Changing Trends in COVID-19 Symptomatology: A Survey-Based Analysis

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Abstract India currently ranks the highest in the world with over 3.86 lakhs new COVID-19 cases per day. With a spike in the number of cases in the second wave of COVID-19 in 2021 compared to the first wave of the outbreak in 2020, there have been varied clinical manifestations among masses. This study aimed to determine the changing trends in prevalence of COVID-19 symptoms during the pandemic. A cross-sectional study among 166 individuals was carried out using a self-designed survey-based questionnaire. Two groups were made on the basis of symptoms and compared: Group A- patients who tested COVID-19 positive in 2020 and Group B- patients who tested COVID-19 positive in 2021. 130 participants (78.31%) had tested positive for COVID-19, out of which 110 (84.62%) were symptomatic and 20 (15.38%) were asymptomatic. Fever was the most common presenting symptom (27.69%) followed by difficulty in breathing (24.62%). Group A individuals (n = 37), reported fever as the most common presenting symptom (45.95%), followed by body ache (13.51%); while those in Group B (n = 93) reported difficulty in breathing (33.33%) followed by fever (20.43%). The most common general symptoms were fever and difficulty in breathing while sore throat, cough and anosmia were the most common ENT symptoms. 57.83% had been vaccinated out of which 38.55% experienced symptoms post-vaccination. The prevalence of symptoms in the first and second wave of the pandemic can help in better understanding of the changing symptomatology of SARS-CoV-2 virus.

Keywords COVID-19 • SARS-CoV-2 • COVID-19 symptoms • ENT related COVID-19 manifestations • Post-vaccination symptoms • ROCM

Introduction

The novel coronavirus emerged in Wuhan region of China in December 2019. It was declared coronavirus disease 2019 (COVID-19) by the World Health Organisation (WHO) [1]. It is caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) [2]. As the virus continued to spread across the globe through rapid transmission mainly by aerosol mechanism and to a lesser extent by touch or contact method [3], COVID-19 was declared as a pandemic on March 11, 2020 by WHO [1].

In India, the first case was reported on 30 January 2020 and the figure crossed 0.24 million by 6 June 2020 [4]. After experiencing a sharp spike in covid-19 cases for months, the country’s pandemic curve had been flattening by January and February 2021. However, a sharp upward turn was seen with about 62,632 active confirmed cases as recorded on 27 March 2021, the highest seen since October 2020 [5]. As of 30th April 2021, India ranks highest with a total tally of 1,87,62,976 COVID-19 cases since the pandemic started in 2019, with a daily rise of over 3.86 lakh new Covid-19 cases and over 3000 deaths per day all over the country [6].

A lot of research has been going on to know about the clinical presentation of COVID-19 [2]. Since the emergence of this infectious disease in India in 2020 [4], a wide spectrum of the disease pattern has been observed till date,
i.e., from being asymptomatic or having mild symptoms to succumbing to respiratory failure and/or Disseminated Intravascular Coagulation and/or death [2, 7]. Symptoms of lower respiratory tract infection such as fever, cough, dyspnoea and chest tightness were the common symptoms that presented initially during the disease outbreak with a potential to rapidly progress to acute respiratory distress syndrome (ARDS) [8]. As the disease continued to spread over time, symptoms such as body ache, myalgia, gastric irritation, chest pain along with a variety of ear, nose and throat (ENT) manifestations such as sore throat, nasal congestion, rhinorrhea, loss of sense of smell and/or taste, dizziness and tinnitus were also reported in COVID-19 patients [2, 9]. Loss of smell has been the latest reported ENT related complaint in COVID-19 patients with a prevalence of 47.85% worldwide [9].

On 16th January 2021, India began its covid-19 vaccination programme initially for health and frontline workers which was then expanded to everyone above 60 years of age, 45 years and above and lastly to the youth, in a stepwise manner. So far, more than 15 crores of the Indian population have been vaccinated, making it one of the fastest COVID-19 vaccination drives in the world [10].

However, mild and short-lived symptoms like tiredness, myalgia and fever were most commonly reported post-vaccination in almost 90% individuals. They were most commonly seen among the younger individuals and within the first 12 h of receiving the vaccine [11].

As the pandemic ensues, a thorough understanding of the virus and its clinical manifestations is still needed. Considering the paucity of literature on the symptomatology of COVID-19 and the prevalence of ENT manifestations in these patients, this study aims to analyse the growing spectrum of clinical presentation of COVID-19.

