

## Susceptibility of males in second wave of Covid and infection in young: A comparison of two waves

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Received: 30-11-2021 / Revised: 23-12-2021 / Accepted: 01-01-2022

### Abstract

Many countries have seen a two-wave pattern in reported cases of coronavirus disease-19 during the 2020 pandemic, with a first wave during spring followed by the current second wave in late summer and autumn. Empirical data show that the characteristics of the effects of the virus do vary between the two periods. Differences in age range and severity of the disease have been reported, although the comparative characteristics of the two waves still remain largely unknown. This was a challenging time, but we should faith on science to help us get through these pandemic and future ones. Differences in age range and severity of the disease will reported, although the comparative characteristics of the two waves still remain largely unknown. Those characteristics will be compared in this study using data from two equal periods of 3 and a half months. The first period, between 15th March and 30th June, corresponding to the entire first wave, and the second, between 1st July and 15th October, corresponding to part of the second wave. The most frequent signs and symptoms has been noted. Several differences in mortality risk factors have also been observed. These results might help to understand the characteristics of the second wave and the behaviour and danger of SARS-CoV-2 in India. Further studies are needed to confirm our findings.

**Keywords-** Pandemic, SARS-CoV-2, reproduction number

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### Introduction

The latest wave of corona virus is spreading like a 'tsunami' in India. As on April 23, 2021, the COVID-19 instances have crossed the 15.9 million, with 1,85,000 deaths. The 2nd wave is evolving at an exceptional speed in comparison to the 1st wave. There can be numerous factors responsible for the elevated number of cases inside the second wave. Its miles found that the mutant virus has extra effective transmission functionality and its incubation period is likewise lesser. The sharp rise can also be attributed to the better checking out; but the doubts were raised about the first-rate of checking out as numerous cases of superb Covid-19 signs and symptoms are mentioned as negative on the RT-PCR test.

Across the world, the space among the two waves of the pandemic is not uniform as it relies upon on vaccine coverage, human behaviour, and the variant of the virus. It has been stated that numerous elements may want to have caused upward thrust in reproduction variety (R0) in India. If the number of COVID-19 cases rises on everyday foundation with the cutting-edge phenomenal speed; there can be the exhaustion of resources and manpower. There was an acute shortage of clinic beds, oxygen supply, drugs, and ventilators across the United States of America for COVID-19 patients[2].

It's miles apparent that the prevention is higher than therapy for this ailment and all the viable measures along with engagement and participation of public in controlling the disorder, strict implementation of COVID appropriate behaviours (i.e. social

distancing, use of face mask, and hand sanitation), mini lockdowns, night time curfews, micro containments, and so forth must be implemented and discovered through the public.

Current takes a look at in Japan in comparison the severity and traits of the first and 2nd waves the findings indicated that inside the first wave, the clinical machine was beneath greater stress with greater intense cases on admission. In the second wave, patients have been more youthful with fewer underlying diseases and decrease mortality fees[3]. As we are able to try to find the underlying cause of the aggressiveness 2nd wave. The second wave turned into worse in terms of effects of treatments with several younger and middle-elderly sufferers requiring excessive oxygen and ventilation help and with extraordinary signs and symptoms.

"It is anticipated that the 0.33 wave might be special than the second wave, as a number of the active operating populace has had exposure to the disease, thereby growing immunity to combat towards the ailment. As according to medical estimates, the third wave is probably shorter and milder, in lieu of mortality and morbidity, much like the Spanish flu, however we should put together with the advancements in treatments and preparedness of the healthcare region, so that we can fight towards the 1/3 wave correctly."

### Materials & Method

In this single-centre, deep study, patient's test centre confirmed as having severe acute respiratory syndrome coronavirus contagion conferring (SARS-CoV) to WHO provisional management[9]3 and elderly 60 years and elder from NC Medical and hospital, Israna, Panipat, Haryana, India, remained enrolled.

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**Patient And Data Sources**

The clinical data having recent contact history, clinical symptoms and signs, co morbidities, and laboratory reports upon admission were reviewed. In this single-centre study, patient's test centre confirmed as having severe acute respiratory syndrome corona virus contagion conferring (SARS-CoV) to WHO provisional management and 324 total patients admitted with the chief underlying complaints in NC, Medical college, Panipat city, Haryana, enrolled for study. In total of 324 there were 232 males and 92 were females.

**Definitions**

Based on the New Coronavirus Pneumonia Prevention and Control Program (version seven) from the National Health Commission of

China, patients with SARS-CoV contagion were separated into asymptomatic carriers, mild patients, moderate patients, severe patients, and critically severe patients (Table 1). According to the standard, asymptomatic carriers were not categorised as confirmed cases. In our study, asymptomatic carriers were not involved in any group. The patients with a history of interaction to civil hospital within 14 days before sickness beginning were recognized as tourists or residents of Panipat.

