

# A Study to Compare the Disease Severity between Vaccinated and Unvaccinated Covid 19 Patients in Tumkur City

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## INTRODUCTION

WHO declared coronavirus 2(SARS-CoV-2) as a pandemic on March 11, 2020. It was the scenario the public health community had feared for decades. A dangerous virus emerged and was spreading rapidly around the world.

COVID-19 vaccines have been rapidly developed and distributed to help fight the pandemic. The four vaccines, which were given EUA in India are Covaxin, Covishield, Sputnik V and Moderna.<sup>3</sup>India began its vaccination program on 16 January 2021. A second wave beginning in March 2021 was much more devastating than the first, with shortages of vaccines, hospital beds, oxygen cylinders and other medical supplies in parts of the country.<sup>5</sup> By late April, India led the world in new and active cases. On 30 April 2021, it became the first country to report over 400,000 new cases in a 24-hour period.<sup>6</sup>

The objective of the study is to assess the severity of Covid 19 infection among those vaccinated and unvaccinated as this will help us to assess the efficacy of the vaccines.

## METHODOLOGY

A Cross sectional study designed to assess the severity of Covid-19 disease between vaccinated and not vaccinated population.

By Convenient sampling technique the data of all those patients who were admitted in tertiary care centers in Tumkur district during the second wave (April 2021- July 2021) of Covid 19 infection were assessed from their medical records.

All the data collected from the data base managed in the respective tertiary care centers were assessed for the severity of the Covid 19 infection by evaluating their CT scores, lymphocyte/neutrophil ratio, platelet distribution width, medical treatment provided and outcome and was compared to the vaccine status.

