	22-Aug	B,C	3	D	POS	5	4	S	88%	RA	22-Aug	394			452		N	N	O	6	S
10	54	M	1021513	AB-	22-Aug	F,C,B	3	D	POS	5	7	S	88	RA	22-Aug	262	1049	21	332	3.8	Y	Y	V	12	N
11	46	M	1021522	A+	22-Aug	F,C,B	4	D	POS	5	6	S	86%	RA	22-Aug	280		18.7	1406	11.7	Y	Y	V	15	S

12	70	M	1021528	O+	22-Aug	F,B,LOOSE STOOLS	5	D	POS	5	8	O	93	RA	22-Aug	606	968		1738	267	Y	Y	V	7	N
13	57	M	1021530	O+	23-Aug	C,F,B	6	H	POS	5	3	O	93	RA	23-Aug	1756	5000	27	943		N	N	O	7	S
14	65	F	1021549	A+	23-Aug	F,C,B	4	S	POS	5	3	O	93	RA	23-Aug	294	357	29	199		Y	N	R	13	N
15	46	M	1021550	AB+	23-Aug	C,B	4		POS	5	5	O	93%	RA	23-Aug	813		3	730		Y	N	R	16	N
16	65	M	1021557	B-	23-Aug	C,B	3	S	POS	5	6	O	94%	RA	23-Aug	347	1307	583	320		N	N	O	14	N
17	46	M	1021558	A+	23-Aug	F,B	4	H	POS	5	3	O	93	RA	23-Aug	418	157	46	1057	8.6	Y	N	O	16	N
18	39	F	1021559	AB+	23-Aug	C	1	D,H,S	POS	5	3	O	93%	RA	23-Aug	360	263	28	115		Y	Y	V	14	S
19	67	M	1021567	O+	24-Aug	F,B	2	D,H,S	POS	5	18	S	80	RA	24-Aug	786		93	902	209	N	N	O	16	S
20	47	M	1021604	A+	24-Aug	C,B	2	D,H	POS	5	6	S	86	RA	24-Aug	456	562	56	45	34	Y	Y	V	14	S
21	45	M	1021608	A+	24-Aug	B,F,LOSS OF APPETITE	7	D,H	POS	5	8	S	90	RA	24-Aug	567	5000	676	456	676	Y	Y	V	13	N
22	55	F	1021617	A+	24-Aug	F,C,MYALGIA	5	H	POS	5	6	S	88	RA	24-Aug	543	565	878	563	231	Y	Y	V	16	N
23	54	F	1021620	O+	24-Aug	B,FATIGUE	4		POS	5	5	S	81%	RA	24-Aug	47	56	45	89	89	N	N	O	12	S
24	75	M	1021624	B+	24-Aug	F	4		POS	5	15	S	83	RA	24-Aug	566	455	45	23	344	Y	N	O	15	S
25	74	M	1021625	AB+	24-Aug	F,C,B	4		POS	5	18	S	89	RA	24-Aug	363	677	45	676		Y	N	R	16	S
26	58	M	1021628	O+	24-Aug	F,B	4		POS	5	17	S	37	RA	24-Aug	564	898	676	556	34	Y	Y	V	6	N

