

Conference Paper

Reactogenicity Profile of Health Workers Recipients of Heterologous mRNA Boosters Vaccine at Arifin Achmad Hospital

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ABSTRACT

Coronavirus disease (COVID-19) is an infectious disease that has been designated by the World Health Organization (WHO) as a global pandemic. There are different types of COVID-19 vaccines that have been developed. Reactogenicity is a reaction that occurs immediately after vaccination. Differences in individual immune responses against antigens can trigger local and systemic reactions. Medical events due to immunization are known as Adverse Event Following Immunization (AEFI). The purpose of this study was to determine the reactogenicity profile of health workers receiving the heterologous mRNA (Moderna) booster vaccine at Arifin Achmad Hospital. This study was a cross-sectional study to determine the Adverse Event Following Immunization (AEFI) of health workers receiving heterologous mRNA booster vaccines (Moderna) at Arifin Achmad Hospital. Respondents in this study were mostly women (63.2%), aged 30-39 years (42.5%), overweight (50.6%), had no comorbid disease (74.7%) and were not survivors of COVID-19 (86.2%). From a total of 87 respondents, there were KIPi in the form of general complaints of fever/chills in 70 respondents (80.5%), swelling in the injection area in 44 respondents (50.6%), muscle pain in 72 respondents (82.8%), decreased/increased appetite 17 respondents (19.5%), often sleepy/sleep longer 14 respondents (16.1%), numbness in hands and/or feet 8 respondents (9.2%), nasal congestion 11 respondents (12.6%), and cough 6 respondents (6.9%).

Keywords: AEFI, health worker, heterologous booster vaccine, neutralizing antibody, reactogenicity

Introduction

Coronavirus disease (COVID-19) is an infectious disease that has been designated by the World Health Organization (WHO) as a global pandemic. There are different types of COVID-19 vaccines that have been developed. The vaccine is expected to reduce the spread of COVID-19. Health workers who work on the front lines are the group that has the highest risk of exposure to the SARS CoV-2 virus. Many health workers have confirmed COVID-19 (Khoirunisa et al., 2020). Reactogenicity is a reaction that occurs immediately after vaccination. Differences in individual immune responses against antigens can trigger local and systemic reactions (Chapin-Bardales et al., 2021). Medical events due to immunization are known as Adverse Event Following Immunization (AEFI). The emergence of various news about side effects after getting a vaccination makes people fearful, including health workers. This is due to the emergence of news of people experiencing fever, dizziness, pain and even news of residents who died after being vaccinated. Even with the emergence of this news, it makes residents hesitate to vaccinate. The emergence of

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news of a new variant of COVID-19 also has a considerable impact, due to the increasingly dangerous COVID-19 and the lack of effectiveness of the vaccine against the new variant of COVID-19 (Sutton et al., 2022).

Material and Methods

This study used a quantitative method with a cross-sectional approach. Adverse Event Following Immunization (AEFI) profile was obtained by conducting interviews using interview guidelines and filling out questionnaires. Primary data in the form of respondent characteristics and AEFI profiles were obtained directly from respondents by conducting interviews using interview guidelines and filling out questionnaires. The population in this study were all health workers at RSUD Arifin Achmad. The research sample was all health workers at Arifin Achmad Hospital who met the inclusion criteria and did not meet the exclusion criteria. The sampling technique was carried out by consecutive sampling. The inclusion criteria in this study were health workers who received mRNA vaccine boosters, aged > 18 years, willing to participate in the study (informed consent). Exclusion criteria in this study were pregnant or breastfeeding had a history of chronic disease in the form of kidney failure, DM with multiple complications, and cancer, or was on long-term steroid treatment.

Data collection instruments used in this study were a list of questions for interviews and questionnaires. Data collection began after the researchers obtained ethical clearance to carry out the research from the Medical and Health Research Ethics Unit, Faculty of Medicine, University of Riau. The researcher submitted a permit application to Arifin Achmad Hospital. Respondent data was taken from the address listed in the register of internal medicine. Respondents who met the criteria explained the purpose and benefits of the research being conducted than respondents who were willing to be given informed consent and signed the agreement to be used as research samples. Interviews were conducted to determine whether the sample met the inclusion criteria or not and to collect data regarding the criteria from the sample.

Results and Discussion

Respondents in this study were mostly women (63.2%), aged 30-39 years (42.5%), overweight (50.6%), with no comorbid disease (74.7%), and not survivors of COVID -19 (86.2%) AEFI Profile is in table 1.

Table 1. AEFI profile

Variable	N	%
General Complaints		
Fever/Chills	70	80,5
Local Complaints/Injection area		
Swelling in the injection area	44	50,6
Muscle/Musculoskeletal Complaints		
Muscle pain	72	82,8
Digestive Complaints		
Decreased/increased appetite	17	19,5
Psychic Complaints		
Often sleepy/sleep longer	14	16,1
Nervous Complaints		
Numbness in hands and/or feet	8	9,2
Head/Ear/Nose/Throat Complaints		
Nasal Congestion	11	12,6
Heart and Blood Vessels and Breathing Complaints		
Cough	6	6,9

Based on the data in Table 1 above, from a total of 87 respondents, there were several complaints that were felt by the respondents, namely general complaints with the greatest frequency felt by respondents being fever/ chills (80.5%). For local complaints/vaccine injection areas, the largest frequency felt by respondents was swelling in the injection (50.6%). For musculoskeletal/muscle complaints, the largest frequency felt by respondents was muscle pain (82.8%). For digestive complaints, the greatest frequency felt by respondents was a decrease/increase in appetite (19.5%). For psychological complaints, the largest frequency felt by respondents was often sleepy/sleep longer (16.1%). For nerve complaints, the highest frequency felt by respondents was numbness in the hands and/or feet (9.2%). For complaints on the head/ears/nose/throat, the highest frequency felt by respondents was nasal congestion (12.6%). For complaints on the heart and blood vessels and breathing, the greatest frequency felt by respondents was coughing (6.9%). The results of the study by Stosic found that most of the respondents local AEFIs 7 days after the booster dose were pain at the injection site, induration, swelling, and redness (Stosic et al., 2022). Extrinsic and intrinsic factors can affect the reactogenicity profile of vaccines (Hervé, 2019).

Conclusion

Most Adverse Event Following Immunization (AEFI) was fever/chills, swelling in the injection, muscle pain, decreased/increased appetite, often sleepy/sleeping longer, numbness in hands and/or feet, nasal congestion, and cough. Further analysis of the relationship between protective antibodies and AEFI needs to be carried out.

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