

Efficacy of the Covishield Vaccine Against SARS-CoV2 in a Tertiary Care Hospital: A Study Based on Age, Gender and Co-morbidities

Joana Christipher, Krishnakanth B, Pavithra R, Balavishnu A and Kuganantham Periasamy*

Department of Social Medicine and Infectious Diseases, SRM Institute of Medical Sciences Hospital, India

*Corresponding Author: Kuganantham Periasamy, Department of Social Medicine and Infectious Diseases, SRM Institute of Medical Sciences Hospital, India.

Received: November 29, 2021

Published: December 15, 2021

© All rights are reserved by Kuganantham Periasamy., et al.

Abstract

Background: A safe and efficacious vaccine against the severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) could contribute to the control and spread of the COVID-19 pandemic. We evaluated the efficacy of the Covishield vaccine in a sample study group of 600 participants who had received both doses of the Covishield vaccine.

Methods: This analysis is based on data collected from the general public who received both doses of the Covishield vaccine at our tertiary care hospital. Participants aged 45 and above were chosen for this study. Participants who took part in this study received two doses of 0.5 ml of the Covishield vaccine with a gap of 30-84 days between the two doses. Participants were analysed based on the data collected from the hospital records and/or given by the participants themselves in regard to testing positive for the SARS-CoV2 virus through RT-PCR testing, history of hospitalisation and adverse effects to the vaccine.

Interpretation: Covishield vaccine has been shown to be efficacious in preventing symptomatic COVID-19 in the ongoing study at our hospital irrespective of age, gender and co-morbidities.

Keywords: Covishield; COVID-19; SARS-CoV2

Introduction

The ongoing COVID-19 pandemic has brought in devastating loss in terms of health and global economy. It has led to the death of multiple people all over the world especially the older population and those with pre-existing health conditions. The introduction of vaccines approved by the World Health Organization (WHO) through Emergency Use Authorization has left the public skeptical in getting vaccinated. Despite the virus causing havoc all over the world, there is a large number of the population who are still not immune to the SARS-Cov2 virus and vaccines could play an important role in increasing population immunity, preventing severe disease and reducing the virus's impact on the ongoing Health crisis.

Study design and outcome

- **Sample study group:** 600 both dose vaccinated individuals with age group ranging from 45 to over 80 years of age.
- **Vaccine under study:** COVISHIELD.

Age

A sample of the population based on age group who were vaccinated with both doses of the Covishield vaccine with a gap of 30-84 days between both doses was studied. A total of 600 people were divided based on their age group ranging from 45 to over 80 years of age.

In the age group ranging from 40 to 60 years, 207 people were included in the study and the inference attained was - 25 (12%) people in this group were infected with the SARS-Cov2 virus but had a mild infection and 182 (88%) were asymptomatic and/or didn't contract the disease (within 3 months from the date of second dose).

In the age group ranging from 60 to 80 years, 364 people were included in the study and the inference attained was - 25 (7%) people in this age range were infected with the SARS-CoV2 virus and

339 (93%) people were asymptomatic and/or didn't contract the disease (within 3 months from the date of second dose).

In the age group ranging from 80 years and above, 29 people were included in the study and the inference attained was - 2 (7%) people in this age group were infected with the SARS-Cov2 virus and 27 (93%) people were asymptomatic and/or didn't contract the disease (within 3 months from the date of second dose).

The above study showed that people between 45-60 years of age showed similar rates of infectivity (Figure 1) with the Covid-19 virus post getting jabbed with both doses of the Covishield vaccine irrespective of gender and comorbidities.

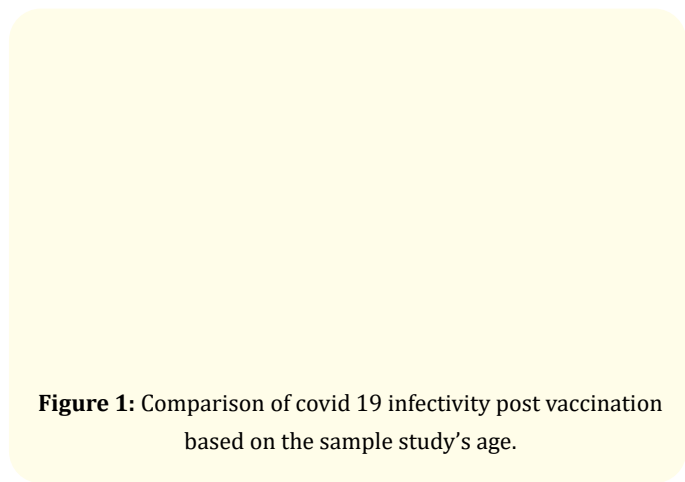


Figure 1: Comparison of covid 19 infectivity post vaccination based on the sample study's age.