## RESULTS

CHART 1. Distribution of subjects based on their age

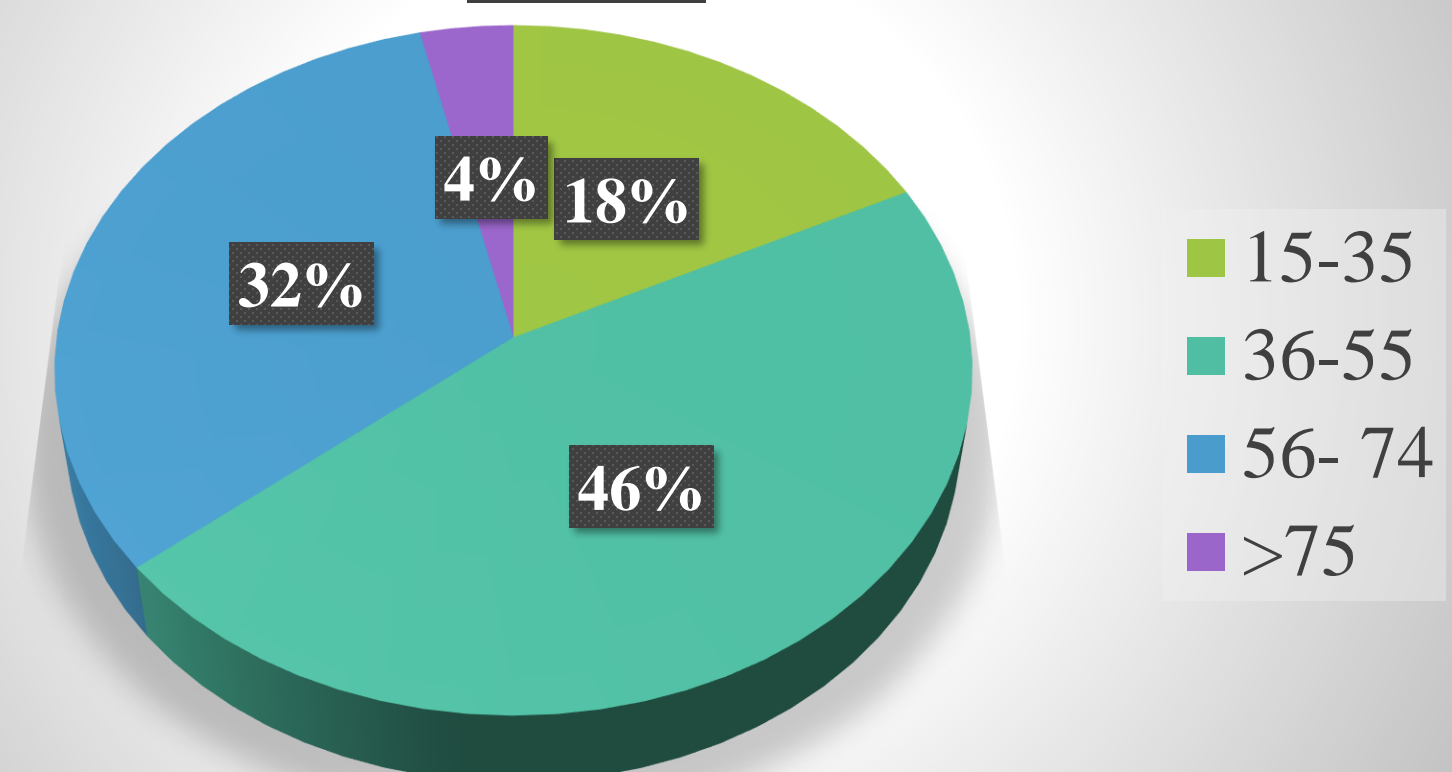


