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ANTIBODY LEVELS OF HEALTH PERSONNEL POST-BOOSTER VACCINATION PHASE-III

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ABSTRAK : TINGKAT ANTIBODI PADA TENAGA KESEHATAN PASCA VAKSINASI BOOSTER TAHAP-III

Latar Belakang: Tenaga kesehatan adalah salah satu kelompok yang paling beresiko terinfeksi Covid-19 karena interaksinya yang intens dengan pasien. Oleh sebab itu perlu dilakukan upaya peningkatan daya tahan tubuh dengan pemberian vaksin.

Tujuan: Penelitian ini bertujuan untuk mengetahui efektivitas pemberian vaksinasi booster tahap III tenaga kesehatan terhadap peningkatan titer antibody Covid-19.

Metode: Penelitian ini termasuk jenis penelitian kuantitatif deskriptif, teknik pengambilan sampel dilakukan menggunakan rumus slovin.

Hasil: Hasil penelitian menunjukkan bahwa pemberian vaksinasi booster tahap- III terhadap tenaga kesehatan dapat meningkatkan titer antibody COVID-19.

Kesimpulan: Pemberian vaksin booster tahap III efektif meningkatkan daya tahan tubuh terhadap virus Covid-19 yang sebelumnya sudah diberikan dan mampu memperkuat antibody yang sudah terbangun. sehingga resiko penularan virus corona bisa ditekan.

Saran: Puskesmas lain dapat melaksanakan vaksinasi booster tahap-III pada tenaga kesehatan secara menyeluruh.

Kata Kunci : Daya Tahan Tubuh, Invasi Virus Covid-19, Tenaga Kesehatan, Vaksinasi Booster Dosis III

ABSTRACT

Background: Health workers are one of the groups most at risk of being infected with Covid-19 because of their intense interactions with patients. Therefore, it is necessary to make efforts to increase the body's resistance by giving vaccines.

Objective: This study aims to determine the effectiveness of giving booster vaccination phase III to health workers against increasing Covid-19 antibody titers.

Methods: This research is a descriptive quantitative research type, the sampling technique is carried out using the Slovin formula.

Results: The results showed that the administration of the third-stage booster vaccination to health workers could increase the COVID-19 antibody titer.

Conclusion: Giving the booster vaccine phase III is effective in increasing the body's resistance to the Covid-19 virus that has been previously given and is able to strengthen the antibodies that have been built. so that the risk of transmission of the corona virus can be reduced.

Suggestion: Other health centers can carry out a phase-III booster vaccination for health workers as a whole.

Keywords: Body Endurance, Covid-19 Virus Invasion, Health Workers, Vaccination Booster Dose III

INTRODUCTION

The world is currently faced with the problem of the spread of the Covid-19 virus. The outbreak that emerged in Wuhan, China, was first reported to the WHO on December 31, 2019. Covid-19 cases and victims spread across different countries show that Covid-19 has become a global problem, and has an international impact. activities, such as economic and economic. various other activities (Pascarella et al., 2020).

Coronavirus 19 disease (COVID-19) caused by SARS-COV-2 occurs through droplets by attacking the respiratory tract through the ACE2 receptor, causing severe pneumonia, namely Acute Respiratory Distress Syndrome. Covid-19 treatment is still supportive, meaning that it only supports general conditions, for example fever, paracetamol is given, if the food and drink intake is insufficient, an infusion can be given, if there is another bacterial

infection, antibiotics can be given. given (Masnun et al., 2021).

Theoretically, quantitative antibody examination after vaccination is expected to be able to assess the immune response to the vaccine, measure the duration and levels of antibodies that can survive in the body, and consider the level of antibodies that will require a booster (Sunur, 2021).

Until now, there is no treatment for this SARS-CoV-2 virus infection. Probiotics are one of the widely known agents, have been shown to have anti-inflammatory, antiviral effects, are involved in the formation of antibodies, and are lastly involved in the activation of ACE-2 as a receptor for SARS-CoV-2. virus. The use of probiotics to treat COVID-19 infection is still being studied (Luminturahardjo, 2021).

Assessing the effectiveness of the vaccine is important to evaluate, encouraging organizers to check the levels of antibodies formed in students after receiving the Covid-19 vaccination. Quantitative IgG antibody levels are expected to increase significantly after the administration of the Covid-19 vaccination (Bastiana et al., 2021).

There are several types of antibodies, namely IgM, IgG, IgA, and IgE (Halodoc.com, 2021).

The response to the SARS-COV-2 pandemic that is considered the most effective to date is vaccinations equipped with the implementation of health protocols. Understanding the effectiveness of vaccination is currently very important, both to design a better response to SARS-CoV-2, and to provide education to potential vaccination participants (Rotty et al., 2022).

