Mathematical methods for estimating the effectiveness of the Covid-19 vaccine

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Abstract

In mathematics, we have precise methods to measure the effectiveness of the Covid-19 massive vaccination. Vaccinated people should be healthier, and should have a lower death rate than nonvaccinated people. Vaccinated people should have fewer sick days than nonvaccinated people. We are encouraging medical doctors to apply the proposed methods and prove the effectiveness of the Covid-19 vaccination.

Keywords: Covid-19 vaccination, death rate, sick status days

1. Introduction

Alive people in a given country are set “alive”. In this set, we have a subset “vaccinated”. As people are dying in a given time period, we have a set of dead persons. In this set, we have a subset of vaccinated persons. In case vaccines have no impact on the death rate following equation is valid:

$$\frac{\text{vaccinated}}{\text{alive}} = \frac{\text{dead vaccinated}}{\text{total deaths}} \quad (1).$$

We calculate the proportional number of dead vaccinated as follows:

$$\text{dead vaccinated proportional number} = \frac{\text{vaccinated} * \text{total deaths}}{\text{alive}} \quad (2).$$

The proportional number for a given time period should be always bigger than the statistical number of dead vaccinated. In this case, vaccines are saving lives. If the proportional number will be smaller than the statistical number, vaccines are increasing the death rate. This calculation should be done for each month of the year 2021 for 5 age groups: up to 20 years, from 20 to 40, from 40 to 60, from 60 to 80, and above 80. In this way, the so-called Yule-Simpson effect in statistics is excluded. These precise statistical analyses would give us a highly precise result of how massive vaccination decreases the rate of deaths of the entire population, preventing people from dying because of covid. Or eventually, the opposite result is how massive vaccination increases the death rate of the entire population. Results of insurance company OneAmerica are not encouraging: “The head of the insurance company OneAmerica stated that their data indicated that the death rate for individuals aged 18 to 64 had increased 40% over the pre-pandemic period. Scott Davidson, the company’s CEO, stated that this represented the highest death rate in the history of insurance records, which does extensive data collections on death rates each year. Davidson also noted that this high of a death rate increase has never been seen in the history of death data collection. Previous catastrophes of

monumental extent increased death rates no more than 10 percent, 40% is unprecedented [1]. It is becoming clear that Covid-19 vaccination analysis might not get the expected results.

There are no “hidden variables” that could influence the result of the calculation proposed in this article. Vaccinated and non-vaccinated people in a given country are eating the same food, drinking the same water, breathing the same air, and watching the same TV programs. The only reason that could impact their health status is the Covid-19 vaccination.

2. Discussion

At this point, the crucial question is arising: is the Covid-19 vaccine saving more lives or causing excess deaths because of numerous heavy adverse reactions? Research published in NATURE states that the difference in the spread of the virus between those who have been vaccinated and those who have not been vaccinated is negligible [2]. A recent article in LANCET is confirming that Covid-19 is spreading at a similar rate between unvaccinated and vaccinated: “This study showed that the impact of vaccination on community transmission of circulating variants of SARS-Cov-2 appeared not to be significantly different from the impact among unvaccinated people” [3].

Preliminary research on the effectiveness of Covid-19 vaccination is not encouraging. Research done by Ingrid Tojersen has shown that the Covid-19 vaccination has been causing the deaths of the elder population [4,5]. Research done by Sivan Gazid and co-authors is confirming that the natural immunity of unvaccinated people is far better protection than Covid-19 vaccines [6]. At this point, it is clear that it is necessary to calculate the effectiveness of Covid-19 as we are proposing. BMJ editorial is suggesting, that for the rigorous mathematical evaluation of covid vaccines efficacy we need row data [7]. We could calculate the exact impact on the entire population in a given country and worldwide if we would have data on how many people who died in a given time period of one month have been at least once vaccinated. This would allow calculating the proportional number of “dead vaccinated” and comparing it with the actual statistical number of dead vaccinated people.

3. Local measurements of Covid-19 vaccination effectiveness

In each company that has more than 100 employees, we can calculate the effectiveness of the Covid-19 vaccination by comparing the days of work with the sick status days in percentage in a given month or year:

Working days of vaccinated workers in one month..... 100%

Sick days of vaccinated workers in one month..... X%

$$X\% = \frac{N_{\text{sick days of vaccinated workers}} * 100}{N_{\text{working days of vaccinated workers}}} \quad (3)$$

Working days of nonvaccinated workers in one month..... 100%

Sick days of nonvaccinated workers in one month..... Y%

$$Y\% = \frac{N_{\text{sick days of nonvaccinated workers}} * 100}{N_{\text{working days of nonvaccinated workers}}} \quad (4).$$

In a given company, we can easily see which percentage of sick days is higher. According to the Covid-19 vaccination doctrine percentage of sick days should be much smaller in the vaccinated group of people than in the non-vaccinated group of people. EMA, VAERS, and Yellow card reports on high numbers of vaccines' side effects [8,9,10] are alarming bell for detailed analysis proposed in this article.

4. Covid-19 vaccination and number of dead born babies

In Slovenia and worldwide, we observe a highly increased number of dead-born babies in 2022 respect to the previous years. The first check that should be done is the possible influence of Covid-19 vaccination. The number of death-born babies X_D is the sum of the following numbers:

$$X_D = X_6 + X_5 + X_4 + X_3 + X_1 + X_0 \quad (5),$$

where X_6 is the number of dead-born babies where both parents are each three times vaccinated, where X_5 is the number of dead-born babies where one parent is three times vaccinated, and another parent is two times vaccinated (and so on), where X_0 is the number of dead-born babies where both parents have not been vaccinated. Using this model, we could see possible relations with the Covid-19 vaccination.

Until now the responsible team of medical experts in Slovenia for vaccination did not carry out one of three suggested statistical analyses. Medical advertising for vaccination is going on in main media without a single mathematical analysis. This is the clear sign that in Covid-19 vaccination for now there is no desire for real science.

5. Conclusions

The Covid-19 pandemic has brought huge numbers of scientific articles to scientific literature. What is still missing is the mathematical evaluation of public data about side effects and fatality cases of the Covid-19 vaccination. This is important research to be done if we want to maintain scientific standards of the Covid-19 vaccine's real effectiveness.

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