

Vaccinations in Older Adults with Gastrointestinal Diseases

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KEYWORDS

- Vaccination • Prophylaxis • Gastrointestinal diseases • Inflammatory bowel disease
- Cirrhosis • Hepatitis • Zoster • Influenza

KEY POINTS

- Older adults (age ≥ 65 years) have decreased response rates to most vaccines.
- Patients with chronic gastrointestinal diseases, including chronic liver disease and inflammatory bowel disease, are at increased risk of infections, and generally respond less robustly to vaccines.
- Vaccination status should be assessed and appropriate vaccines administered in the older adult population with chronic gastrointestinal diseases, who are more susceptible to vaccine-preventable illnesses than their younger counterparts.
- Special vaccination considerations for older adults with chronic gastrointestinal diseases include the potential use of double-dose influenza vaccination, avoidance of the live influenza vaccine, and special considerations for the herpes zoster vaccine at the age of 60 and older.

INTRODUCTION

According to the 2012 census, 13.7% of the United States population is older than 65 years. It is projected that by 2050, nearly 35% of the population in the will be over that age.¹ Improvements in health care treatment and prevention, including vaccinations, have led to an increase in the average life expectancy worldwide, especially in industrialized nations.¹ Vaccines are a cost-effective and efficient way of preventing morbidity and mortality caused by infectious disease.² Because the efficacy of a vaccine depends on the quality of the patient's immune system, the elderly and patients who are immunocompromised are frequently not as protected by vaccinations as the general population.³ Multiple recent studies have shown that elderly patients (generally defined as those older than 60 years), particularly those older than

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75, have decreased immune responses to vaccines in comparison with individuals who are 60 to 74 years of age and even less than those below the age of 60.^{3,4} Given the aging population, more patients with chronic gastrointestinal illnesses, including chronic liver disease (viral hepatitis, cirrhosis, autoimmune hepatitis) and inflammatory bowel disease (Crohn disease and ulcerative colitis), will face the challenge of diseases that may compromise their ability to fight various infections, as well a natural age-related decline in their immune system that may decrease the effectiveness of vaccinations.

ELDERLY RESPONSE TO VACCINATION

The age-related decline in the immune response is called immunosenescence, which results from several changes in the immune system that occur as people get older, including changes in the function of antigen-presenting cells, loss of native T cells, and reduced B-cell affinity, production, and half-lives (Fig. 1 and Table 1).⁵⁻¹⁴ Furthermore, they have an increased likelihood of vaccine-preventable infections, and are more apt to experience greater severity of influenza, meningitis, pneumococcal pneumonia, tetanus, and herpes zoster.^{3,7,9} These infections can also exacerbate underlying comorbidities in the elderly, leading to worse outcomes.¹⁵

CLINICAL VIGNETTES

Case 1

A 68-year-old man with mildly elevated liver enzymes undergoes evaluation and is found to have a new diagnosis of hepatitis C cirrhosis. What vaccinations should be considered?

Case 2

A 71-year-old practicing physician with ulcerative colitis on azathioprine (2.5 mg/kg daily) inquires about what vaccines she should receive. What do you recommend?

VACCINATION PRINCIPLES FOR PERSONS OF AGE 60 AND OLDER

In general, the adult schedule for vaccinations should be followed for all patients with chronic gastrointestinal conditions, similar to those without chronic illnesses, with a few specific differences as noted in Table 2. The vaccines for which older age marks a change from recommendations in younger people include measles-mumps-rubella (MMR) vaccine, pneumococcal vaccination, and zoster vaccination. Influenza vaccination is discussed here as well, given the very significant impact of this seasonal infection on those aged 65 years and older.

MMR Vaccination

The MMR vaccine is only indicated for individuals born in 1957 or later without childhood vaccination, as all those born before 1957 are generally considered immune. An exception to the rule is for health care providers born before 1957, who do require revaccination with MMR if they do not have serologic evidence of immunity to measles, mumps, or rubella.

Pneumococcal Vaccination

The 23-valent pneumococcal polysaccharide vaccine (PSV23; Pneumovax) is recommended for all adults age 65 years or older. Furthermore, patients who have previously

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