Assessing the effectiveness of COVID-19 vaccines in older people in Latin America

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Following their introduction towards the end of 2020, COVID-19 vaccines have been evaluated in terms of prevention of complications, hospitalisation rates, and mortality levels among those who are vaccinated compared with those who are not.[1] Assessing the efficacy of vaccines is crucial for their use, but studies that assess real-world effectiveness of vaccines are also highly relevant, especially those comparing the efficacy of available vaccines in a specific country and those assessing efficacy in specific population groups that differ on certain factors (eg, age and gender).[2]

Nevertheless, even as late as March, 2022, there is still a low number of such studies in low-income and middle-income countries, particularly in Latin America and Africa.[3] A study analysing the effectiveness of COVID-19 vaccines in Latin America was conducted in Chile,[4] with a cohort of approximately 10·2 million people. This study assessed the CoronaVac vaccine in people aged 60 years or older, and showed effectiveness of 86·3% (95% CI 84·5–87·9) for the prevention of COVID-19-related hospitalisation and 86·5% (84·6–88·1) for the prevention of COVID-19-related deaths among people who were fully vaccinated (ie, (≥14 days after receipt of the second dose), after adjusting for covariates. .

In *The Lancet Healthy Longevity*, Leonardo Arregocés-Castillo and colleagues[5] explored the effectiveness of Ad26.COV2-S, BNT162b2, ChAdOx1 nCoV-19, and CoronaVac, which were the first four available COVID-19 vaccines in Colombia, using a population-based matched-pair cohort study (called the ESPERANZA cohort) that included over 2 million participants (n=2828294) aged 60 years and older. This older age group is considered a population with a higher risk of severe disease, complications, and death than younger age groups due to age and associated risk factors (eg, the higher presence of comorbidities, such as obesity, diabetes, hypertension, and cardiovascular disease).[6] In their study, Arregocés-Castillo and colleagues found that the overall effectiveness of the available vaccines for preventing hospitalisation without subsequent death was 61·6% (95% CI 58·0–65·0), 79·8% (78·5–81·1) for preventing death after hospitalisation for COVID-19, and 72·8% (70·1–75·3) for preventing death without previous COVID-19 hospitalisation.

The overall effectiveness did not differ significantly by specific vaccine, though BNT162b2 and ChAdOx1 nCoV-19 were shown to be most effective. These highly relevant findings reinforce the importance of vaccination among older people to prevent not only the risk of infection and severe disease, but also hospitalisation and death. This study also highlights the importance of these assessments amid the pandemic, accounting for dynamic changes that include the circulation of multiple variants of concern.[7] These new variants pose novel challenges for the effectiveness of vaccines, especially in high-risk populations.[8] Arregocés-Castillo and colleagues' findings in Colombia were consistent with the benefit of vaccination in older people identified by the aforementioned study done in Chile.[4] Nevertheless, a limitation of the Colombian study is that it only assessed the effectiveness of vaccines against the circulating variants of concern during the study period. Future studies should consider this limitation.

As Arregocés-Castillo and colleagues indicated, although expected, the effectiveness of vaccines decreased by age. An additional or booster dose can effectively contribute to improving the immune response, therefore becoming a possible solution to the decreased effectiveness of vaccines in older people. On the basis of these findings, in early October, 2021, Colombia started offering booster doses to people older than 50 years and later extended this to younger groups.

"Esperanza" means hope in Spanish. Indeed, the findings of the study by Arregocés-Castillo and colleagues are part of the hope that health authorities continue to use effective COVID-19 prevention measures, including vaccination, jointly with other public health measures, while maintaining an evidence-based approach to managing COVID-19. Only through a thorough and collective approach can there be hope to achieve appropriate control of the pandemic and, hopefully, shortly bring an end to the ongoing pandemic phase of COVID-19 and the deleterious consequences on populations worldwide. Therefore, Colombia, as

well as other low-income and middle-income countries in Latin America, Africa, and Asia, need to assess the effectiveness of COVID-19 vaccine boosters in older people throughout 2022 and broaden the access and availability of vaccines to all individuals who could benefit within and beyond the limits of specific counties.

International, national, and regional health authorities must keep working on population access to and education on basic hygiene and sanitation, as well as the safety, efficacy, and effectiveness of COVID-19 vaccines. Despite the overwhelming evidence for the effectiveness of vaccines, vaccination coverage is far from 100%, even in high-income countries. There is large room for improvement, in which public health scientists and practitioners could have a key role.[9] Evidence-based information is crucial for disseminating correct health messages to enhance public trust and interest to adhere to vaccine schedules and boosters,[10] especially in high-risk populations such as older people.

Only a global approach that secures access to vaccines for all who need them presents a meaningful pathway to an effective resolution of this catastrophe. The solutions have been developed in record time, with not only one, but multiple effective vaccines. These vaccines now need to be distributed to all that need them. Adequate distribution, education, and information are key factors and represent some of the essential learnings that have been extracted from the current crisis. These learnings need to be implemented to avert and better respond to future pandemics.

We declare no competing interests.

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