27	73	F	1021629	AB-	24-Aug	F,B	3	D	POS	5	5	O	98	RA	24-Aug	766	565	434	456	67	Y	Y	V	8	S
28	38	M	1021634	O+	24-Aug	F,B	4	D	POS	5	3	O	42	RA	24-Aug	89	56	344	67		N	N	O	3	S
29	61	M	1021636	O+	24-Aug	F,B	5		POS	5	12	S	52	RA	24-Aug	32	45	65	76		N	N	O	4	S
30	70	M	1021679	A+	25-Aug	F,B	4	H	POS	5	5	O	92	RA	25-Aug	45	76	87	345		N	N	O	6	S
31	63	M	1021684	B+	25-Aug	F,B	4	S	POS	5	4	O	96	RA	25-Aug	34	65	78	76	8.9	N	N	O	4	S
32	84	M	1021695	AB+	25-Aug	F,B	3		POS	5	4	O	92%	RA	25-Aug	87	54	34	655		N	N	R	16	S
33	73	M	1021703	A+	25-Aug	F,B	3	D,H,S	POS	5	6	O	93	RA	25-Aug	766	454	342	390		Y	N	R	16	N
34	55	M	1021710	O+	25-Aug	F,B	3	D,H,S	POS	5	8	S	95%	RA	25-Aug	76	56	45	76		N	N	O	3	S
35	53	F	1021711	A+	25-Aug	F,B	4	D	POS	5	6	S	95	RA	25-Aug	83	58	96	35		Y	N	R	5	S
36	34	F	1021360	O+	20-Aug	F,B	4	S	POS	5	2	O	85	RA	20-Aug	27	72	267	335	89	Y	N	R	5	S
37	67	M	1021376	B+	20-Aug	F,B	2	D	POS	5	2	O	88	RA	20-Aug	667	678	277	4555	466	Y	Y	V	15	N
38	36	M	1021386	O+	20-Aug	F,B	4		POS	5	2	O	88	RA	20-Aug	455	655	566	821	65	Y	Y	V	6	S
39	28	F	1021413	B+	21-Aug	F,B	3	H	POS	5	4	S	94%	RA	21-Aug	233	456	553	67	355	Y	N	O	16	N
40	59	M	1021414	O+	21-Aug	F,B	3	D	POS	5	4	S	89	RA	21-Aug	453	65	3545	45	90	Y	N	R	7	S
41	64	M	1021421	O+	21-Aug	F,B	4	D,H	POS	5	4	S	86	RA	21-Aug	126	784	38	94	76	Y	N	O	4	N

42	40	M	1021440	O+	21-Aug	F,B	4	H	POS	5	4	S	81	RA	21-Aug	32	56	784	45	78	N	N	O	7	N
43	63	M	1021445	B+	21-Aug	F,B	4		POS	5	5	S	87	RA	21-Aug	36	57	78	28	45	N	N	O	6	S
44	24	M	1021450	O-	21-Aug	F,B	4		POS	5	5	S	88%	RA	21-Aug	73	58	35	22	5	N	N	O	9	S
45	64	M	1021453	A-	21-Aug	F,B	4	D,H	POS	5	5	S	88%	RA	21-Aug	84	65	27	57	45	N	N	O	15	A
46	26	M	1021457	O+	21-Aug	F,B	3		POS	5	3	S	89	RA	21-Aug	48	22	67	85		N	N	O	6	S
47	56	F	1021459	B+	21-Aug	F,B	3	D,H	POS	5	3	S	89	RA	21-Aug	675	488	68	53	57	Y	N	R	5	S
48	54	M	1021467	B+	21-Aug	F,B	1		POS	5	17	S	88	RA	21-Aug	478	357	895	378		Y	N	R	7	A
49	85	M	1021469	B+	21-Aug	F,B	6	D,H,S	POS	5	2	O	93	RA	21-Aug	588	457	684	66		Y	Y	V	13	S
50	48	F	1021470	A+	21-Aug	F,B	5	S	POS	5	12	S	89%	RA	21-Aug	855	763	84	62	68	Y	N	O	9	S
51	57	M	1021471	A+	21-Aug	F,B	1	S	POS	5	12	S	89%	RA	21-Aug	588	463	769	43		Y	N	O	8	N
52	55	F	1021472	AB+	21-Aug	F,B	3	D,H,S	POS	5	5	O	93%	RA	21-Aug	366	757	544	855	655	Y	Y	V	5	N
53	60	M	1024843	A+	06-Oct	F,C,B	10	D,H,S	POS	5	18	S	82	RA	06-Oct	726	>5000	26.26	434	41	Y	Y	V	15	N
54	45	F	1022197	A+	02-Sep	F,B	4	D,T	POS	5	20	S	65%	RA	02-Sep	620	>5000	455	205	140	Y	N	N	13	N
55	64	M	1021857	A+	28-Aug	C,F,B	4	D,H,S	POS	5	14	O	91	RA	28-Aug	j809	5000.00	12.95	703	45	Y	Y	V	23	A
56	67	M	1021376	B+	20-Aug	B,C	7		POS	4	19	S	84	RA	20-Aug		3467	222	455	132	Y	Y	V	20	N