CHART 2. Distribution of subjects based on vaccine status

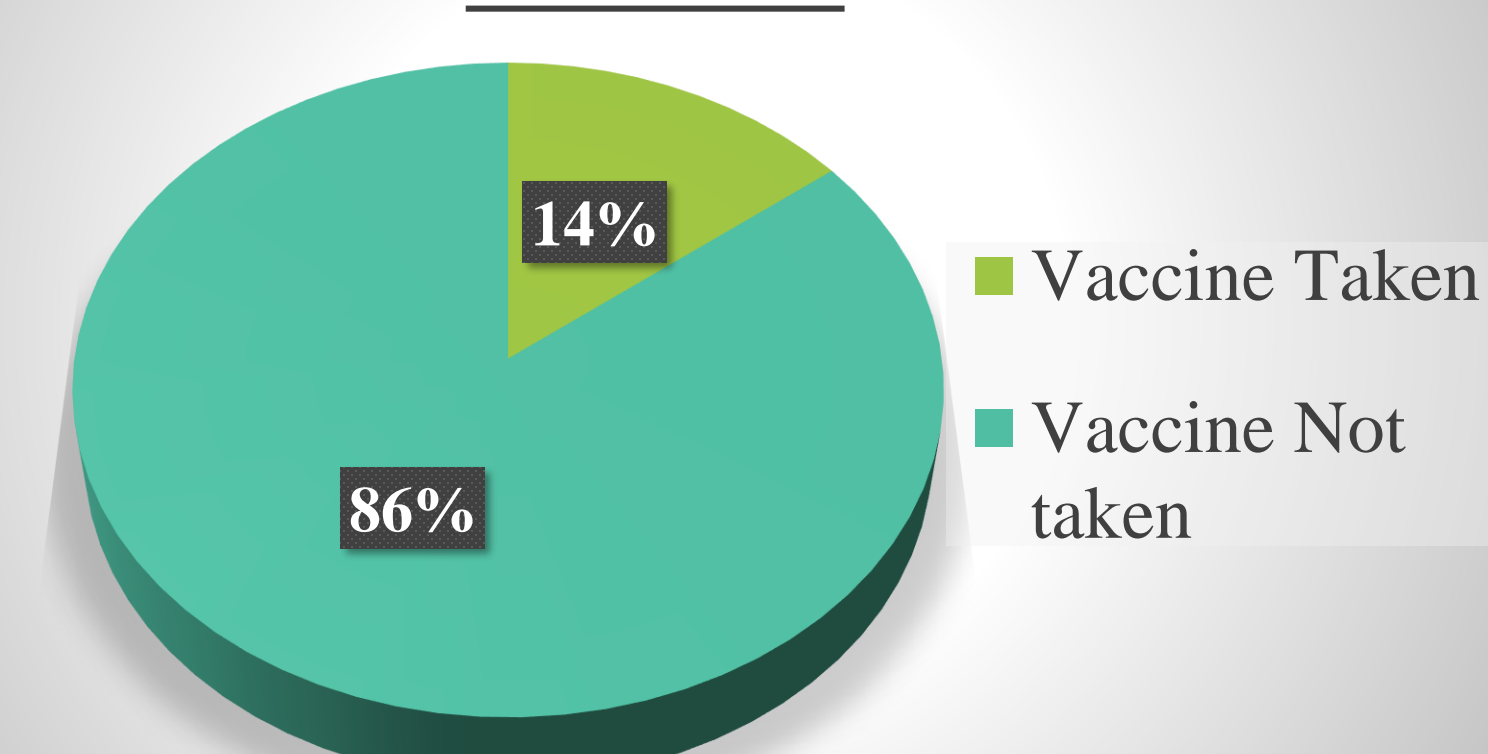


CHART 3. Distribution