ICU
MANAGEMENT & PRACTICE

COVID-19 Vaccines Prevented 20 Million Deaths Worldwide

Findings from the first modelling study to quantify the impact of COVID-19 vaccines show that nearly 19.9 million out of a potential 31.4 million deaths were prevented in the first year (December 2020-December 2021) after the introduction of the vaccine. The findings are based on data from 185 countries using COVID-19 death records and total excess deaths from each country.

It is not possible to measure how many deaths would have occurred without vaccinations, but mathematical modelling offers a useful tool for assessing alternative scenarios. In this study, the researchers used a model of COVID-19 transmission using country-level data for officially recorded COVID-19 deaths occurring between December 2020 and December 2021. This data was compared with a hypothetical scenario with no vaccines.

The model accounted for variations in vaccination rates between countries and differences in vaccine efficacy in each country based on the vaccine types that were predominately used in those areas. China was not included in the analysis owing to its large population and strict lockdown measures.

Nearly two-thirds of the world's population has received at least one dose of a COVID-19 vaccine. In particular, COVAX has ensured access to affordable vaccines in lower-income countries. The initial target was to give two doses to 20% of the population in the counties covered by this commitment. The World Health Organization (WHO) has expanded this target to fully vaccinate 70% of the world's population by mid-2022.

Findings show that an estimated 18.1 million deaths would have occurred during the study period if vaccinations had not been implemented. Of these, vaccination has prevented 14.4 million deaths, which is equivalent to a global reduction of 79%. Further analysis based on total excess deaths during the same period shows that COVID-19 vaccination prevented an estimated 19.8 million deaths out of a total of 31.4 million potential deaths that would have occurred without vaccination. This translates into a reduction of 63%.

More than three-quarters of deaths averted were due to the direct protection against severe symptoms provided by vaccination. The remaining 4.3 million averted deaths were prevented by indirect protection from reduced virus transmission in the population and reduced burden on healthcare systems.

The researchers also observed that the impact of the vaccines changed over time and in different areas of the world as the pandemic progressed. For example, during the first half of 2021, the greatest number of deaths prevented by vaccination was seen in lower-middle-income countries, but during the second half of 2021, this trend shifted, and the greatest impact was observed in higher-income countries.

The study also estimates that another 599,300 deaths could have been prevented if the WHO had achieved its target of vaccinating 40% of the population in every country by the end of 2021. Most of these deaths were in the Africa and Eastern Mediterranean regions. If the targets set by the WHO had been achieved, nearly 1 in 5 lives lost in low-income-countries from COVID-19 could have been prevented. This also highlights the problem of inequalities in access to vaccines worldwide.

Eighty-three countries included in the analysis are covered by the COVAX commitment to affordable vaccines. An estimated 7.4 million deaths were prevented out of a potential 17.9 million. Failure to meet the COVAX target of fully vaccinating 20% of the population is estimated to have resulted in an additional 156,900 deaths. These preventable deaths were concentrated in 31 African nations.

These findings highlight the remarkable impact of vaccination on the COVID-19 pandemic. While the focus on the pandemic has now shifted, it is important to ensure that vulnerable people are still protected. Fair access to COVID-19 vaccines is crucial, and efforts should be made to improve vaccine distribution and infrastructure. There is also a need to combat vaccine misinformation and improve vaccine demand.

Source: The Lancet Infectious Diseases
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