Выводы

В результате исследования выявлено, что грамотрицательные бактерии *P. aeruginosa* и *E. coli* чувствительнее к действию слышимого звука, чем грамположительные *S. aureus* и *E. faecalis*. Это может быть связано с меньшей толщиной клеточной стенки грамотрицательных бактерий и большей ее жесткостью у грамположительных микроорганизмов.

Можно предположить зависимость силы эффекта звуковых колебаний от подвижности и пространственного расположения микроорганизмов. Так у грамположительных бактерий выявлен больший эффект на *E. faecalis,* располагающийся попарно и коротким цепочкам и имеющий жгутики, чем на *S. aureus*, располагающийся в виде виноградных гроздьев и не имеющий жгутиков. У грамотрицательных бактерий больший эффект прослеживается у *P. aeruginosa,* которая подвижнее *E. coli*.

Звуковые колебания средней и низкой частоты воспроизводят низкочастотные вибрации, что вызвало эффект «шейкера» и активировало физиологические процессы питания, дыхания и размножения микроорганизмов в логарифмическую фазу роста развития популяции бактериальных культур.

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ADVERSE EFFECTS FOLLOWING COVID-19 VACCINATION

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Introduction

In December 2020, the first COVID-19 vaccines received emergency use and Billions of doses of vaccine have been administered worldwide. However, some individuals have concerns about receiving COVID-19 vaccination related to vaccine safety and adverse effects.

In randomized clinical trials of COVID-19 vaccines, reported adverse effects included injection site events (e.g., pain, redness, swelling) and systemic effects (e.g., fatigue, headache, muscle or joint pain), with rare serious adverse events. Most adverse effects were mild, but studies reported approximately 50 to 90 % of participants experiencing some adverse effects.

Anaphylaxis after COVID-19 vaccination is rare and has occurred in approximately 5 people per one million vaccinated in the United States. Anaphylaxis, a severe type of allergic reaction, can occur after any kind of vaccination [1].

Thrombosis with thrombocytopenia syndrome (TTS) after Johnson & Johnson's Janssen (J&J/Janssen) COVID-19 vaccination is rare. TTS is a rare but serious adverse event that causes blood clots in large blood vessels and low platelets (blood cells that help form clots). As of March 17, 2022, more than 18.5 million doses of the J&J/Janssen COVID-19 vaccine have been given in the United States. CDC and FDA identified 60 confirmed reports of people who got the J&J/Janssen COVID-19 vaccine and later developed TTS.

CDC has also identified nine deaths that have been caused by or were directly attributed to TTS following J&J/Janssen COVID-19 vaccination. Women ages 30–49 years, especially, should be aware of the increased risk of this rare adverse event. There are other COVID-19 vaccine options available for which this risk has not been seen.

To date, four confirmed cases of TTS following mRNA COVID-19 vaccination (3 after Moderna, 1 after Pfizer-BioNTech) have been reported to VAERS after more than 538 million doses of mRNA COVID-19 vaccines administered in the United States. Based on available data, there is not an increased risk for TTS after mRNA COVID-19 vaccination.

Guillain-Barré Syndrome (GBS) in people who have received the J&J/Janssen COVID-19 vaccine is rare. GBS is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage. After more than 18.5 million J&J/Janssen COVID-19 vaccine doses administered, there have been around 310 preliminary reports of GBS identified in VAERS as of March 17, 2022. These cases have largely been reported about 2 weeks after vaccination and mostly in men, many in those ages 50 years or older.

Myocarditis and pericarditis after COVID-19 vaccination are rare. Myocarditis is inflammation of the heart muscle, and pericarditis is inflammation of the outer lining of the heart. Most patients with myocarditis or pericarditis after COVID-19 vaccination responded well to medicine and rest and felt better quickly. As of March 17, 2022, VAERS has received 2,309 preliminary reports of myocarditis or pericarditis among people ages 30 years and younger who received COVID-19 vaccines.

