Immunisation of older adults: where are the frail?

Living longer offers unprecedented possibilities and can be rejoiced if one is in a robust, functional state in these additional years of life. However, with increasing age, older adults are at increased risk of a myriad of diseases, often leading to decreased quality of life and increased burden to the health-care system. Age-related deterioration of the immune system makes older individuals susceptible to a wide spectrum of infectious diseases (eg, pneumococcal disease, influenza, and herpes zoster) that are a major cause of morbidity and mortality.[1] Outcomes from global immunisation of infants have led to the increasing belief that the ageing population could benefit similarly from vaccinations.

Acknowledging the effectiveness of vaccines in preventing infectious disease, many high-income countries have already begun to implement national health policies for immunising older adults.[2] However, the challenges of developing effective vaccines for older adults are immense because vaccine effectiveness is affected by the biological reserves of the ageing individuals, which can vary widely. Immunosenescence, which is the alteration of the immune system with increasing age, has been highlighted as a major barrier in developing effective vaccines to treat vaccine-preventable diseases in older adults.[3] Additionally, older individuals who are considered to be frail are particularly affected by immunosenescence because a process known as inflammageing, which is the hallmark of immunosenescence, accelerates frailty and also reduces the effectiveness of vaccines in older adults.[4]

Unfortunately, older adults who are already frail or pre-frail are being left in an unfair and biased situation with added vulnerability to infectious diseases because greater efforts are being put into developing vaccines for relatively healthier and younger older adults, with randomised controlled trials (RCTs) rarely including frail participants. Additionally, the prevalence of frailty is increasing,[5] and exclusion of frail individuals from RCTs might result in the misrepresentation of the older population in the study results and subsequent incorrect implementation of health-care policies. Overall, such results will be based on insufficient evidence, and recommendations given to prescribing clinicians and health-care workers for the further protection of the older population from infectious disease would create confusion, in particular for the frail and demented. Immunisation strategies for older individuals, including vaccine development and policy making, should adopt a more personalised approach that is based on the biological state of the ageing individual (eg, frail *vs* non-frail), although this will be a great challenge.

I declare no competing interests.

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