of subjects based on glyceemic status

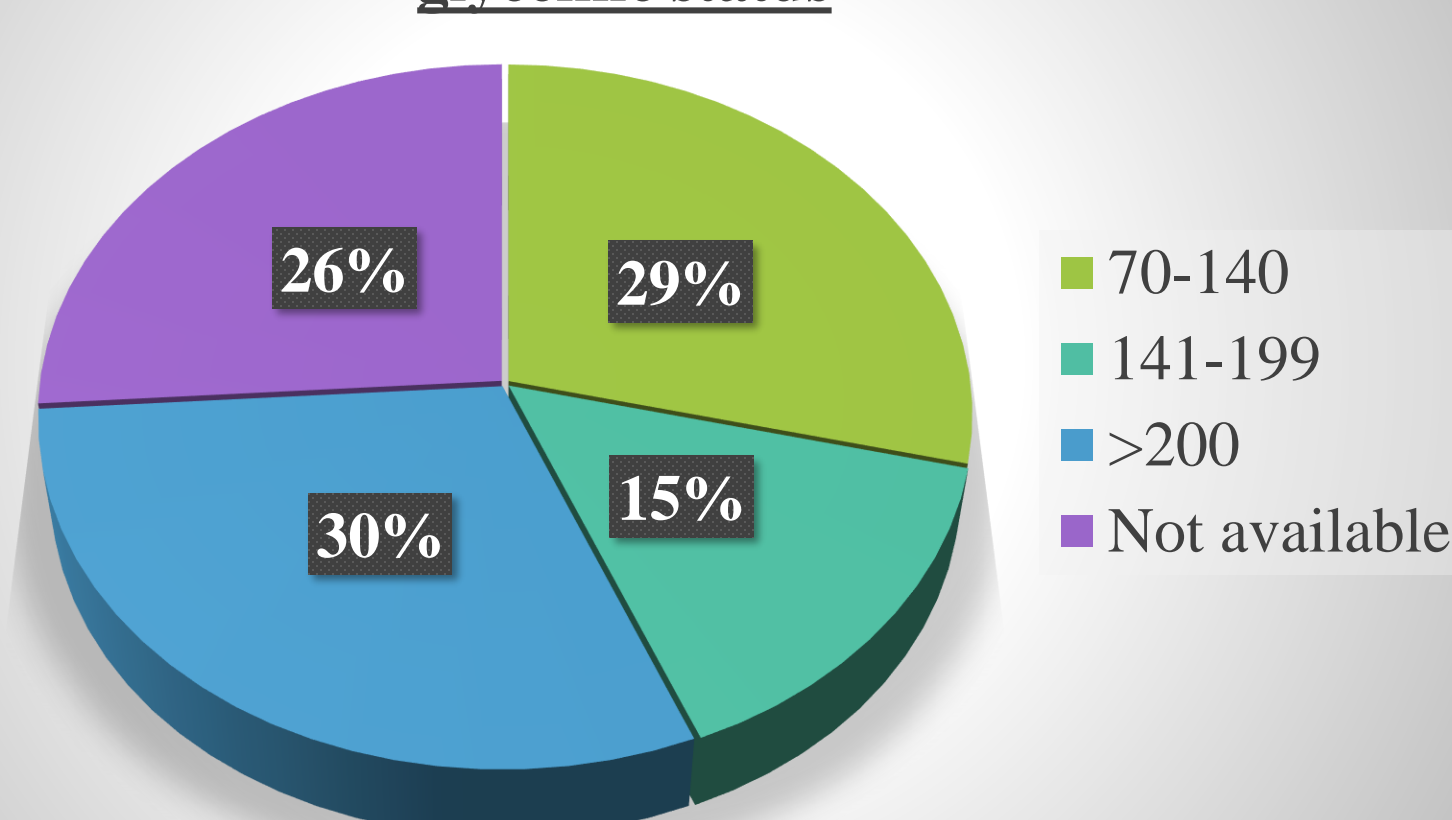


CHART 4. Distribution of subjects