Reports of death after COVID-19 vaccination are rare. More than 558 million doses of COVID-19 vaccines were administered in the United States from December 14, 2020, through March 21, 2022. During this time, VAERS received 13,434 preliminary reports of death (0.0024 %) among people who received a COVID-19 vaccine [1, 2, 3].

Goal

The objectives of this study were to describe adverse effects and identify factors associated with adverse effects after COVID-19 vaccination in participants in an online cohort study. In addition, the study sought to identify factors associated with more severe adverse effects. These results may help to gain a greater understanding of the real-world experience of adverse effects after COVID-19 vaccination.

Material and methods of the research

Study is an online cohort study that began enrolling participants on March 23rd till March 25th of March 2022 year. Study was basically targeted the population in three cities Colombo, Gomel, and Grodno. Participants are recruited to the study through a digital platform by inviting via social Medias. 133 participants were joined to the survey, who are 18 years or older, and provided consent to participate in the study. After providing electronic consent, participants completed survey.

The result of the research and their discussion

After reporting vaccination, participants were asked to report vaccine adverse effects, with response options including fever, chills, fatigue, sore/scratchy throat, muscle pain, joint pain, headache, other pain, and redness/swelling at the injection site, rash other than at the injection site, allergic reaction/anaphylaxis, other, and none of the above. These response options were chosen because these adverse effects had been reported in vaccine clinical trials. Participants could provide free-text responses to the option of other. Following branching logic, participants reporting adverse effects were also asked the duration of adverse effects and self-rated adverse effect severity (very mild, mild, moderate, severe, and very severe).

At baseline, participants reported characteristics, including age, sex, gender, and highest educational attainment, medical conditions (hypertension, diabetes,

cardiovascular diseases, chronic respiratory illnesses, obesity, joint inflammation, osteoporosis, autoimmune diseases, thyroid diseases, cancer, and other diseases). Participants reported receiving at least 1 dose of vaccine were 5 (3.8 %), 2 doses 89 (66.9 %) and 3 doses were 39 (29.9 %). 72 (54.1 %) participants were non healthcare workers and 61 (45.9 %) participants were health care workers.

Most of the participant's received brand name is Sinopharm (48.1 %) and sputnik v (21.8 %) AstraZeneca/ Oxford (18%) Pfizer-Biotech was (9 %) and Covaxin (2.3 %) Moderna (0.8 %).

The most common vaccine adverse effects were fatigue (49.2 %), muscle pain (40 %), headache (37.5 %), chills 18.9 %, and redness/swelling at the injection site (50.8 %), joint pain (27.5 %), and fever (42.5 %) decreased sleep quality (18.3 %).

Sweating for no reason (9 %) Nausea (7.4 %), abdominal pain (5.8 %) diarrhea (7.4 %).

Outcome of severe or very severe adverse effects (compared with no adverse effects, very mild, mild, or moderate), the strongest factor associated with severe or very severe adverse effects was vaccine 3rd dose.

In this real-world digital cohort of 133 people who reported receiving COVID-19 vaccination, serious adverse effects, such as anaphylaxis or allergy, were rare. Adverse effects were more common after the full vaccination dose, and in participants with younger age, female sex, prior COVID-19, asthma, and anemia were associated with lower odds of reporting adverse effects.

This study has limitations some groups, such as men, older adults, and people belonging to minorities' racial and ethnic groups, rural residents and pregnant women.

Given the online nature of the study, not all participants responded to all surveys.

Conclusion

In this real-world cohort, serious COVID-19 vaccine adverse effects were rare, and overall adverse effects were similar to current published reports.

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DENGUE FEVER IN SRI LANKA

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Introduction

Living in a tropical country like Sri Lanka makes it's citizens prone to dengue fever, which can be almost debilitating and even life threatening if not attended immediately. Dengue fever is an infection caused by dengue virus, of which there are four types. Though not exactly the same, they're related to each other. These viruses are spread by mosquitoes, causing high fever and severe body aches. Although it's a fever caused by a virus it is still very different from a simple viral fever, as it is known to cause major problems and even death. An ordinary viral fever