

Frequency of Post COVID Vaccination Undesirable Effects in Faculty and Students of Ayub Medical College

Syed Yar Muhammad Shah, Umar Farooq, Mohammad Yasin, Naseer Ahmad, Fazal Mustaan, Qaisar Ali

Ayub Medical College, Abbottabad - Pakistan

Corresponding Author

Mohammad Yasin

Department of Pulmonology,
Ayub Medical College, Abbottabad -
Pakistan
E-mail:
yasinmohammadjan@yahoo.com

Article History:

Received: Jun 24, 2023
Revised: Jul 12, 2023
Accepted: Aug 18, 2023
Available Online: Sep 02, 2023

Author Contributions:

SYM UF MY conceived idea, MY NA FM QA drafted the study, SYM UF MY collected data, MY NA FM did statistical analysis and interpretation of data, MY QA UF critical reviewed manuscript, All approved final version to be published.

Declaration of conflicting interests

The authors declare that there is no conflict of interest.

How to cite this article:

Shah SYM, Farooq U, Yasin M, Ahmad N, Mustaan F, Ali Q. Frequency of Post COVID Vaccination Undesirable Effects in Faculty and Students of Ayub Medical College Pak J Chest Med. 2023;29 (3): 308-312.

ABSTRACT

Background: With the sudden rise in Corona cases over a short period of 5 to 6 months all around the globe, governments had to impose lockdowns to reduce the spread of virus but nobody was sure about how long this will continue. The solution was the formation of vaccine on which scientists started working quickly. Within a year different vaccines came in the market to use in humans on emergency basis. But as the time was short to properly evaluate the efficacy and side effects of these vaccines, public started having some undesirable effects after vaccination along with the immunity against virus. A few studies in this regard have highlighted some issues with the administration of different vaccines.

Objective: The aim of our study conducted on students and faculty of Ayub Medical College (AMC) was to determine the frequency and intensity of undesirable effects after vaccination.

Methodology: It was a descriptive cross-sectional study conducted on 113 students from 1st March 2021 to 31st October 2021. Study population was undergraduate students and faculty of AMC, Abbottabad who are partially or fully vaccinated against Covid-19. A structured questionnaire was developed for data collection after reviewing of literature. After taking informed consent students were approached in lecture halls and hostels and faculty members were approached in their offices for recording the answers to questions. Data was recorded on a proforma and was analyzed by using statistical package for social sciences.

Results: In this study the participants belonged to the age group 18-59 years and mean age was 23.15 ± 5.6 years among the students and faculty of AMC. Out of the total 113 participants 85(75.2%) were males and 28(24.8%) females. Out of 85 male participants, 52 (61.17%) experienced undesirable effects after vaccination and 33(38.82%) didn't have any of these effects. Out of 28 female participants, 12(42.85%) felt undesirable effects after vaccination while 16(57.14%) didn't face any effects. The most common undesirable effect faced by the majority of the participants 46(22.7%) was fatigue. No significant association of undesirable effects was found with socio-demographic or other factors in the research.

Conclusion: The analysis showed that majority of the participants experienced undesirable effects after getting either first or second dose of Covid vaccination which mostly resolved in a day or two without use of any medication. There is still need to work on the vaccines to minimize their undesirable effects.

Keywords: Undesirable effects; Vaccines; COVID-19; Vaccination; Post Covid; Symptoms

Introduction

This research is about determining the frequency of undesirable effects in students and faculty of Ayub Medical College, Abbottabad after getting different Covid-19 vaccinations. In late 2019, a viral outbreak of queer pneumonia accompanied with fever, dry cough, fatigue and occasional gastrointestinal symptoms occurred in a seafood wholesale market, the Huanan Seafood Wholesale Market, in Wuhan, Hubei, China.¹ Within a few months, it picked up a shape of global pandemic caused by a mutated shape of Corona Virus, which was declared as sixth public health of emergency services (SPHEC) by World Health Organization (WHO) on January, 30 2020. The previous outbreaks of corona virus include Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) outbreak and Middle East Respiratory Syndrome Coronavirus (MERS-CoV) outbreak. Covid-19 is the third outbreak which has affected more than 209 countries by now including Pakistan.² Since its discovery, the virus has spread worldwide causing thousands of deaths and badly affecting health systems and economies of the world.³ The pandemic posed a serious threat to the nations all around the globe which demanded specific protocols to be adopted on emergency basis to prevent mass hospitalization and casualties.⁴ According to WHO, 239 million cases of Covid-19 are reported with 4.8 million deaths, worldwide, so far. In Pakistan the number of reported cases of this virus is 1.26 million with 28,173 deaths till now.⁵