Gender

A sample of 600 people who have completed both doses of Covishield vaccination was studied and divided into 2 groups based on gender - Male and Female. 302 male and 298 female were included in the study. Out of the 600 participants a total of 52 people were infected with the SARS-Cov2 virus. Among the infected, 48% were female and 52% were observed to be male. This sample study showed (Figure 2) that there is no bias in gender when involving SARS-Cov2 virus infectivity months after vaccination.

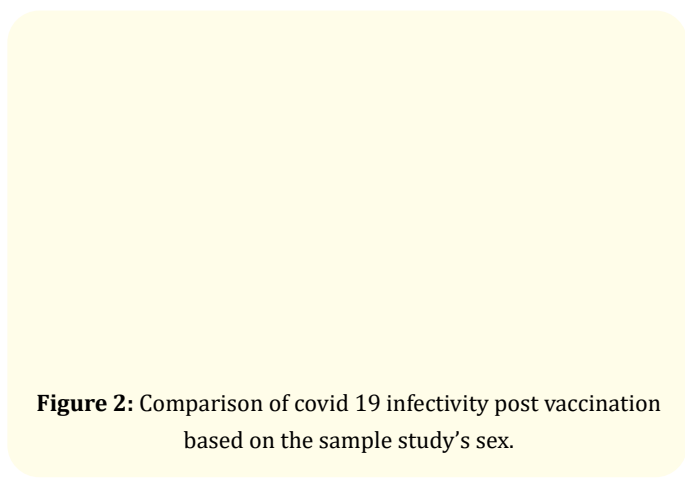


Figure 2: Comparison of covid 19 infectivity post vaccination based on the sample study's sex.

Comorbidities

The above sample group who had both doses of Covishield vaccination was studied to see the difference in the efficacy of the vaccine in people with and without comorbidities. The comorbidities that have been taken up the studies are type 2 diabetes mellitus, hypertension, coronary artery disease and combination of the diseases (people with multiple pre-existing health conditions).

The study with a sample group of 600 people showed an inference that 347 people from the sample group had any one or more comorbidities and 253 people had no comorbidities among the above two groups total number of people who got covid infection after taking two doses of Covishield vaccination are 32 and 21 respectively (Figure 3).

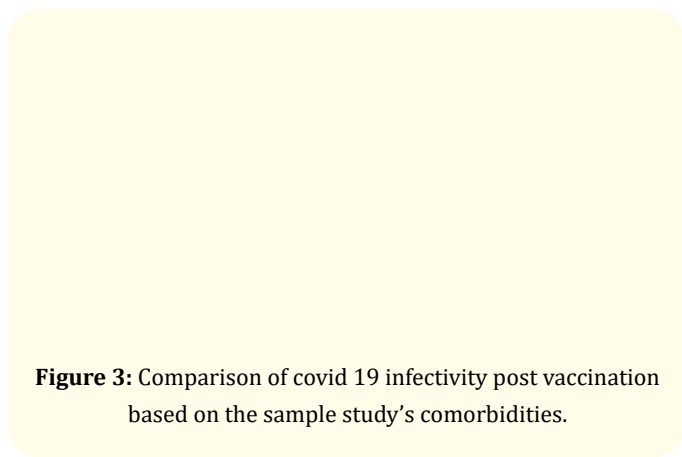


Figure 3: Comparison of covid 19 infectivity post vaccination based on the sample study's comorbidities.

In people with comorbidities, 185 had type 2 diabetes mellitus, 66 had hypertension, 28 had coronary artery disease, 45 of them had type 2 diabetes mellitus and hypertension, 17 of them had type 2 diabetes mellitus and coronary heart disease and 6 of them had all the three comorbidities.