based on hypertensive stages

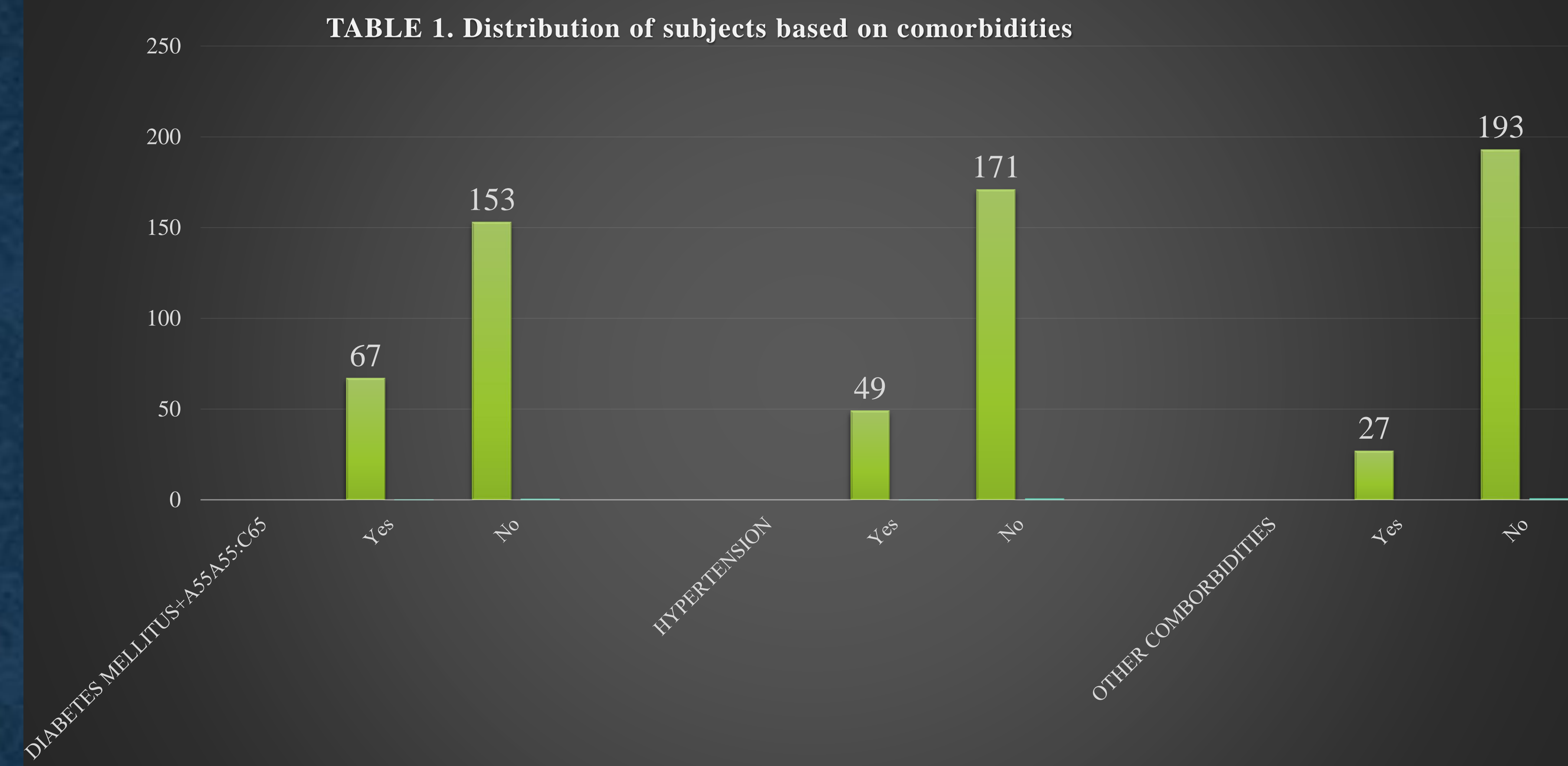
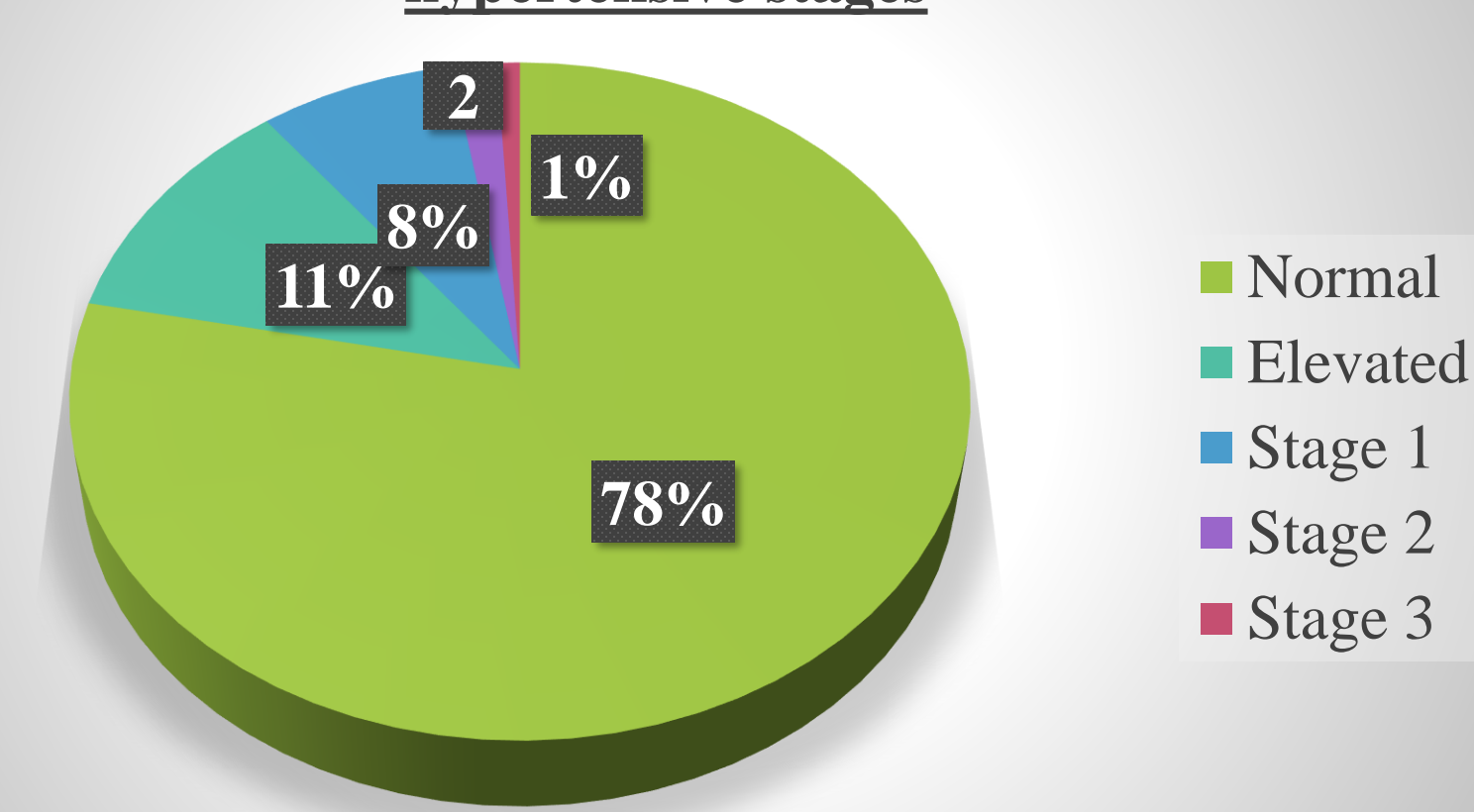


