



Monthly Trends of COVID-19 Cases from January 2021 to June 2021 during the COVID-19 Pandemic at a Tertiary Care Hospital, Tirupati

Dr. Roshan Kamal Topno¹, Dr. G. Rajaram², Dr. Madhusudan³, Dr. Ilaf Nikhath¹, Dr. C.H. Srinivasa Rao⁴

¹2ND Year PG, Sri Venkateswara Medical College, Tirupati.

²Associate Professor, Sri Venkateswara Medical College, Tirupati.

³Scientist MRU, Sri Venkateswara Medical College, Tirupati.

⁴Professor & HOD, Sri Venkateswara Medical College, Tirupati.

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ABSTRACT

In this study, VRDL lab of Tertiary Care Hospital, Tirupati has performed an analysis the monthly trend of diagnose suspected COVID-19 samples by RT-PCR test from January to June 2021. The pattern of prevalence of the COVID-19 during the period impelled us to do this retrospective study. Out of 201,004 collected swab samples 31,151 (15.50%) were found positive, and the rest and 169,853 (84.50%) negative. In the second wave of Corona cases, the active cases reached their highest peak during the month of May, which showed the 16,097(27.01%) COVID-19 positive. The number of Corona cases exhibited trends of the high number and low number in the rest of the months. The peak duration of infection was from April to May had shown 61 Days with a slit fluctuation that gave the unsafe outlook. From June onward, there was a decrease in the number of active cases were observed. COVID- 19 pandemic is demonstrating trends of peak during different months. As the third COVID wave is probable, therefore we should be plans to achieve Herd immunity by mass vaccination would be the top priority for the Government of India to prevent the COVID-19.

Keywords: WHO, Pandemic, COVID-19, RT-PCR

I. INTRODUCTION

Coronavirus disease-19 (COVID-19), produced by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has developed into a worldwide pandemic, giving rise to severe health intimidation globally [1]. Multiple countries got affected badly in this terrifying pandemic of COVID-19 during the first wave. The viral agent causing infection was the newly discovered SARS-CoV-2 virus which was first identified in Wuhan, China in December 2019. In India, it was first reported on 30th January 2020 [2]. Although the

positive cases had been reported in February, the main peak initiated in early March 2020 [3]. The second wave has seen a different pattern of COVID-19 positive cases with unprecedented public health interventions in late summer and autumn, which follows the first wave in spring. In the second wave, affected countries introduced a series of firm prevention measures, including home confinement, followed by three months of progressive restriction of social interaction, work, and commercial activity [4, 5]. The most common signs and symptoms in both waves were Fever, cough with expectoration, shortness of breath, myalgia, sore throat, diarrhea, and loss of appetite or taste sensation which become the primary indicator as in other viral infection [6,7,8]. As the infection during the period is high prevalence impels us to formulate a rapid diagnosis and proper treatment at an alarming rate in our tertiary care hospital. With this approach, we here showed the monthly COVID-19 positivity trends at Tertiary Care Hospital, in Tirupati.

II. MATERIALS AND METHODS

It is a retrospective analysis of the COVID-19 infection during the period from January to June 2021 from the suspected COVID-19. Throat swab / nasopharyngeal swab samples were collected, processed, and performed the reverse transcriptase-polymerase chain reaction (RT-PCR) test. All the samples were enrolled and diagnosed here in our Virology Research and Diagnostic Laboratory (VRDL) lab in Sri Venkateswara Medical College, Tirupati. We focused on the actual prevalence of the COVID-19 positive cases month-wise. The study included all the age groups including children to adults. All the following data elements: age, sex, date of symptom onset and details of CT value of positive cases



included in our surveillance criteria during the second wave were noted.

III. RESULT

Total 201,004 swab samples have been tested during the period of January 2021 to June 2021. Among them, total 31,151 (15.50%) samples were found COVID-19 positive and 169,853 (84.50%) negative. As per the results in the second

wave, the peak of active COVID-19 cases was recorded during the month of May with 16,097(27.01%) individuals. (Table1)

The peak duration was 61 Days with only a little fluctuations in the number of active cases from April 2021 to May 2021 as per the (Table2) numbers of active cases decreased.

SL NO	MONTH 2021	TOTAL TEST	POSITIVE	NEGATIVE
1	JANUARY	14,337	146	14191
2	FEBRUARY	9800	108	9692
3	MARCH	19,493	633	18,860
4	APRIL	38,043	9033	29,010
5	MAY	59,584	16,097	43,487
6	JUNE	59,747	5134	54613
	TOTAL	201,004	31,151(15.50%)	169,853(84.50%)

Table1: Month wise COVID-19 Case Distribution

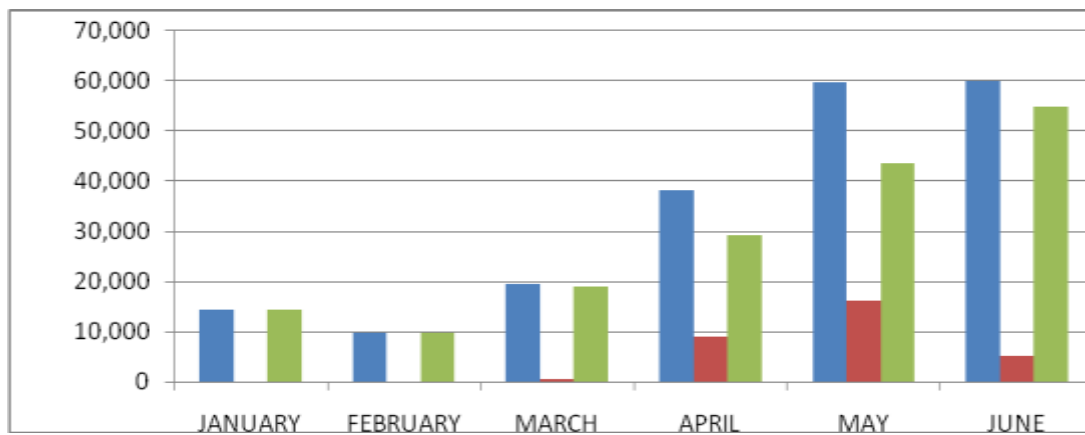


Table2: Monthly Trends of COVID-19 Situation (Blue: Total cases; Red: Positive cases; Green: Negative cases)