Aims and Objectives

1. To study the prevalence of symptoms of COVID-19 during the pandemic.
2. To study the spectrum of symptoms of COVID-19 in 2020 and 2021.
3. To analyse the efficacy of COVID-19 vaccine in prevailing symptomatology.

Materials and Methods

A cross-sectional study was carried out among 166 individuals at a tertiary care hospital in Haryana, India during the COVID-19 outbreak. A self-designed survey-based questionnaire was administered and data was collected via google forms. Similar model of data collection was used by Pandey et al. [12] and Kharma et al. [13] in their studies. The survey contained a total of 14 questions (Table 1). All individuals who took the survey were informed about the purpose of the study and the confidentiality of their responses. Data regarding the age, gender, COVID-19 status (positive or negative), presenting symptoms, underlying comorbidities, mode of treatment, vaccination status, etc. were collected. Individuals who failed to fill the complete survey were excluded from this study. We assessed all the patients who tested positive and divided them into two groups:

Group A—patients who tested COVID-19 positive in 2020
Group B—patients who tested COVID-19 positive in 2021

Comparison of both the groups was done on the basis of the first symptom that appeared. The presenting symptoms were also analysed on the basis of age group. Among those who received the vaccine, age-wise comparison was done between those who were symptomatic and asymptomatic post-vaccination and also the distribution of adverse events following immunization. Statistical analysis was done using SPSS software version 24. Chi-square test was done to compare qualitative variables. p value less than 0.05 was considered statistically significant*.

Results

The study comprised of 166 participants. The demographic data of all the participants has been shown in Table 2. The study population was divided into four groups on the basis of age as 10–20 years (2.41%), 20–40 years (47.59%), 40–60 years (37.35%) and more than 60 years of age (12.65%). Majority of the participants belonged to the age group of 20–40 years. In this study, 56.02% were male and 43.98% female. Out of total 166 participants, 130 (78.31%) had tested positive with RT-PCR for COVID-19, majority of whom belonged to 20–40 years age group; while 36 (21.69%) tested negative (p value 0.028*). Among those who tested positive, 110 (84.62%) were symptomatic while only 20 (15.38%) were asymptomatic (Fig. 1). Out of 110 symptomatic patients, in 41 patients, the symptoms lasted for <5 days, in 43 patients for 5–10 days, in 19 patients for 10–14 days and in 7 patients for >14 days (Fig. 2).

As we know that there has been a significant rise in the number of cases in the year 2021 compared to 2020 [4], we grouped patients who tested positive into Group A and Group B. Group A comprised of 37 participants who tested COVID-19 positive in the year 2020 while Group B comprised of 93 participants who tested COVID-19 positive in the year 2021. Table 3 illustrates the comparison of presenting symptoms between Group A and Group B. The
| Q. no. | Questions                                                                 | Responses                   |
|-------|---------------------------------------------------------------------------|-----------------------------|
| 1     | Age (in years)                                                           | 10–20                       |
|       |                                                                            | 20–40                       |
|       |                                                                            | 40–60                       |
|       |                                                                            | > 60                        |
| 2     | Sex                                                                       | Male                        |
|       |                                                                            | Female                      |
|       |                                                                            | Others                      |
| 3     | Have you been infected with Covid-19?                                     | Yes                         |
|       |                                                                            | No                          |
| 4     | When did you test positive for COVID-19?                                  | 2020                        |
|       |                                                                            | 2021                        |
| 5     | Did you have symptoms?                                                    | Yes                         |
|       |                                                                            | No                          |
| 6     | Which of the following symptoms appeared first?                           | Fever                       |
|       |                                                                            | Malaise                     |
|       |                                                                            | Body ache                   |
|       |                                                                            | loss of smell               |
|       |                                                                            | Sore throat                 |
|       |                                                                            | Runny nose                  |
|       |                                                                            | Cough                       |
|       |                                                                            | Difficulty in breathing     |
|       |                                                                            | Chest pain                  |
|       |                                                                            | Facial pain/dental pain/loose teeth/black nasal crust/periorbital oedema |
|       |                                                                            | None                        |
| 7     | How many of the following symptoms did you experience? (More than one)     | Fever                       |
|       |                                                                            | Malaise                     |
|       |                                                                            | Body ache                   |
|       |                                                                            | Anosmia                     |
|       |                                                                            | Sore throat                 |
|       |                                                                            | Difficulty in breathing     |
|       |                                                                            | Chest pain                  |
|       |                                                                            | Cough                       |
|       |                                                                            | Runny nose                  |
|       |                                                                            | Gastric problems such as abdominal pain, diarrhoea |
|       |                                                                            | Fatigue                     |
|       |                                                                            | Ringing in your ears/tinnitus |
|       |                                                                            | Facial pain/ dental pain/ loose teeth/ black nasal crust/ periorbital oedema |
|       |                                                                            | None                        |
| 8     | For how many days did the symptoms last?                                  | < 5 days                     |
|       |                                                                            | 5-10 days                   |
|       |                                                                            | 10-14 days                  |
|       |                                                                            | > 14 days                   |
|       |                                                                            | None                        |
most common presenting symptom in this study population was fever reported in 36 patients (27.69%) with an incidence of 45.95% in Group A and 20.43% in Group B and was found to be statistically significant (p value = 0.003*). Difficulty in breathing was the second most common presenting symptom reported in 32 patients (24.62%) with an incidence of only 2.70% in Group A while 33.33% in Group B and was therefore, found to be highly significant (p value = 0.0003*). 5.41% cases in Group A did not have any symptoms while in Group B, 19.35% were asymptomatic (p value = 0.046*).

