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Adverse reactions of COVID-19 vaccine among frontline workers in Fujairah, UAE

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Abstract

This study explored the adverse reactions/effects prevalence, types, duration, and severity of inactivated novel coronavirus pneumonia (COVID-19) vaccine among adult frontline health care professionals and educators. A total of A total of 49 frontline workers in Fujairah, UAE (37 health care professionals and 12 educators) were interviewed over a period of three months. All participants were reported that they experienced at least one adverse reaction/effect. The range of COVID-19 vaccine adverse reactions/effects were one to three adverse effects Pain at the vaccine injection site reported by 49 out of 49 participants; swelling/redness of the vaccine injection site reported by 45 out of 49; fatigue reported by 19 out of 49; headache reported by eight; fever reported by one participant. Majority of the reported adverse reactions were described as moderate or mild and the duration was between one day and one week.

Introduction

Vaccines safety are very important to ensure that the public will be safe after receiving vaccination for prevention diseases, therefore, vaccine pharmacovigilance is very important to ensure the safety of vaccines and minimize negative effects to the health of individuals and lessen the potential negative impact on immunization of population.[1] COVID-19, is a new respiratory virus that was first identified in Wuhan, China and as a result of this pandemic researchers and scientists from China, UK and other countries were trying to develop many potential vaccines for COVID-19.[2] United Arab of Emirates (UAE) are suffered from COVID-19 like the rest of world, however, UAE make great efforts to fight COVID-19 and one of this efforts was to approve COVID-19 vaccines for emergency use on July, 2020 to the UAE's frontline workers such as health care professionals, educators and others with age range between 18 and 60 years during the phase 3 clinical trials, however, thousands of frontline workers participated in this phase and received the vaccine [3], later on vaccine was approved and registered on December, 2020
There are potential adverse reactions associated with vaccines use such as: redness, fever, swelling at the site on vaccination injection and anaphylaxis.[4,5] Identifying and reporting the adverse reactions of vaccines are very important in order to improve the safety of vaccines. There is lack of studies about the experience and adverse effects/reactions of COVID-19 vaccines, therefore, the aim of this study was to explore the adverse reactions/effects prevalence, types, duration, and severity of inactivated novel coronavirus pneumonia (COVID-19) vaccine among adult frontline health care professionals and educators in Fujairah, UAE

Results

A total of 49 frontline workers in Fujairah, UAE (37 health care professionals and 12 educators) were interviewed. The duration of each interview was ranged between 10 minutes and 20 minutes each time. The mean age of the respondents was found to be 40.44 ± 4.55 years. There were 29 males and 20 females. Participants were asked how they knew about COVID-19 vaccine in Fujairah, UAE, they answered

that they knew from their work. Participants were asked how they participated/selected for COVID-19 vaccine experience, they answered that they received announcements form their works and expressed their desire to receive the vaccine. Participants were asked about the adverse reactions/effects of vaccine, severity, duration of adverse reactions/effects and what they did regarding it.

Prevalence of adverse reactions/effects

The participants were asked whether they experienced an adverse reaction/effects after receiving the first shot of vaccine; all participants were reported that they experienced at least one adverse reaction/effect. The range of COVID-19 vaccine adverse reactions/effects were one to three adverse effects.

Type of adverse reactions/effects

The participants were asked about the type of adverse reactions/effects of COVID-19 vaccine; they reported that the adverse reactions/effects were pain at the vaccine injection site reported by 49 out of 49 participants; swelling/redness of the vaccine injection site reported by 45 out of 49; fatigue reported by 19 out of 49; headache reported by eight; fever reported by one participant.

Duration of adverse reactions/effects

The participants were asked to describe the duration of COVID-19 adverse reactions/effects Participants were reported that the duration of each adverse reaction/effect, they reported the duration were as following: two to three days for the pain at the vaccine injection site after the vaccine first shot and one day to two days after the second vaccine shot. Three to five days for the swelling/redness of the vaccine injection site after the vaccine first shot. Three to seven days for the fatigue after the vaccine first shot. One day for the headache and the fever after the vaccine first shot.

Severity of adverse reactions/effects

The participants were asked to describe/rate the severity of COVID-19 adverse reactions/effects and rate the severity of each adverse reactions/effects from one to ten. Pain severity was described as moderate by majority of participants (40/49) and severe by nine participants. Swelling/redness of the vaccine injection site severity were described as moderate by all participants. Fatigue severity was described as mild by 10 out of 19, moderate by 7 out of 9 and severe by two participants. Headache severity was described as mild by seven and moderate by two participants.

Reporting and management of adverse reactions/effects

Participants were asked whether they reported the adverse reactions, they answered that knew/were informed that these adverse reactions could happened with the vaccine and not required go to the hospital, therefore they did not report it. Participants were asked about how they managed the vaccine reported adverse reactions/effects, they reported that they used analgesics and pain killers for it.

Conclusion

The adverse reactions/effects of inactivated novel coronavirus pneumonia (COVID-19) vaccine (Vero cells) were explored in this study and it was tolerated by the study participants. This study has limitation, it was conducted about one type of covid-19 vaccine and in one emirate only. Future studies in other emirates are very important and highly recommended.

Methods

Study design

A cross-sectional study was conducted over a period of three months between end of September and December 2020 among UAE's adult frontline workers such as health care professionals, university/schools' educators, and others.

Vaccination process

Participants were taking the appointment firstly, then arrived at the vaccination site, registered their names/information, the nurses measured their vital signs, blood pressure, history, then received education about the vaccine and finally then got the first shot of inactivated novel coronavirus pneumonia (COVID-19) vaccine (Vero cells) (Wuhan inactivated vaccine) after their written consents. The second vaccine shot were repeated after 21 days.

Study tools and interview process

A simple tool was developed and validated by four university lecturers, which consists **of two parts**: **part one** included quantitative questions related to the demographic characteristics of respondents, qualifications, and workplace. **Part two** consisted of a qualitative interview with a representative sample of UAE's frontline workers in Fujairah to explore the adverse reactions/effects of COVID-19 vaccine, types of adverse reactions/effects, duration, severity, reporting and management of COVID-19 vaccine. The participants were asked to describe the COVID-19 adverse reactions/effects, types, duration and rate the severity by giving each adverse reactions/effects a score from one to ten. The interview was conducted at the vaccination site and through mobile calling over three months. Interview language were conducted in Arabic or English based on participants preferences. Purposive sampling was used to enrol the study participants in the study until no new data were obtained and saturation was reached after interviews with 49 participants. Interview were conducted twice with each participant; the first interview was conducted between the vaccine first and second shot; the second interview was conducted during the first month after the second shot.

Ethical approval

The study was performed following the ethical protocols outlined in the World Medical Association Declaration of Helsinki guideline[6] and approved from the University of Science and Technology of

Fujairah, UAE. Furthermore, consent was also taken from the respondents. Questions that may related the personal information were avoided.

Statistical analysis

Thematic analysis was used in this study.

Declarations

Conflict of interest

There is no conflict of interest

Data availability

The authors declare that [the/all other] data supporting the findings of this study are available within the paper.

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To participants

Contributions

All authors participated equally in the study conception, design, statistical analysis planning, and analysis and interpretation of the data and have reviewed and approved the manuscript.

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