CHART 5. Distribution of Subjects based on Intubation Status

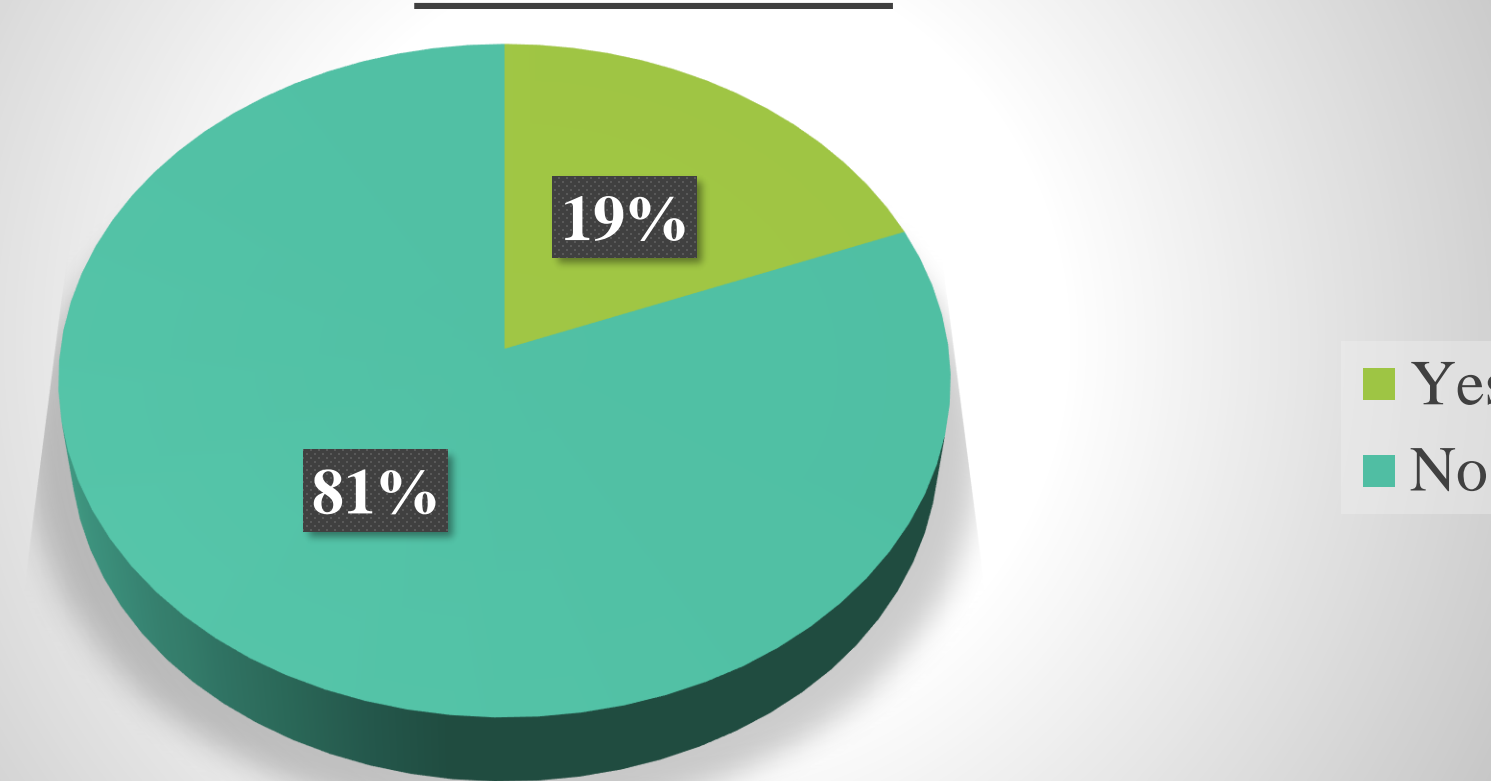


CHART 6. Distribution of Subjects based on Treatment Outcome

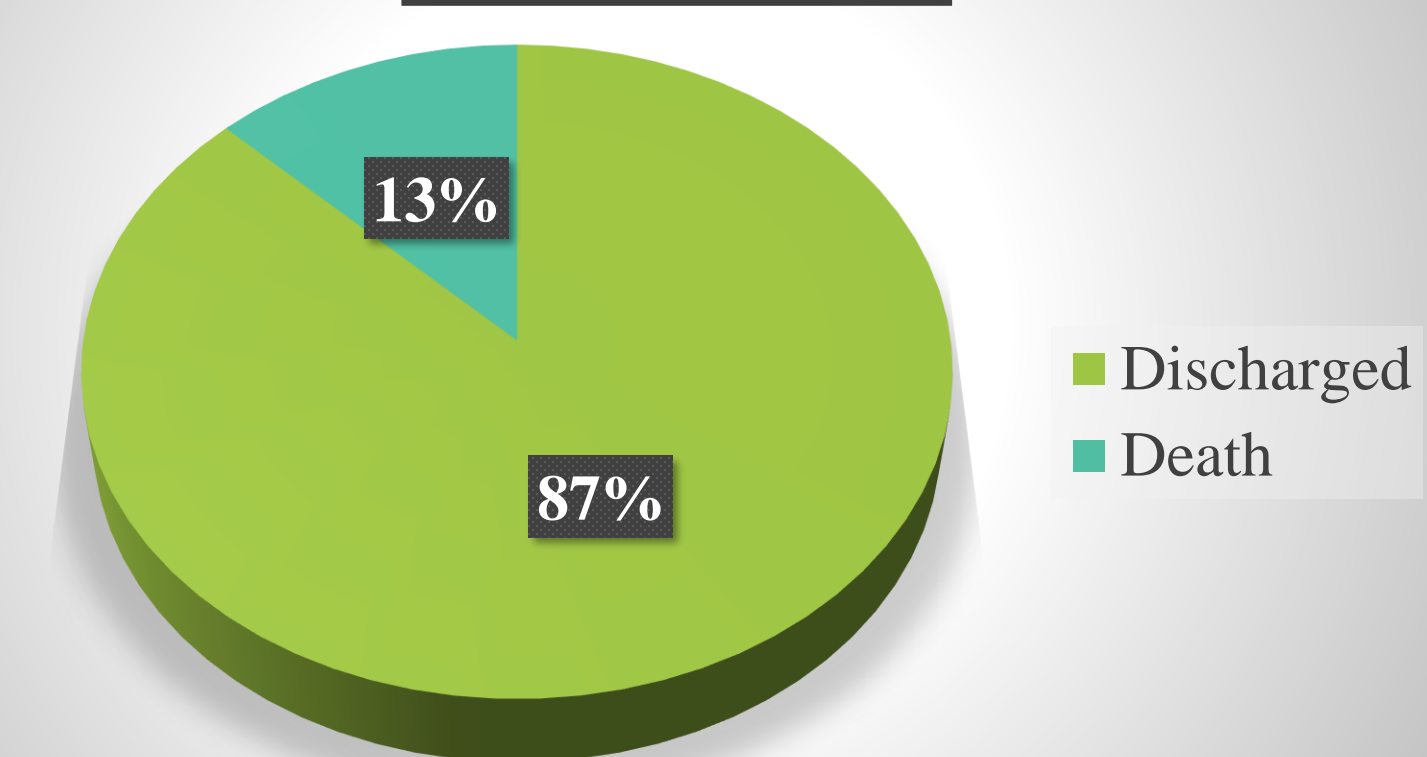


CHART 7. Distribution of subjects based on symptoms

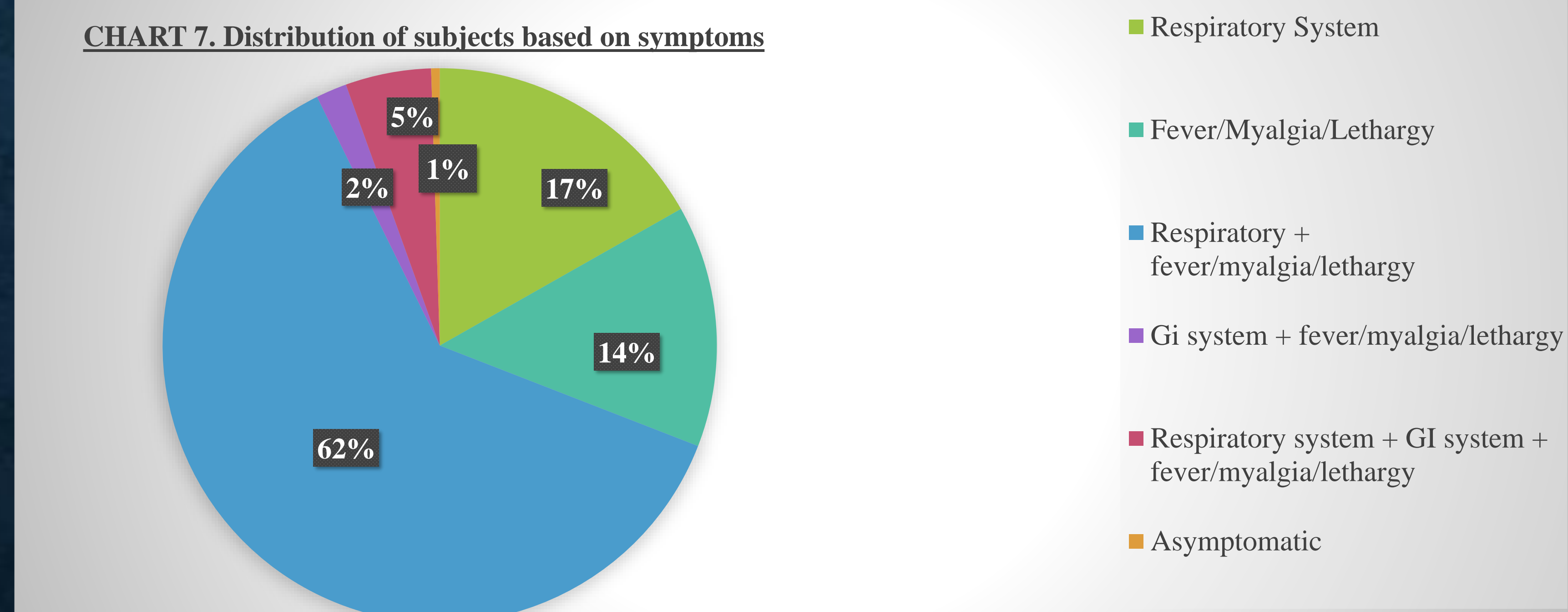


TABLE 2. Distribution of subjects based on association between covid vaccine status with other covid severity factors

	VACCINE TAKEN	VACCINE NOT TAKEN	TOTAL	CHI SQUARE	P VALUE
<b>RT PCR</b>					
POSITIVE	22	161	183	4.238	0.12
NEGATIVE	6	16	22		
NOT DONE	3	12	15		
<b>CT SCORE</b>					
NO CHANGES	0	7	7	10.414	<b>0.034</b>
MILD	11	25	36		
MODERATE	11	90	101		
SEVERE	8	58	66		