After collecting the data for all the symptoms experienced by the individuals who were COVID-19 positive, we classified them as those with general symptoms i.e., fever, body ache, malaise, difficulty in breathing, chest pain and gastric problems and those with ENT related symptoms such as cough, sore throat, loss of smell or anosmia, runny nose or rhinorrhoea (Table 4).

Table 5 illustrates the prevalence of underlying comorbidities or risk factors such as hypertension, diabetes mellitus, thyroid disease, coronary heart disease, asthma, COPD, tuberculosis and cancer. 28.08% of COVID-19 positive patients had only one risk factor, 18.85% had two risk factors, 4.29% had three or more risk factors, while majority of these patients i.e., 48.78%, did not have any underlying comorbidities or risk factors.

As per our survey, majority of the COVID-19 positive patients (47.7%) remained in home isolation, while 40.77% had hospital stay in COVID ward with or without oxygen support, 4.62% were in ICU and 6.92% were ICU with ventilatory support.

Majority of the study population (n = 166) had been vaccinated (96; 57.83%), most of which were in the age group of 40–60 years of age (p value = 0.018*); while 42.17% study population had not been vaccinated. The prevalence of post-vaccination effects among various age

| Q. no. | Questions | Responses |
|--------|-----------|-----------|
| 9      | Did you have any of the following comorbidities? * | Diabetes mellitus, Hypertension, Thyroid disease, Heart disease, Asthma, COPD, Tuberculosis, Cancer, Other immunocompromised disease, None |
| 11     | Where did you take treatment? | Home isolation, Hospitalization, ICU stay, ICU stay with ventilatory support, None |
| 12     | Have you been infected with COVID-19 more than once prior to vaccination? | Yes, No |
| 13     | Have you been vaccinated? | Yes, No |
| 14     | Did experience any of the following symptoms post vaccination? | Fever, Sore throat, Body ache, Malaise, Headache, Soreness over vaccination site, Gastric problems, None |
| 15     | Did you get re-infected with COVID-19 post-vaccination? | Yes, No |
groups have been shown in Table 6. The most common symptom post-vaccination was body ache (64.06%) followed by fever (53.13%) and soreness over vaccination site (48.44%).

Out of 130 individuals infected with COVID-19, 70 (53.85%) were vaccinated; most of them belonging to the age group of 20–40 years (47.14%). 65.71% of these vaccinated individuals experienced symptoms (Fig. 3).

10 out of 130 COVID-19 patients got re-infected prior to vaccination. Some cases of COVID-19 infection have been reported post-vaccination as well. In our study, out of 64 vaccinated people, 31 (48.44%) got infected with COVID-19 post vaccination. Majority of these people belonged to 20–40 years of age group ($p$ value = 0.603; not significant).

Figure 4 highlights the severity of post-vaccination symptoms seen among different age groups of our study population.

### Discussion

The novel coronavirus (CoV) is known to have been caused by the severe acute respiratory syndrome coronavirus – 2 (SARS-CoV-2). As the virus still endures to be a global threat, the various parameters pertaining to the presentation and manifestations of COVID-19 pandemic are still being researched in an effort to combat this deadly infectious disease more effectively and efficiently [14]. The rapid spread of COVID-19 makes one wonder about its wide spectrum of manifestations showing great variation—from an asymptomatic course or mild disease to acute respiratory distress syndrome and death ranging [15, 16]. Such variation may be due to the various contributing factors such as age, comorbidities, social factors etc. [16].