**Statistical Analysis**

Statistical analyses were performed with SPSS (version 26.0). Constant variables are termed as the median (interquartile range, IQR). Unconditional variables are obtainable as n (%).

**Table 1: Different clinical types of patients with SARS-CoV-2 infection**

Type	Characteristics
Asymptomatic carriers	Laboratory-confirmed SARS-CoV infection without signs and imaging findings
Mild	Mild clinical symptoms without imaging findings of pneumonia
Moderate	Fever or respiratory symptoms with imaging findings of pneumonia
Severe	Meet any of the following: 1. Respiratory distress with respiratory frequency $\geq 30$ breaths/min 2. Pulse oximeter oxygen saturation (SpO <sub>2</sub> ) $\leq 93\%$ in resting state 3. PaO <sub>2</sub> /FiO <sub>2</sub> $\leq 300$ mm Hg (1 mm Hg = 0.133 kPa) 4. Showing a rapid progression ( $>50\%$ ) on CT imaging within 24–48 hrs
Critical Severe	Meet any of the following: 1. Respiratory failure in need of mechanical ventilation 2. Shock 3. With another organ dysfunction

[1] Asymptomatic carriers were not classified as confirmed cases of COVID-19.

The sharp rise can also be attributed to the higher testing; but the doubts have been raised about the quality of testing as several cases of positive Covid-19 symptoms were reported as negative on the RT-PCR test. There were several obvious differences in the first and the second wave (Table 1). In the 2nd wave the paediatric and younger individuals were getting infected, in addition to older ones [4]. The symptoms of COVID 2nd wave were also variable. This study investigated the severity and ratio in both genders of the two waves in hospitalized patients in Israna, Panipat. Epidemiological evidence, signs and indications on admission, laboratory as well as radiological results, stroke and forecast data were found from medical records. All information was double checked by two individual doctors. Clinical features along with underlying complaints and results of the two age groups were compared. Statistical analyses were performed with

SPSS (version 26.0). Constant variables are termed as the median (interquartile range, IQR). Unconditional variables are obtainable as n (%). We evaluated age, gender, symptoms, comorbidities, mortality, supportive care, medication, and the outcome for the patient. We extracted the data from hospitalized patients in Nemi Chand Medical College, Israna, Panipat.

**Observations**

In second wave a total of 801 confirmed as having SARS-CoV contagion were involved in the present study. In which 610 were males and 191 were females. The percentages of males were 76% and percentages of female were 24% (table 1). As the table shows more than double males were positive than that of females as we observed in first wave (table -2).

**Table 1: Figures and Proportions of Male and Female (Second Wave)**

S. No.	Gender	Total	Out of 801
1	Male	610	76%
2	Female	191	24 %

**Table 2: Figures and Proportions of Male and Female (First Wave)**

S. No.	Gender	Total	Out of 494
1	Male	357	72.3 %
2	Female	137	27.7 %

**Results**

As we have also segregated the patients on the basis of their age, we observed in our study majority of patients were lying in the range of 20- 40, both in male and female category. Ratio of males in this range were observed maximum 56.30%, on other hand the ratio of female in this range were lesser than that of males (20-40, 38.68%), table 3, while comparing it with second wave we observed that majority of the patients affected were lying in the range of 26-35 years and 36-45 years although the number of COVID infected females are significantly lesser than that of COVID infected males.

**Table 3: Segregation of patients on the basis of their age (First Wave)**

S. No.	Gender	0-20	20-40	60-80	80-above	Total	Out of 494
1	Male	63	201	22	1	357	72.3%
2	Female	40	53	3	0	137	27.7%
							Total= 494

**Table 4- Age wise Distribution and % of Covid-19 Positive Patients**

	Gender	No. in years	%	No. in years	%	No. in years	%	No. in years	%	No. in years	%	No. in years	%	No. in years	%	No. in years	%	Total PT	%
Sr. No		0-14	%	15-25	%	26-35	%	36-45	%	46-55	%	56-65	%	66-75	%	≥76	%	Total PT	%
1	Male	18	2.2%	154	19%	203	25%	127	16%	67	8.4%	24	3%	13	1.6%	4	0.5%	610.75	76%
2	Female	14	1.7%	54	6.7%	50	6.2%	32	4%	20	2.4%	16	2%	4	0.4%	1	0.1%	191.22	24%
<b>Grand Total</b>																	<b>801</b>	<b>100%</b>	

**Discussion**

Within the present investigation we extended the have a look at to July to mid October 2021 to cover equal periods of three and a half months. Extra sufferers have been admitted during the second one wave, they have been more youthful and there have been fewer deaths, in agreement with consequences suggested by using previous studies in numerous nations[5,6,7].