57	45	M	1023252	O-	15-Sep	B,C	3	D,H,S	POS	4	5	S	62	RA	15-Sep	229	119	10.95	321.9	343	N	N	O	14	S
58	45	M	1024050	B+	25-Sep	B,C	4		POS	5	19	S	86	RA	25-Sep	j347	1071	543.87	1582	269	Y	Y	V	16	S
59	61	M	1022761	A+	09-Sep	C,B	4	D,H,S	POS	5	20	S	92	RA	09-Sep	989	1098	138.3	544	285	Y	Y	V	20	N
60	58	M	1021628	O+	25-Aug	B,C	7		POS	5	14	O	91	RA	25-Aug	478	354	22.05	2041	65.9	N	N	O	8	S
61	70	M	1021853	A+	28-Aug	B,C	2		POS	5	19	S	94	RA	28-Aug	437	654	21.2	376.7	45.7	Y	N	O	9	N
62	50	M	1022554	B+	06-Sep	F,C,B	4		POS	5	20	S	94%	RA	06-Sep	713	486	155	129	63	Y	N	O	22	N
63	40	M	1024614	O+	03-Oct	F,C,B	8		POS	5	15	O	91%	RA	03-Oct	303	390	12.79	204.7	45	Y	Y	V	9	N
64	32	M	1020899	O+	20-Aug	F,C,B	7		POS	5	8	S	90%	RA	20-Aug	459	454	56	564	90	N	N	O	9	S
65	55	F	1023888	O+	24-Sep	C,F,B	18	D,H,S	POS	5	2	S	94%	RA	24-Sep	344	709	67	303.7	109	N	N	O	10	S
66	54	M	1024633	B+	01-Oct	F,C,B	3	D,H	POS	5	12	S	94	RA	01-Oct		1371	23.8	235	186.6	Y	Y	V	11	N
67	86	M	1024417	O+	30-Sep	C,B	2	D	POS	5	3	S	100	RA	30-Sep		938	21.8	523.5	81.9	Y	N	O	7	S
68	56	F	1025521	B+	15-Oct	C,B	7	D,H	POS	5	23	S	96	RA	15-Oct	1230.00	>5000	85.1	464.6	58.9	N	N	O	17	N
69	25	F	1026308	O+	26-Oct	F,B	7	D,H	POS	5	10	S	38	RA	26-Oct	336	1491	16.8	68.2	67.8	N	N	O	7	S
70	55	M	1025465	O+	14-Oct	C	7	H	POS	4	12	S	69%	RA	14-Oct	314	272		775.7	28.4	N	N	O	8	S
71	60	M	1024235	A+	05-Oct	F,B	10	D,H	POS	5	18	S	81	RA	05-Oct	726	>5000	26.26	431	41	Y	Y	V	18	N