47.59% of the study population belonged to the age group of 20–40 years. 56.02% were male and 43.98% females in the current study. 78.31% (130) of the study population had tested positive with RT-PCR for COVID-19, majority of whom belonged to 20–40 years age group.

Kumar et al. conducted a retrospective study among 100 COVID-19 positive patients with 73% male, 24% were female and 3% transgender; divided into five age groups, i.e., $\leq 15$ years, 16–30 years, 31–45 years, 46–60 years, and $> 60$ years [17].

Out of 130 COVID-19 positive patients, 110 (84.62%) were symptomatic with the most common presenting symptom being fever reported in 36 patients (27.69%) followed by difficulty in breathing in 32 patients (24.62%). Savtale S et al. also reported fever (n = 171,95%) as the

| Table 2 Demographic data |
|--------------------------|
| N = 166 | % |

| Age group | N | % |
|-----------|---|---|
| 10–20 years | 4 | 2.41 |
| 20–40 years | 79 | 47.59 |
| 40–60 years | 62 | 37.35 |
| > 60 years | 21 | 12.65 |

| Sex | N | % |
|-----|---|---|
| Male | 93 | 56.02 |
| Female | 73 | 43.98 |

| COVID-19 infection | N | % |
|-------------------|---|---|
| Yes | 130 | 78.31 |
| No | 36 | 21.69 |

| Vaccination status | N | % |
|--------------------|---|---|
| Yes | 96 | 57.83 |
| No | 70 | 42.17 |

**Fig. 1 Prevalence of symptoms among COVID-19 patients**
most common presenting feature in their study followed by fatigue (n = 168, 93.33%) and dyspnoea (n = 162, 90%) [2].

In most of the patients (43; 33.85%), the symptoms lasted for 5–10 days. Backer et al. [18], and Lauer et al. [19], estimated the median COVID-19 incubation period as 5.1–6.4 days.

Individuals in Group A (n = 37), reported fever as the most common presenting complaint (45.95%), followed by body ache (13.51%). On the other hand, the most common presenting complaint reported in Group B (n = 93) was difficulty in breathing (33.33%) followed by fever (20.43%). Prevalence of sore throat and anosmia as a presenting feature was found to be similar among the two groups.

Based on the fact that many studies have reported that with the emergence of newer strains of COVID-19, many patients testing COVID-19 positive are found to be asymptomatic. The Centre for Disease Control and Prevention reported 35% of COVID-19 cases to be asymptomatic, with a 40% of transmission rate before onset of symptoms [20]. We also observed a similar trend among our study groups i.e., Group B showed a greater number of individuals to be asymptomatic (19.35%) compared to the ones in Group A (5.41%). However, in a study conducted by Arons et al. [21] among healthcare workers, 56% of who tested positive for SARS-CoV-2 were asymptomatic. It is these asymptomatic cases which act as a reservoir and may further contribute to the community spread of the virus [20].
The oropharyngeal and nasopharyngeal mucosa serve as the main harbouring site of the virus, thus, establishing a relationship between widespread symptoms to ear nose and throat (ENT) [9]. Most of the available literature focuses on the lower respiratory tract and other generalised manifestations, while very little is known about the prevalence of ENT manifestations in COVID-19 patients (Fig. 5).

In Group A (N = 37), the most common general symptom was fever followed by body ache. In Group B (N = 93), the most common general symptom was fever followed by difficulty in breathing (Table 4). In both the groups, most commonly experienced general symptom was fever (p value = 0.005*). It was noted that there was a