In previous months, due to this corona pandemic (COVID-19) many nations get into disaster. Studies have additionally notified that rate of mortality of men are worse than that of women. It has been predictable that gender distinction can contain the immune response to a pathogenic mediator, in addition to the inclination for several respiratory[8] diseases. We've got formerly mentioned the primary epidemiological and clinical characteristics and the mortality danger factors of the first wave patients at some point of a month of mid of March to June 2020[9]. The reasons for the clear differences among the two periods are not yet regarded even though it has been suggested that a brand new variation of SARS-CoV-2 emerged in early summer time 2020 in Spain[10], a variation that was linked to outbreaks amongst young agricultural people within the north-east of the United States of America. Transmission to the overall population in that region changed into then replicated throughout the USA.

Furthermore, fewer sufferers required respiratory help through invasive mechanical air flow strategies. This development inside the consequences of admitted patients is probably connected to the fact that the health device in our us of a, as in many others, has given that grow to be higher prepared. We have more experience and higher remedy regimens, and we perform greater diagnostic assessments, permitting critical cases to be detected early and to obtain extra powerful remedies. In this regard, for the duration of the second period, sufferers have been dealt with extra often with dexamethasone, as advised by using the healing have a look at[11], and hydroxychloroquine and loponavir-ritonavir have been substituted by way of remdesivir and tocilizumab, which numerous research have stated to be more effective in preventing loss of life and shortening the duration of clinic remains[12-14]. The usage of hydroxychloroquine for the remedy of COVID-19 is debatable. A few research have pronounced that this drug reduces mortality[15], however others have not showed this locating[16]. Our subjective clinical impact is that hydroxychloroquine can be beneficial in the first days of hospitalization. But, in the 2nd wave, we up to date the treatments according with the tips of the branch of health of the self-sufficient government of Catalonia, and we cannot compare its effectiveness inside the intervals. Some other component that could have contributed to the lower in the case fatality price is the development in environmental conditions. As an example, heat weather and improved air great following the city lockdown had been suggested to correlate negatively with SARS-CoV-2 transmissibility[17-19].

A brand new and terrific function of the occurrence of COVID-19 in this second wave become age institution, in our affected person populace is the higher occurrence became found in between 26-35 years (males:203, girl:54) and 36-45 years (adult males:154, women:

50). There are sizable apparent variations inside the age institution of first and the second wave that in 2nd wave more younger individuals are getting inflamed, in addition to older ones[4] extra or less. The symptoms of COVID 2d wave also are variable, specifically gastrointestinal[20].

The predominant signs and symptoms of infection (fever, dyspnea, pneumonia cough) have been comparable in both waves, although the patients within the second wave offered renal (acute kidney failure) and gastrointestinal symptoms (vomiting, belly pain) greater regularly together with the difficulty in breathing. The existing study did not locate any differences between the frequency of concomitant diseases within the two waves, comparable findings to those of our initial examine[11].

Ultimately, regarding the danger factors related to mortality, we also observed differences between the primary and 2nd waves. A couple of regression evaluation showed that older age and the presence of fever, dyspnea, acute respiration distress syndrome, diabetes, and cancer had been independently associated with better mortality inside the first wave, while age, gender, and the presence of acute respiration distress syndrome and gastrointestinal issues alongside the unbearable joints pain had been associated with mortality in the 2nd wave.

Boundaries of the study- The hindrance of the prevailing have a look at is the small pattern length. That is an uncentric examine in a medium size health facility, and that covers a exceptionally small geographical area. Similarly, we're on the restrict of statistical significance for the calculation of mortality variations. Consequently, our results should be eager about caution. But we trust that the results obtained are relevant due to the fact they is probably representative of many similar centres within the Mediterranean location, and little data is but available in this issue.

**Conclusions**

Future forecasts are difficult to are expecting. We assume that COVID-19 will not disappear, new variants of the virus may appear, the vaccination procedure can predictably close all year 2021 or more, until a sufficiently high percent of the populace is included, and the preservation of strict lockdowns for very long intervals is difficult to bear from the monetary, social and psychological points of view. Presently, the complete international is inside the centre of the second or possibly the third wave, and the results of our have a look at indicate that the traits of the infection may range through the years. We believe that the most critical conclusion of our paintings is that we should stay vigilant in the constant take a look at of the traits of the disease, be able to alter remedies speedy, if essential, and disseminate our consequences to the medical network and society as soon as possible for coordinate and worldwide action. At the same time as men were extra prone to infected with COVID-19 in both waves than women, in 2d wave the more youthful group are extra at risk of be infect with worse consequences of gastrointestinal issues with unbearable joints pain. Further epidemiological and biological investigations are required to higher apprehend the intercourse-specific variations for powerful interventions.

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**Conflict of Interest: Nil Source of support: Nil**