Covid-19 can spread rapidly from person to person, in both hospital settings and social events due to its short period of incubation.⁶ So, temporarily lockdown protocols and restrictions on public gatherings and implementation of SOPs were being observed in maximum countries to minimize the spread of disease but the need of time was to make a vaccine against Covid-19, on urgent basis, to permanently save the population of the world against this deadly virus.⁷ The developed nations started working on it quickly and began the new vaccines' trials as soon as possible. Within a year, vaccination against Covid-19 started around the globe on emergency basis after completing the trials.⁸ Different vaccines with different mechanisms of actions prepared by different countries were injected to the world population without getting enough details regarding the possible side effects of the injected vaccines. Because of shortage of time, adverse effects of these vaccines couldn't be observed like usually it happens in the formation of new vaccine trials.⁹ All vaccines have their respective efficacy against virus but also have some undesirable effects on the other hand as well, as post vaccination effects were being reported by vaccinated population. People with strong immune response experienced less of these undesirable effects while immune-compromised people suffered more and

even deaths are being reported due to post Covid vaccination side effects. According to a study done on the side effects of AstraZeneca, one of the Covid-19 vaccine, suggests that it was launched prematurely and scientists should develop improvements to this vaccine to enhance its safety profile.¹⁰

The reporting of undesirable side effects after vaccination is still going on as people are getting vaccinated on daily basis and more and more side effects are coming to the surface with the passage of time. Also these are all the short-term side effects of the vaccination and the long-term side effects will come in debate within next few years from now. Undesirable side effects after having Covid-19 vaccination are one of the main fears due to which people are avoiding vaccination these days. Different conspiracies about side effects of vaccines and trust of public on the effectiveness of these vaccines are the major factors affecting the vaccination program.

In this research, frequency of these effects in students and faculty of Ayub Medical College, Abbottabad was studied to evaluate the truth of this issue and spread awareness about the positive and negative effects of Covid-19 vaccines.

Objectives

Objective of the present study was to determine the frequency of undesirable effects after getting vaccinated among students and faculty of Ayub Medical College and to determine the types of undesirable effects after Covid-19 vaccination and their intensity.

Methodology

This descriptive Cross sectional study was carried out at Ayub Medical College, Abbottabad from 1st March 2021 to 31st October 2021. Data was collected from 113 participants among the students and faculty of Ayub Medical College Abbottabad via non probability convenient sampling technique.

All the students and faculty who got their Covid-19 vaccination (1st or 2nd dose) within the previous 7 days were included in the study. The students and faculty who did not respond to all questions were excluded.

A structured questionnaire was developed for data collection. The students were approached in the lecture halls and hostels and faculty members were approached in their offices for recording the answers to questions. Data was collected by asking questions verbally from the students and faculty who had got their Covid-19 vaccination, after obtaining informed verbal consent. The questionnaire contained two portions, first portion contained basic demographic data (age, gender, course of study) and the second portion contained questions regarding any previous medical problem before vaccina-

tion and the undesirable effects faced after getting 1st or 2nd dose of Covid-19 vaccination.

The data were entered into the computer using SPSS version 20.0. Descriptive data analysis was done both for continuous and categorical variables. Mean and standard deviation was calculated for continuous variables like age of the students. Frequencies and percentages were calculated for the categorical variables like gender, type of vaccines and various undesirable effects being faced after vaccination. Data was presented in the form of tables, bar graphs and pie charts. Inferential data analysis was conducted for determining association of students and faculty members who faced undesirable effects after Covid-19 vaccination with socio-demographic variables and other factors which might be the cause of these effects. Chi square test of association was employed to determine the association. P value of <0.05 was considered significant.

Results

Mean age of the participants was 23.15±5.67 years with minimum age of 18 years and maximum age of 59 years. Eighty five (75.2%) participants were male and 28 (24.8%) were female.

Out of total 113 participants, 55 (48.7%) got vaccinated with Sinopharm, 50 (44.2%) got vaccinated with Sinovac, 5 (4.4%) got vaccinated with Moderna, 2 (1.8%) got vaccinated with Astra Zeneca and 1 (0.9%) got vaccinated with Pfizer vaccine.

Vaccination status of the participants revealed that 105

(92.9%) were fully vaccinated and 8 (7.1%) were unvaccinated or partially vaccinated.

Figure 1 shows the frequency of any past illness in the participants of this study. It shows that out of total 113 participants, 104 (92.1%) did not have any past illness, 1 (0.9%) had allergy, 1 (0.9%) had depression, 1 (0.9%) had Diabetes Mellitus, 1 (0.9%) had Hypertension, 1 (0.9%) had Migraine, 1 (0.9%) had mild fever, 1(0.9%) had sinusitis and dry eye syndrome, 1 (0.9%) has TB.