The administration of the Covid-19 vaccine is a preventive step in breaking the chain of spread of COVID-19. Therefore, the government issued a Regulation of the Minister of Health Number 10 of 2021 concerning the Implementation of Vaccination and a Circular Letter on Covid-19 Vaccination with Booster Doses (Balaputra STIKes Bhakti Al-Qodiri Study Program, 2022)

The emergence of the SARS-CoV-2 variant has led to an increase in breakthrough infections, prompting consideration for booster doses of vaccines. Boosters have been reported to be safe and increase levels of SARS-CoV-2-specific neutralizing antibodies, Boosters have been reported to be safe and increase levels of SARS-CoV-2-specific neutralizing antibodies, but how these doses impact the global pandemic's trajectory and herd immunity is unknown. Information on immunology, epidemiology, and fair distribution of vaccines should be considered when deciding the timing and feasibility of a COVID-19 vaccine booster (Burckhardt et al., 2022).

However, the government's COVID-19 vaccination program is still experiencing problems due to the large amount of misinformation related to the vaccine itself, triggering public unrest and various perceptions. (Kholidiyah et al., 2021).

The main task of nursing management is to ensure that appropriate preventive and safety measures are taken to reduce hazards in the workplace. In this case, the hospital must have appropriate infection control procedures and personal protective equipment (masks, gloves, glasses, protective gowns, hand rubs/hand sanitizers, soap and water, and other cleaning materials) in sufficient quantities for the personnel treating the treated patients. Contracted. confirmed COVID-19. (Banjarnahor et al., 2021).

The Covid-19 Vaccination Program initiated by the government brings new hope in breaking the chain of transmission, by achieving herd immunity, preventing transmission and reducing the number of morbidity and death due to infection with the COVID-19 virus. (Ministry of Health RI, 2021)

Based on research by Z.Matula concluded that administering the third dose of BNT162b2 after two doses of BBIBP-CorV is an effective strategy to significantly improve the humoral immune response and T cells, and

its effectiveness is comparable to the three BNT162b2 vaccines. (Matula et al., 2022).

Giving boosters can increase the titer of residents' antibodies so that they can suppress the transmission of Covid-19 in Indonesia. (Kamila, 2022).

Screening examination using rapid tests on patients suspected of COVID-19 is very helpful in diagnosing COVID-19. The appearance of IgM and IgG can be used as a marker of the duration of infection or the degree of severity of the disease. Neutrophil Lymphocyte Ratio (NLR) is a ratio of increased blood cell count that shows the leukocyte response as the body's first defense from foreign bodies or infections, one of which is caused by a virus. (Lestari et al., 2022).

Tests based on the response of the hosts use serological tests to detect the presence of IgM, IgA, IgG or total antibodies mainly from blood samples. (Pusparini, 2020)

Antibodies are special proteins produced by the immune system to identify and destroy foreign invaders, such as viruses and bacteria. This is where the antibody titer test plays a role to know qualitatively (existingly) and quantitatively (the number of) antibodies in the blood. Antibody titer

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tests are also performed to find out if a person has been infected with pathogens in the past. (Febriani, 2021).

Antibodies can generally form 1-3 weeks after the body has an infection or after the vaccine. There are no exact figures about the antibody titer of a covid-19 survivor and the antibody titer of a person who has received the vaccine because the number of increased antibody titers depends on the immune response of each individual and the examination method will be different (Carolina & Agustiani, 2021).

The coronavirus disease 2019 (COVID-19) pandemic is still happening today in the world, including in Indonesia. Data shows that covid-19 cases to date in Indonesia have passed 4 million cases, with the number of deaths reaching 150,000 cases. Around 1000 cases occurred in health workers health workers (Irsan et al., 2022).

Of the 1,468,768 number of health workers in Indonesia who will get a booster vaccination, there are around 819,174 (55.77%) who have completed getting booster vaccinations. This means that the achievement of booster vaccination is still very far from the target (8) that has been set (Arami et al., 2022).

In Gowa Regency, it will start receiving the third dose of vaccine or booster vaccination at the Regional General Hospital (RSUD) Sheikh Yusuf, Gowa Regency in August 2021 (Amir, 2021). This research is useful for increasing knowledge about increasing antibody titers after Dose III Booster Vaccination for Health Workers. The research hypothesis of dose-III booster vaccination for Health Workers has an effect on increasing the Titer of Covid-19 Antibodies at the Parangloe Health Center, Gowa Regency in 2022.

This study aims to determine the effectiveness of giving phase III booster vaccinations to health workers to increase titers of Covid-19 antibodies.

