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COVID-19 immunisation in older people

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The public health rationale to extend the benefits of vaccination from childhood to adulthood to late adulthood had already been put forward before the COVID-19 pandemic as the new standard for a healthy transition to older age.[1] The burden of morbidity and mortality associated with COVID-19 disproportionately affected the frailest and oldest people, making immunisation the most effective intervention to protect this population.[2] To preserve and enhance healthy ageing, public health efforts should prioritise the provision of adequate and equitable immunisation services to those exposed to biological and social risk factors that could worsen health outcomes.[3] Global COVID-19 vaccine shortages and low coverage, mostly in low-middle-income countries and vulnerable groups, call for the planning and implementation of much-needed flexible strategies and rationing policies to guarantee vaccine equity.

In *The Lancet Healthy Longevity*, Donald Vinh and colleagues[4] conducted a large, prospective, observational cohort study in long-term care facilities in Montréal, Québec, Canada, and reported that anti-SARS-CoV-2 serological titres increased 4 weeks after the first dose of a COVID-19 mRNA-based vaccine (mRNA-1273 [Spikevax; Moderna] or BNT162b2 [Comirnaty; Pfizer–BioNTech]) and then declined up to the second dose in residents aged 65 years and older. These patterns were equally observed both after the administration of homologous or heterologous vaccination and with an extended 16-week interval between the two doses, with differences observed only by previous SARS-CoV-2 infection status. The study adds to the existing knowledge on this subject, with key implications for public health. First, this is the first population-based study to explore real-world serological responses to COVID-19 vaccination among residents of long-term care facilities, a specific at-risk group for their exposure to health-care-associated infections and susceptibility to severe clinical disease forms. Second, Vinh and colleagues reported the non-inferiority of COVID-19 mRNA-based heterologous vaccination and the efficacy of a delayed second dose. Moreover, unlike other vaccines (eg, influenza, zoster, and pneumococcus), COVID-19 vaccines showed no significant variation by sex, age, and comorbidities in terms of the IgG humoral immune responses induced.

Given the rapidly changing context of the COVID-19 pandemic, these findings are valuable for informing ongoing and future vaccination campaigns and prioritising population targets. Indeed, the continued emergence of viral variants causing de novo or breakthrough infections raises new concerns for the swift implementation of COVID-19 vaccination. Recent evidence supports the need for a booster dose[5] to prevent SARS-CoV-2 infection with the B.1.1.529 (omicron) variant, with the effectiveness of three doses ranging from 55% to 80%, compared to 0–20% protection with two doses.[6] Therefore, avoiding the insurgence of new variants and stopping the unconstrained spread of SARS-CoV-2 via extensive vaccination coverage is crucial for the potential evolution of COVID-19 into an endemic disease.

The possible coexistence of safe ageing with the global spread of SARS-CoV-2 imposes a changing dynamic for research pathways and interventions in public health. Immediate objectives include both regaining the trust of vaccine-hesitant individuals and administering booster doses to the frailest individuals, particularly those older than 70 years who are still unprotected. On the research side, priorities include accumulating evidence on long-lasting protection, and studying immunosenescence and vaccination interactions. In fact, serological protection should be investigated in depth, considering the reduced vaccine responses in older people who seem to have relatively few mild adverse events following immunisation.[7] Moreover, although the approved COVID-19 vaccines have shown a reliable safety and immunogenicity profile so far, antibody titres in older adults might decline faster than in younger adults.[8] Therefore, we need real-world data on the reduction in infection risk and extent of disease protection to evaluate the clinical efficacy of two-dose and three-dose vaccine schedules, as well as the need for a possible annual additional dose. Finally, data linkage between electronic immunisation records and health records on SARS-CoV-2 testing and infections should be promoted to estimate the population-level effectiveness of immunisation.[9]

In the medium to long run, identifying models to integrate COVID-19 vaccination into national immunisation schedules for older people is a major public health responsibility.[10] Findings from the study

by Vinh and colleagues[4] on the interchangeability of COVID-19 mRNA-based vaccines and extended-dosing intervals endorse the feasibility of safe and flexible administration in the older population.[4] Additionally, the high adherence to COVID-19 vaccination reported among older adults in countries where large-scale vaccination campaigns and governmental behavioural nudges, such as the COVID pass, were put in place could be a good starting point. The unprecedented favourable response to, and the availability of, widely accepted COVID-19 vaccines is an opportunity that must not be squandered. The scale and rapid rollout of the COVID-19 immunisation campaign has stimulated previous successful vaccination programmes, such as the annual seasonal influenza vaccination offered to high-risk groups, and the strategy followed so far could be incorporated into future immunisation plans. Nationwide stakeholders' participation is required to adjust long-standing policies to new population needs; specific information campaigns and vaccination delivery services (ie, a new immunisation session in autumn) targeting older people must be designed throughout national health services, from primary to secondary care levels.

Lessons learned from the COVID-19 pandemic and the results of the study by Vinh and colleagues[4] on the strategic use of vaccines in older people suggest how to effectively handle prevention as a whole. The prioritisation of recommended vaccinations among frail, older people should aim to help identify new approaches for promoting the health of this population and support efforts that contribute to healthy ageing.

We declare no competing interests.

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