The study shows (Figure 4) that out of 52 people who got infected after both doses of the Covishield vaccine, 20 of them had type 2 diabetes mellitus, 5 of them had hypertension, 2 of them had coronary artery disease, 4 of them had type 2 diabetes mellitus and hypertension and 21 of them had no comorbidities.

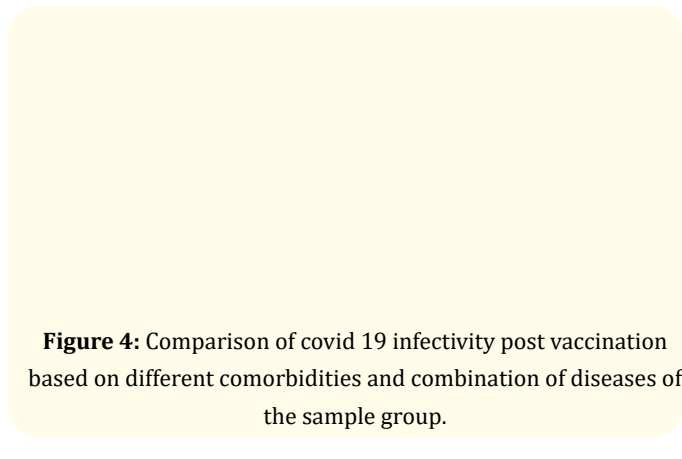


Figure 4: Comparison of covid 19 infectivity post vaccination based on different comorbidities and combination of diseases of the sample group.

The inference attained from the above studies shows that people who had diabetes has got covid infection after taking two doses of vaccination more than people who had other comorbidities so the people who had diabetes and got infected are studied by their age groups and sex.

Which showed that there was no significant difference in number when they compared by their sex but when they are compared by their age group it showed (Figure 5) out of 26 people who had diabetes and got infected with covid 19 after taking 2 doses of Covishield vaccination 16 (65%) people were in the age group of 40-60 years, 10 (35%) people were in the age group 60-80 years.

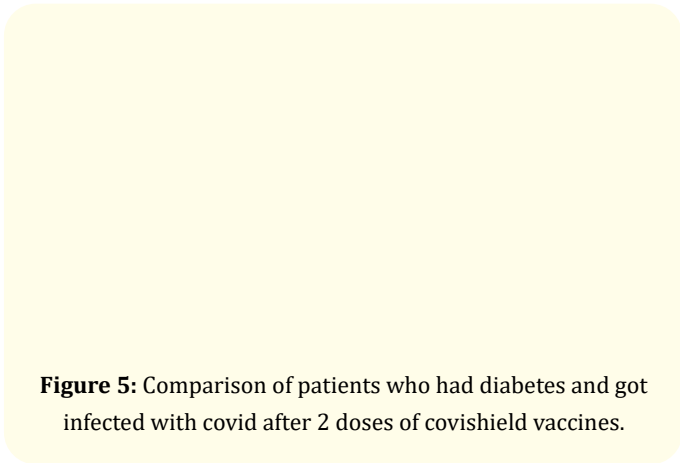


Figure 5: Comparison of patients who had diabetes and got infected with covid after 2 doses of covishield vaccines.

Outcomes

- **Age:** People between 45-60 years of age showed similar rates of infectivity with the Covid-19 virus post getting jabbed with both the doses of the Covishield vaccine irrespective of gender and comorbidities.
- **Gender:** No difference was shown in the rates of infectivity with the Covid- 19 virus post getting jabbed with both the doses of the Covishield vaccine in both males and females.
- **Comorbidities:** The inference from the above study of comorbidities in people infected with the Covid-19 virus showed that Type 2 Diabetes Mellitus is one of the major risk factors for increased infectivity with the SARS-CoV2 virus either being the sole disease in the sample group or in addition to other comorbidities like hypertension and coronary artery disease and causes increased infectivity in people in the age group ranging from 40-60 years.

Assets from publication with us

- Prompt Acknowledgement after receiving the article
- Thorough Double blinded peer review
- Rapid Publication
- Issue of Publication Certificate
- High visibility of your Published work

Website: www.actascientific.com/

Submit Article: www.actascientific.com/submission.php

Email us: editor@actascientific.com

Contact us: +91 9182824667