*Statistically significant

Table 4  Comparison of general symptoms was done with the ENT manifestations

| Type of symptoms | Symptoms            | Year                   |               |               | p value    |
|------------------|---------------------|------------------------|---------------|---------------|------------|
|                  |                     |                        | 2020 (n = 37) | 2021 (n = 93) |            |
|                  |                     | N%                     | N%            |               |            |
| General symptoms | Fever               | 31                     | 83.78         | 54            | 58.06      | 0.005*     |
|                  | Body ache           | 27                     | 72.97         | 41            | 44.09      | 0.002*     |
|                  | Malaise             | 17                     | 45.95         | 19            | 20.43      | 0.003*     |
|                  | Fatigue             | 16                     | 43.24         | 26            | 27.96      | 0.092      |
|                  | Chest pain          | 3                      | 8.11          | 19            | 20.43      | 0.090      |
|                  | Difficulty in breathing | 4                | 10.81         | 47            | 50.54      | < 0.0001*  |
|                  | Gastric problems   | 11                     | 29.73         | 18            | 19.35      | 0.199      |
| ENT Symptoms     | Cough               | 21                     | 56.76         | 36            | 38.71      | 0.061      |
|                  | Loss of smell/ Anosmia | 16            | 43.24         | 12            | 12.90      | 0.001*     |
|                  | Sore throat         | 28                     | 75.68         | 27            | 29.03      | < 0.0001*  |
|                  | Running nose/ rhinorrhoea | 11            | 29.73         | 10            | 10.75      | 0.008*     |
|                  | Tinnitus            | 1                      | 2.70          | 2             | 2.15       | 1.000      |
| Asymptomatic     |                     | 2                      | 5.41          | 18            | 19.35      | –          |

Table 5  Prevalence of Comorbidities

| Underlying Comorbidities | No. of patients | Percentage |
|--------------------------|-----------------|------------|
| No comorbidities         | 80              | 48.78      |
| Hypertension             | 25              | 15.24      |
| Diabetes mellitus        | 35              | 21.34      |
| Thyroid disease          | 8               | 4.88       |
| Heart disease            | 6               | 3.66       |
| Asthma                   | 4               | 2.44       |
| COPD                     | 4               | 2.44       |
| Cancer                   | 1               | 0.61       |
| Tuberculosis             | 1               | 0.61       |

Table 6  Correlation of vaccination status with age

| Age (years) | Vaccination status | Symptoms post-vaccination | Re-infection with COVID-19 post-vaccination |
|-------------|--------------------|---------------------------|--------------------------------------------|
|             | Yes N%             | No N%                     | Yes N% | No N% | Yes N% | No N% |            |
| 10–20       | 0 0.00             | 4 100.00                  | 0 0.00 | 4 100.00 | 0 0.00 | 4 100.00 |
| 20–40       | 41 51.90           | 38 48.10                  | 32 40.51 | 47 59.49 | 14 17.72 | 65 82.28 |
| 40–60       | 43 69.35           | 19 30.65                  | 25 40.32 | 37 59.68 | 14 2.58 | 48 77.42 |
| > 60        | 12 57.14           | 9 42.86                   | 7 33.33 | 14 66.67 | 3 14.29 | 18 85.71 |
| Total       | 96 57.83           | 70 42.17                  | 64 38.55 | 102 61.45 | 31 18.67 | 135 81.33 |

p value 0.018* 0.397 (NS) 0.603 (NS)

N = 166; * = statistically significant p value; NS = p value Not significant
significant increase in number of cases experiencing difficulty in breathing from Group A to Group B ($p$ value = $< 0.0001^\ast$). Savtale et al. also reported fever ($n = 171$, 95%) as the commonest feature in COVID-19 patients, followed by fatigue ($n = 168$, 93.33%), dyspnoea ($n = 162$, 90%) [2]. Kumar et al. also found fever and shortness of breath to be the prevalent symptoms in their study population [20]. Prevalence of gastrointestinal symptoms which include nausea, vomiting, abdominal discomfort, and diarrhoea was less common [22].

Among ENT symptoms as shown in Table 4, in Group A ($N = 37$), sore throat was most common followed by cough and anosmia; while in Group B ($N = 93$), most common was cough followed by sore throat and anosmia. Prevalence of sore throat among both the groups was highly significant ($p$ value = $< 0.0001^\ast$), followed by anosmia ($p$ value = $0.0001^\ast$) and rhinorrhoea ($p$ value = $0.008^\ast$). In a study by El-Anwar et al. [13], sore throat was the commonest ENT manifestation. However, Savtale et al. [2] found loss of smell (53.5%) more prevalent followed by sore throat (47.1%), and tinnitus (38.5%). Anosmia has been reported as a non-specific clinical feature in multiple studies [23]. Loss of sense of smell is hypothesised to be the first and only symptom independent of other upper respiratory symptoms in COVID-19 positive patients, and is considered to be an indicator of mild diseases and potential for rapid improvement [2]. Menni et al. [24] encountered 59% of COVID-19 positive cases with anosmia. Audiological manifestations such as tinnitus, hearing loss have been reported by some researchers but are considered to be rare [2]. Another ENT related manifestation that came into light during the pandemic was rhino-orbito-cerebral mucormycosis (ROCM). Post-COVID ROCM was seen in alarming numbers during the second wave of the
pandemic. Many even called it “an epidemic in pandemic”. In our study, 3 patients (8.10%) in Group 1 had ROCM while in Group 2, 22 patients (23.65%) had ROCM (p value 0.042*).