Table 1 shows the frequency of undesirable effects faced by the participants of this study. According to it, sore throat was experienced by 10 (4.9%) participants, congestion by 2 (1.0%) participants, chest pain by 1(0.5%) participant, palpitations by 5 (2.5%) participants, headache by 24 (11.8%) participants, fever by 31 (15.3%) participants, fatigue by 46 (22.7%) participants, weakness by 24 (11.8%) participants, loss of taste and smell by 4 (2.0%) participants, voice change by 2 (1.0%) participants, nausea by 10 (4.9%) participants, diarrhea by 4 (2.0%) participants, muscle aches by 38 (18.7%) participants and allergic reactions by 2 (1.0%) participants.

Table 2 shows the association between gender of the participants and undesirable side effects after vaccination. Out of total 113 participants, 64 (56.63%) experienced undesirable effects after vaccination and among those 52 (81.25%) were male and 12 (18.75%) were female participants. This association between gender of the participants and undesirable side effects after vaccination was found to be insignificant with chi square value of 2.878 and p value of 0.90.

Figure 1: Frequency of past illness in study participants

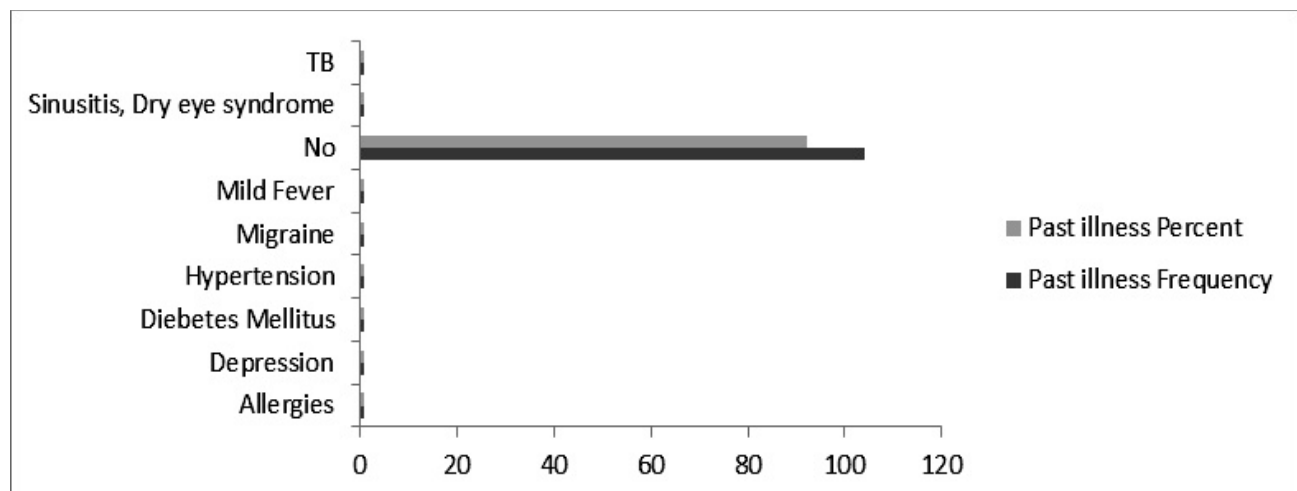


Table 1: Frequency of undesirable effects after vaccination

Side effects	Responses	
	N	Percent
Sore throat	10	4.9%
Congestion	2	1.0%
Chest pain	1	0.5%
Palpitations	5	2.5%
Headache	24	11.8%
Fever	31	15.3%
Fatigue	46	22.7%
Weakness	24	11.8%
Loss of taste and smell	4	2.0%
Voice change	2	1.0%
Nausea	10	4.9%
Diarrhea	4	2.0%
Muscles aches	38	18.7%
Allergic reactions	2	1.0%
Total	203	100.0%

Table 2: Association between gender and undesirable side effects after vaccination

		Undesirable Side-effects		
		Yes	No	Total
Gender	Male	52	33	85
	Female	12	16	28
Total		64	49	113

$\chi^2 = 2.878$ p value= 0.90*

Discussion

We are currently going through a global pandemic of Covid-19. Vaccination is the only way of light in these difficult times. But the undesirable effects after Covid-19 vaccination are creating resistance in public to get vaccinated. The need of time is to properly evaluate the effects of different vaccines and try to minimize these undesirable effects and to eventually get the confidence of general public in vaccination programs.