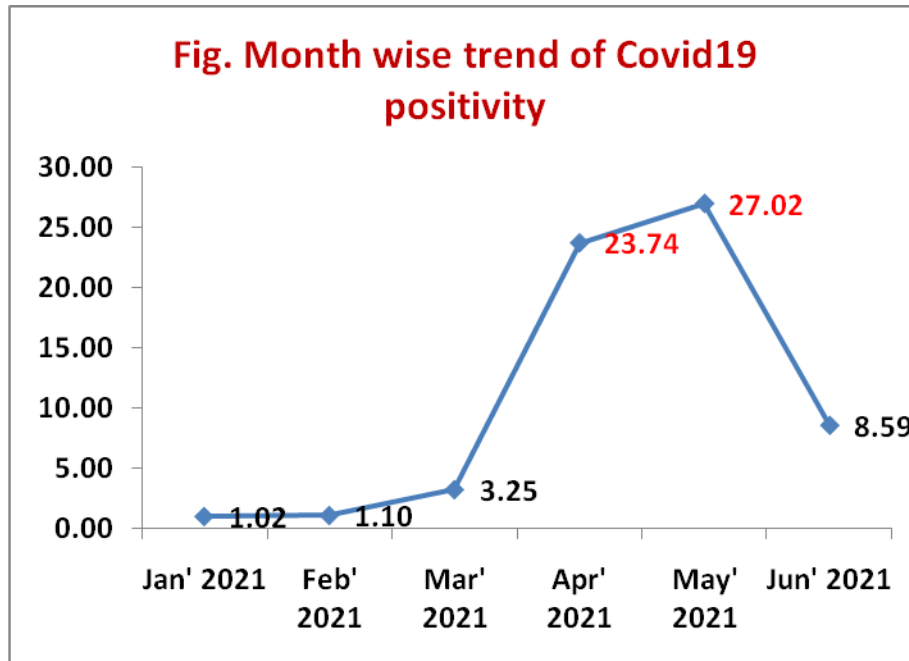


Table3: Month wise trends of Covid19 positivity (percentage)



Table:4 Month wise percentage change in CT value (Severity)

IV. DISCUSSION

Many factors are playing the major role to hike the occurrence of COVID-19 infection around the world. These factors are mainly Lower socio-economic activities; negligence in hygienic behavior, lack of proper health care facilities, irresponsible traveling, etc are some of the common in society [9, 10]. These are all the parts of the second wave of COVID-19 which came up

with a devastating impact on our country. All over India the positivity ratio of COVID-19 increases massively high during April and May. Though, the Covid situation more or less every month but highest peak in May month disturbed the situation of the Indian health system [11]. The Covid infection rate among the interstate migrant groups appeared much higher as compared to non-migrant groups. Apart from WHO guidelines, the Indian



government rapidly encouraging the citizens for vaccination, this is only the primary approach to minimize the frequency of Covid infection. This would also enhance the chance of herd immunity in the Indian population. [12, 13]. As far as ours' concern, we also faced the almost same problem of COVID-19 infection in May. There has not been only the peak of new positive cases but also deaths from this viral infection. The government had planned to impose increased public health support and safety measures. So, many serious cases have been impelled us to provide better health care facilities along with the national vaccination program which still under goes all around the country.

In this retrospective investigation, gave the prevalence of second phase of COVID-19 infection in month-wise pattern. The maximum positive cases were reported in May. This shows the negligence of people in following the COVID-19 guideline in their respective localities, apart from the control measures taken by government on large scale. With 27.02% positivity the May faced the devastating circumstances. The **Table3** shows the highest ever in COVID-19 diagnostic. During April and May, the viral load (Concerning CT value) increases significantly, showing the possible increase rate of infection (**Table4**). This would enhance the concern about every possible way to minimize not only the effect of the viral infection but also aware among the people regarding survival and proper vaccination.

V. CONCLUSION

This was the first time in the pandemic, several lives have been collapsed and many others require hospital care instantly that's no one expected ever. Government optimistically has the concern to allot limited resources to protect their city in the best possible way. Our Indian Council of Medical Research (ICMR) has been shown its responsibilities to control the COVID infection vigorously. Scientists and doctors all around the country also paid their effort sincerely. Including these, the Indian army as usual provided the supportive logistics and accelerated rollout of the vaccination program in the meantime of the peak of the COVID infection. For COVID 19 prevention and control measure government has been started January 2021(21) mass vaccination of the people either by COVISHEILD or COVAXIN therefore it will be helpful to prevent the COVID 19 disease. In the society, application of the information education and communication (IEC) tools reduces the COVID 19 case morbidity. Maintaining the Social distance uses of face masks and proper hand

hygiene with frequent hand wash with soap or uses of hand sanitizers. In hospital and COVID, 19 laboratory proper wearing of PPE kit is giving protection against the COVID 19 infection.

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