

# Impact of the Influenza Vaccine on COVID-19 Infection Rates and Severity

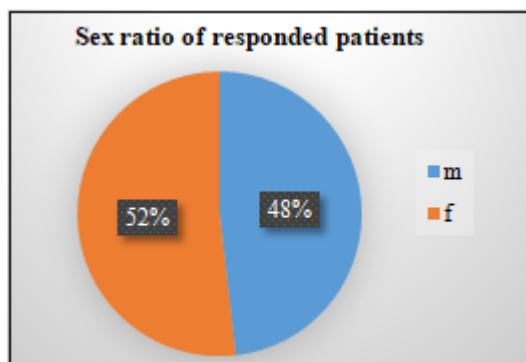
Dr Shubha Agrawal

MBBS, MD Chest & TB (KEM, Mumbai)

**Abstract:** *Background:* A retrospective study was done at CHEST CENTRE of Agrawal Diagnostic Center LLP, Mumbai, India by Dr Shubha Agrawal. Patients visiting respiratory OPD were vaccinated with Tetravalent influenza vaccine from January 2020 to February 2021. Hence, Retrospective Survey was done to assess the role of the influenza vaccine in COVID-19 susceptibility and severity and other respiratory illness. A total of 239 patients were vaccinated with tetravalent influenza vaccine of age groups from 18 years above in OPD. *Methods:* Retrospective survey was done on these 239 patients information was collected by various methods like Google form filled by the patients, Telephonic conversation and Physical check-up. Out of 239 patients only 139 patients responded to survey. We have done the survey on the basis of any illness suffered, COVID infection, treatment taken for it, need of oxygen therapy during this period of COVID-19 Pandemic. *Results:* Out of 239 patients 139 patients responded to survey. Out of 139 patients 48% were male patients and 52% were female patients who responded.

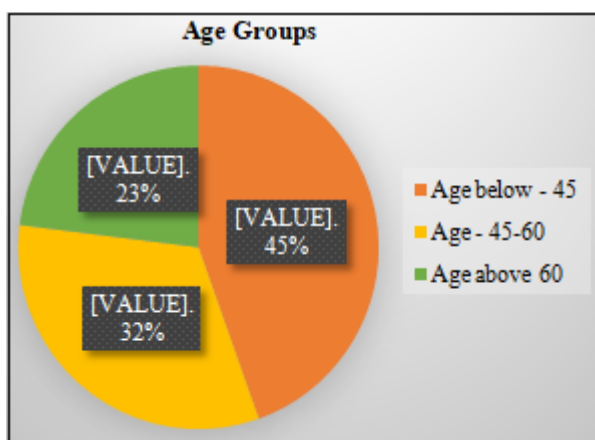
**Keywords:** Influenza, COVID, Pandemic, Oxygen, Vaccination, Flu, asthma, COPD, Lung, Quadrivalent flu vaccine, Tetravalent flu vaccine

## 1. Introduction



These patients were classified according to different age groups who received tetravalent flu vaccine during Jan2020 to Feb end 2021.

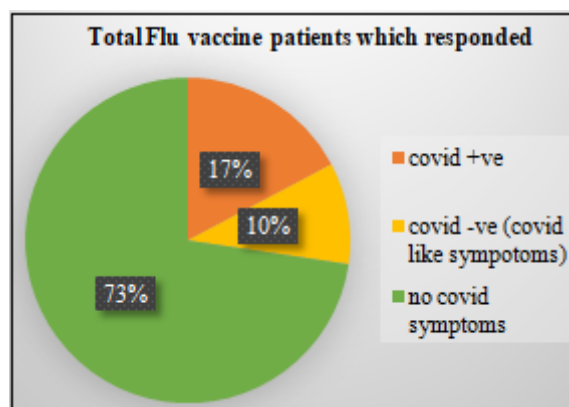
62.5% were of age group below 45 years  
 45.32% were of age group between 45-60 years  
 32.23 % were of age group above 60 years



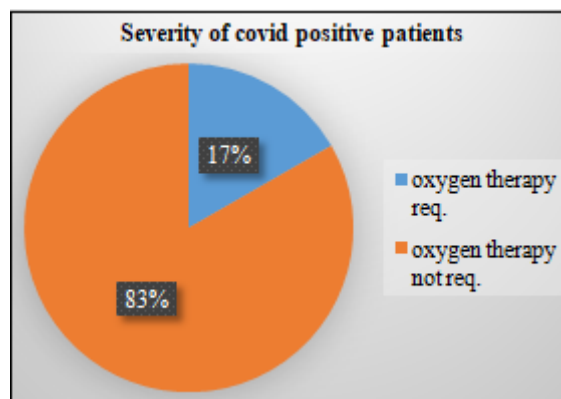
Out of 139 patients, 101 patients (72.66%) had no symptoms of COVID disease, hence RTPCR test not done. 14 patients

had COVID like symptoms (10.07%) had COVID like symptoms but were COVID RTPCR negative.

24 patients (17.27 %) out of 139 flu vaccinated patients were found to be COVID RTPCR positive.



Out of these 24 COVID positive flu vaccinated patients 20 patients (83.33 %) did not require oxygen therapy or hospitalization and were managed at home. 4 patients (16.67 %) required oxygen therapy and hospitalization.



But there was no demise in these COVID positive flu vaccinated patients. Also disease severity of getting URTI or LRTI or flu symptoms were also reduced, abstinence from work and burden on hospital health care decreased. There was decline in exacerbation of Asthma, COPD and chronic Lung diseases.

## 2. Discussion

The results of our study indicate that influenza vaccination presents no harmful effect on COVID-19 susceptibility or increases disease severity, in fact it points to a possible association between the vaccine and decreased risk of COVID-19 and improved clinical outcomes. 2, 3, 4, 7. It can be also inferred that;

- 1) Flu – vaccine can play an important role to prevent Influenza as well as COVID-19 infection .1
- 2) Flu vaccination is an important preventive tool for healthin chronic lung diseases with or without comorbidities.
- 3) Flu vaccination can reduce risk of hospitalization and oxygen therapy requirement due to influenza and COVID 19 infection in adults, middle age and senior citizens.
- 4) Flu vaccination also reduces exacerbation rate in chronic pulmonary conditions.

## 3. Conclusion

In this electronic survey based retrospective cohort study, we found a significant reduction in the odds of testing positive for COVID-19 in patients who received an influenza vaccine compared to those who did not receive the vaccine. 10. In addition, in patients who tested positive for COVID-19, those who previously received an influenza vaccine had significantly better clinical outcomes. Future prospective studies are needed to establish a relationship between the influenza vaccine and decrease in COVID-19 susceptibility and severity. In this COVID pandemic the influenza vaccine should be promoted to be used every year as alone or adjuvant to COVID vaccine to reduce the burden of disease in children, adults and senior citizens .8. Flu vaccine can be given with COVID vaccine with a gap of 2-3 weeks to minimize monsoon disease severity, influenza, COVID related severity. 6, 9. Also flu vaccine is time tested and being used since long in all age groups.

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