Our study was conducted in the students and faculty of Ayub Medical College in which we had 113 participants and asked them questions after having their verbal consent. In our research, the most common side effects which were experienced by the participants were fatigue

(22.7%) and muscle aches (18.7%) that appeared within 24 hours of vaccination and lasted for a day or two, which is in accordance with the research done on the users of COVID symptom study app in UK.¹¹ Another study done in the Poland has different results from our study and according to them, the most common side effect experienced after vaccination was soreness of injection site followed by the limb pain.¹² This difference may be due to our small sample size and difference of geographical region of both studies. The present study found the incidence of post-COVID-19-vaccination side effects to be more frequent in males than in females. This finding contradicts that reported by research in Saudi Arabia where they studied the short-term side effects of COVID-19 vaccines in Saudi people and found that the frequency was higher in females than males.¹³ The higher frequency

of side effects in males in our study may be attributed to the lower proportion of females in our study sample.

The study was not an ideal one as we can't generalize the results because it was conducted in only one medical college on a very small sample size. We also used non probability sampling technique and with this technique we might not have represented the population well and it is hard for us to know how well we've done. Also, only one tool was used in the collection of data. If more and better tools were used, it would have added to the credibility of the study and more insight into the side effects being faced.

Conclusion

Majority of the participants faced undesirable effects after Covid vaccination and the most common effects were fatigue and muscle aches. The study has highlighted the common undesirable effects and it can be helpful for the scientists and researchers to work on the vaccines and to reduce these effects. Most of the effects resolved spontaneously after a day or two of vaccination so it is possible to convince the people to participate in the vaccination programs without any fear. Similar studies should be done on larger scale to properly calculate the undesirable effects of different vaccines. People should be correctly educated regarding the efficacy and side effects of the Covid Vaccines. This kind of research should be encouraged in all geographical regions of the globe, as the undesirable effects of vaccination can differ with the change in geographical area.

References

1. Wu YC, Chen CS, Chan YJ. The outbreak of COVID-19: An overview. *J Chin Med Assoc* 2020;83(3):217-20.
2. Waris A, Atta UK, Ali M, Asmat A, Baset A. COVID-19 outbreak: current scenario of Pakistan. *New Microbes New Infect* 2020;35:ISSN 2052-975.
3. Ciotti M, Angeletti S, Minieri M, Giovannetti M, Benvenuto D, Pascarella S, et al. COVID-19 Outbreak: An Overview. *Chemotherapy* 2019;64:215-23.
4. Altakarli N. Emergence of COVID-19 Infection: What Is Known and What is to be expected – Narrative Review Article. *Dubai Med J*. 2020;3:13-8.
5. World Health Organization. Coronavirus (COVID-19) [Online] 2021 (cited October 15, 2021). Available at: <https://covid19.who.int/>
6. Xiaorong W, Qiong Z, Yukun H, Lingbo L, Xinqian M, Xiaoshan W, et al. Nosocomial outbreak of COVID-19 pneumonia in Wuhan, China. *Eur Respir J*. 2020;55(6):2000544.
7. Niavis S, Kallioras D, Vlontzos G, Duquenne M-N. COVID-19 Pandemic and Lockdown Fine Optimality. *Economies*. 2021; 9(1):36.
8. Thanh Le T. The COVID-19 vaccine development landscape. *Nat Rev Drug Discov*. 2020;9:25.
9. Lurie N. Developing Covid-19 vaccines at pandemic speed. *N Engl J Med*. 2020; 30(3):45.
10. Schilling R. Research about Side Effects of the AstraZeneca Vaccine. Medical articles by Dr.Ray. [Online] 2021 (cited September 24, 2021). Available at : www.askdrray.com/research-about-side-effects-of-the-astrazeneca-vaccine/
11. Menni C, Klaser K, May A, Polidori L, Capdevila J, Louca P, Sudre CH, et al. Vaccine side-effects and SARS-CoV-2 infection after vaccination in users of the COVID Symptom Study app in the UK: a prospective observational study. *Lancet Infect Dis*. 2021; 21(7):939–49.
12. Jęskowiak I, Wiatrak B, Grosman-Dziewiszek P, Szelać A. The Incidence and Severity of Post-Vaccination Reactions after Vaccination against COVID-19. *Vaccines*. 2021;9(5):502.
13. Alhazmi A, Alamer E, Daws D, Hakami M, Darraj M, Maghfuri A, et al. Evaluation of Side Effects Associated with COVID-19 Vaccines in Saudi Arabia. *Vaccines*. 2021;9(6):674.