RESEARCH METHODOLOGY

This research belongs to the type of research. This type of research is descriptive. Descriptive research is a research method that aims to specifically explain natural and social events that occur in society (Salmaa, 2017).

With quantitative descriptive research design. The study was conducted at the Parangloe Health Center, Gowa Regency in March-May 2022. The population in this study was all health workers who worked at the Parangloe Health Center, Gowa Regency. That is 74 people. Use the Slovin Formula the number of samples is 21 people.

RESEARCH RESULTS

Univariate Analysis

Tabel 1.
Frequency Distribution of Respondent Characteristics

Characteristics	Frequency	
	n	%
Profession		
Doctor	1	4.76
Dentist	1	4.76
Midwife	9	42.86
Nurse	7	33.33
Laboratory	1	4.76
Pharmacist	1	4.76
Environment	1	4.76

**Source: Primary Data, 2022*

Table 1 Shows the Professional Characteristics of Respondents The majority of Midwives 42.86%, Nurses 33.33%, then respectively Doctors 4.76%, Dentists 4.76%, Dental Nurses 4.76%, Laboratory Assistants 4.76%, Pharmacists 4.76%, Health Environment 4.76% .

Bivariate Analysis

Tabel 2.
IgG Levels By Profession

Characteristics	Frequency		IgG Anti-SARS-CoV-2
	n	%	
Doctor	1	4.76	Reactive 33481.1 AU/mL
Dentist	1	4.76	Reactive 8884.4 AU/mL
Midwife	9	42.86	Reactive 4160.8 AU/ML- Reactive 38037.0 AU/ML
Nurse	7	33.33	Reactive 2375,2 AU/ML- Reactive >40000.0 AU/ML
Laboratory	1	4.76	Reactive 14942.8 AU/ML
Pharmacist	1	4.76	Reactive 2154.4 AU/ML
Environment	1	4.76	Reactive222474,2 AU/ML

Source: Primary Data, 2022

Table 2 Displaying IgG Content Characteristics Based on the Profession of Reactive Doctor 33481.1 AU / mL, Reactive Dentist 8884.4 AU / mL, 9 Reactive Midwives with titer values between 4160.8 AU / ML-38037.0 AU / ML, 7 Nurses with Reactive IgG Titers 2375.2 AU / ML- Reactive >40000.0 AU / ML, 1 laboratory technician with Reactive titers 14942.8 AU / ML, 1 pharmacist with Reactive IgG titers 2154.4 AU / ML, Environment Health 1 person with results iter IgG Reactive 222474.2 AU/ML.

DISCUSSION

The third dose of vaccine is the vaccine that must be accepted and considered part of the main dose of the vaccine. Usually, it is given to people who experience moderate to severe immune disorders and do not establish sufficient protection when they first get vaccinated (Nurhanisah, 2021). Vaccination aims to provide specific immunity to a certain disease so that if one day it is exposed to the disease, it will only experience mild symptoms (Surabaya Health Office, 2021)The procedures for giving, the place of implementation, the flow of implementation and recording of COVID-19 vaccinations still refer to Circular Number HK.02.02/II/252/2022 concerning Advanced Doses of COVID-19 Vaccination (Booster)(Widyawati, 2022).The Centers for Disease Control and Prevention (CDC) has recommended a third dose of the COVID-19 vaccine in individuals with impaired immunity in a recent announcement (Shekhar et al., 2021).Although antibody levels progressively decline after SARS-CoV-2 infection, immune memory persists for months (Gobbi et al., 2021).

Antibody titer is a type of blood test used to determine the presence and level of antibodies in the blood. This test is useful for investigating whether there is an immune reaction triggered by foreign invaders (antigens) in the body(Choudhary et al., 2021).Many factors can lead to low levels of antibodies. Age is one of them, or a depressed and dysfunctional immune system as in healthy people (Heise, 2021). Quantitative SARS COV2 Antibody Examination is an examination to detect a protein called antibodies, especially specific antibodies to SARS COV2 (Hanie, 2021).Monitor changes in the number of antibodies can be by conducting a test one month and a half of the second COVID-19 vaccination, as well as 3 - 6 months after it (Family, 2022).

CONCLUSION

The high incidence of health workers who are confirmed with the covid-19 virus so that health workers are the priority of vaccine recipients. There is a very significant relationship between the administration of the Phase III booster vaccine and the increase in antibody titers which are expected to increase the body's resistance to the invasion of the Covid-19 virus.

SUGGESTION

In the scientific field, the results of the research that has been carried out are far from perfect, but clinical studies of the Covid-19 antibody titer test for COVID-19 may be urgently needed. With the research results that have been obtained, it will be a reference for subsequent researchers, hopefully this research will bring additional new knowledge.

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