72	48	M	1022999	O+	24-Sep	C,B	5	D,H,S	POS	5	21	S	70	RA	24-Sep	756.00	272	44.8	177.4	23	Y	N	O	16	N
73	55	F	1022668	O+	07-Sep	F,C,B	3	D,H	POS	5	15	S	96	RA	07-Sep	1747	620	71.21	136	654	Y	N	O	12	S
74	65	M	1021904	O+	28-Aug	F,C,B	5	D,H,S	POS	5	15	S	98%	RA	28-Aug	233.00	273	49.1			Y	N	O	17	N
75	65	M	1021319	A+	19-Aug	F,C,B	2	D,H	POS	5	21	S	88%	RA	19-Aug	203.00	268	92.5	1663	55.2	Y	Y	V	17	N
76	58	M	1028094	O+	15-Nov	F	4	D,H,S	POS	5	15	S	88	RA	15-Nov	400.00	352	110	226	486	Y	Y	V	9	S
77	62	M	1028137	A+	16-Nov	F,C,B	3		POS	5	18	S	75	RA	16-Nov	242.00	675	181.9	162.7	134.2	Y	N	R	8	S
78	62	M	1025760	O+	19-Oct	F,B	4		POS	5	17	S	78%	RA	19-Oct	2325.00	442	62.4	995	207	N	N	O	11	S
79	64	M	1021792	O+	03-Sep	F	5	D,H,S	POS	5	13	S	76	RA	03-Sep	344.00	347	454	345	454	Y	N	O	15	S
80	62	M	1021820	O+	19-Oct	F,B	5	D,H	POS	5	8	S	80	RA	19-Oct	488.00	633	526	658	43	N	N	O	7	S
81	65	M	1021835	A+	19-Oct	F,B	3	D,H,S	POS	5	17	S	85%	RA	19-Oct	3577.00	2233	58	366	26	Y	Y	V	16	N
82	59	M	1021836	A+	24-Sep	F,B	5	D,H	POS	5	16	S	88%	RA	24-Sep	4677.00	3556	577	488		Y	Y	V	15	N
83	52	M	1021845	O+	24-Sep	F	3	D,H,S	POS	5	8	S	85%	RA	24-Sep	466.00	355	555	536		N	N	O	12	N
84	70	M	1021853	B+	24-Sep	F	2	D,H,S	POS	5	15	S	86	RA	24-Sep	477.00	688	355	578	64	N	N	O	7	S
85	78	M	1021855	O-	24-Sep	C,B	4	D,H	POS	5	12	O	93%	RA	24-Sep	277.00	48	2277	363	33	N	N	O	6	S
86	64	M	1021857	B-	24-Sep	F,B	5		POS	5	8	S	82%	RA	24-Sep	477.00	533	869	336	66	Y	N	O	9	S

87	52	M	1021864	B+	19-Oct	F,B	2		POS	5	15	S	88%	RA	19-Oct	277.00	58	4336	566	477	Y	Y	V	13	S
88	60	M	1021865	AB+	03-Sep	F	3	D,H	POS	5	12	S	88	RA	03-Sep	263.00	522	1567	366		Y	Y	V	15	N
89	65	M	1021904	B+	07-Sep	F	3	D,H	POS	5	15	S	86%	RA	07-Sep	966.00	754	5000	766		Y	Y	V	10	S
90	58	M	1021922	A+	03-Sep	F	2		POS	5	16	S	88	RA	03-Sep	676.00	322	4666	65		Y	N	R	14	N
91	72	M	1021925	A+	12-Sep	F,B	3	D,H	POS	5	15	O	93	RA	12-Sep	466.00	355	655	488	54	Y	N	R	15	N
92	60	M	1021930	A+	11-Sep	F,B	8	S	POS	5	15	O	95	RA	11-Sep	377.00	565	774	551		Y	N	R	5	S
93	58	M	1021950	O+	11-Sep	F,B	6	D	POS	5	12	M	97%	RA	11-Sep	344.00	766	564	44		N	N	O	15	N
94	69	M	1021972	O-	03-Sep	F,B	4		POS	5	6	O	94%	RA	03-Sep	755.00	34	644	53		N	N	O	13	N
95	82	M	1021982	O-	05-Aug	F	4	D	POS	5	6	M	99	RA	05-Aug	755.00	454	456	477	33	N	N	O	12	S
96	58	M	1021989	B-	05-Sep	C	3	D	POS	5	6	M	99%	RA	05-Sep	64.00	23	54	56	3	N	N	O	12	S
97	71	M	1021997	A+	03-Sep	C	3		POS	5	7	S	80	RA	03-Sep	75.00	22	441	45	2	N	N	R	6	S
98	50	M	1021999	A+	12-Sep	C	3		POS	5	12	S	86	RA	12-Sep	73.00	54	378	54		N	N	R	9	S
99	36	M	1022005	O+	23-Aug	C,B	6	D	POS	5	12	M	100	RA	23-Aug	442.00	544	677	33	53	N	N	R	6	S
100	38	M	1022006	O+	26-Aug	F,C	5		POS	5	12	O	92	RA	26-Aug	34.00	367	453	22	45	N	N	R	8	S
101	58	M	1022008	O+	28-Aug	C	5	D	POS	5	8	O	92	RA	28-Aug	366.00	565	4875	446		Y	N	O	10	N

102	43	M	1022012	O+	27-Aug	C,B	5		POS	5	6	S	81%	RA	27-Aug	477.00	355	4543	122	23	Y	N	O	8	S