Diabetes mellitus (21.34%) and hypertension (15.24%) were the commonest underlying comorbidities or risk factors among the COVID-19 positive population of our study. Similar prevalence rate of comorbidities was reported by Salepci et al. [25]

Immune suppression caused by SARS-CoV-2 decreases CD4+ T and CD8+ T cell counts, thereby predisposing COVID-19 patients to opportunistic infections [26]. During the first wave of COVID-19, emergence of another ENT manifestation was seen i.e., rhino-orbito-cerebral mucormycosis (ROCM) was seen with very few cases being reported, while the second wave of COVID-19 in 2021 led to a multi-fold rise in cases of Mucormycosis which was mainly due to uncontrolled diabetes and irrational use of corticosteroids [27]. On June 7, 2021, India recorded its highest number (28,252) of mucormycosis cases, out of which 24,370 cases had history of COVID-19 and 17,601 cases had a history of diabetes [28]. Diabetes mellitus has been a known predisposing factor for both COVID-19 and rhino-orbito-cerebral mucormycosis (ROCM). A multicentre study from India reported in 77% cases of ROCM with diabetes mellitus [29].

World’s largest COVID-19 vaccination campaign began in January 2021 in India [10]. 57.83% of our study population received vaccination against COVID-19, majority of whom were in the age group of 40–60 years of age (p value = 0.018*). Although, very little is known about what to expect after vaccination. 38.55% individuals experienced post-vaccination effects, the most common being body ache (64.06%) followed by fever (53.13%) and soreness over vaccination site (48.44%). Jayadevan et al. [9] conducted a survey among 5396 people and found that two-thirds reported mild and short-lived effects post-vaccination such as tiredness (45%), followed by myalgia (44%), fever (34%), headache (28%) and local pain at the injection site (27%). They also suggested a linear correlation between age and post-vaccination effects i.e., vaccine reactogenicity declined with age. The youngest age group of 20–29 years (81.3%) developed symptoms, while only 7.4% over 80 years were symptomatic [9]. In our study, 50% of the vaccinated population that developed symptoms were in the age group of 20–40 years while only 10.94% were above 60 years. We also analysed prevalence of post vaccination effects in patients with history of COVID-19, 53.85% were vaccinated, majority of whom were in the age group of 20–40 years while those above 60 years of age reported very less symptoms.

There has been evidence of recurrence of the SARS-CoV-2 virus in recovered COVID-19 patients. The cause of this is, however unclear but the mutation of the virus strains has been mentioned. Majority of such patients remain asymptomatic or have milder form of the disease [30]. In our study, 10 out of 130 COVID-19 patients got re-infected prior to vaccination. Zheng et al. conducted a surveillance study on 285 adult COVID-19 patients and reported 27 (9.5%) patients tested re-positive [31]. Mei et al. reported 23 out of 651 recovered COVID-19 patients testing re-positive [32].

The efficacy of vaccine against COVID-19 has not proven to be 100% as post-vaccination cases have been reported; however, the severity of symptoms has been found to be less compared to those who have not been vaccinated (Fig. 5). In our study, out of 64 vaccinated people, 31 (48.44%) got infected with COVID-19 post vaccination.
Conclusion

The battle against COVID-19 pandemic is not over. With the rising number of cases of COVID-19, a better understanding of the SARS-CoV-2 virus will help in early interpretation of symptoms and timely diagnosis and containment of spread of this disease. The wide spectrum of COVID-19 ranges from asymptomatic to general features like fever, difficulty in breathing, body ache, malaise etc. to ENT related manifestations like sore throat, anosmia, rhinorrhea, ROCM etc. Many studies have shown the prevalence and correlation of general and ENT manifestations related to COVID-19 disease. However, the prevalence of symptoms in the first and second wave of the pandemic and their correlation has not been reported by many, thus, making this study unique. Moreover, this study also highlighted that one can contract COVID-19 infection post-vaccination as well but, the severity of the disease after vaccination is mild.

Declarations

Conflict of interest None.

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