NOT DONE	1	9	10		
<b>NEUTROPHIL LYMPHOCYTE RATIO</b>					
<5.94	21	103	124	2.831	0.243
>5.94	5	58	63		
NOT DONE	5	28	33		
<b>PLATELET DISTRIBUTION WIDTH</b>					
<17	7	66	73	0.602	0.74
>17	1	4	5		
NOT DONE	5	37	42		
<b>EOSINOPHIL</b>					
EOSINOPE NIA	6	64	70	3.489	0.625
NORMAL	19	90	109		
MILD EOSINOPHILIA	1	3	4		
MODERATE EOSINOPHILIA	0	1	1		
SEVERE EOSINOPHILIA	5	30	35		

## CONCLUSION

- A total of 220 patients were evaluated 188 (85.5%) were not vaccinated and 32 (14.5%) were vaccinated with either single or both doses.
- 63(28.6%) had a neutrophil to lymphocyte ratio of >5.94 and 5 (2.3%) had a platelet distribution width more than 17%.
- When we studied association of vaccine status with other factors, it showed statistically significant results with CT Score (P= 0.034), i.e., most of the patients who were not vaccinated had either severe or moderate CT changes.
- Finally, from our study we can conclude that the severity of infection was lesser in vaccinated people when compared to the non-vaccinated ones.
- It can be concluded that the need of complete dose of vaccine is necessary to overcome the pandemic completely, but with vaccine hesitancy of people doubting its effectiveness. Vaccine hesitancy needs to be addressed and complete dosage of vaccination needs to be encouraged through health education as it is the greatest threat to overcome the pandemic.