

Risk factors for herpes zoster: should people with asthma or chronic obstructive pulmonary disease be vaccinated?

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Background

- HZ is a vaccine-preventable disease caused by reactivation of the latent varicella-zoster virus¹
- 1 in 3 people will develop HZ in their lifetime²
- A compromised immune system due to aging or chronic conditions, such as respiratory disease, is linked to increased susceptibility to HZ³

Purpose

We reviewed the literature on HZ in adults with asthma or COPD to help inform vaccination guidelines and practices

Methods

Literature search in:



Entries on: HZ, asthma, and COPD, and related vaccination data,

guidelines, or recommendations

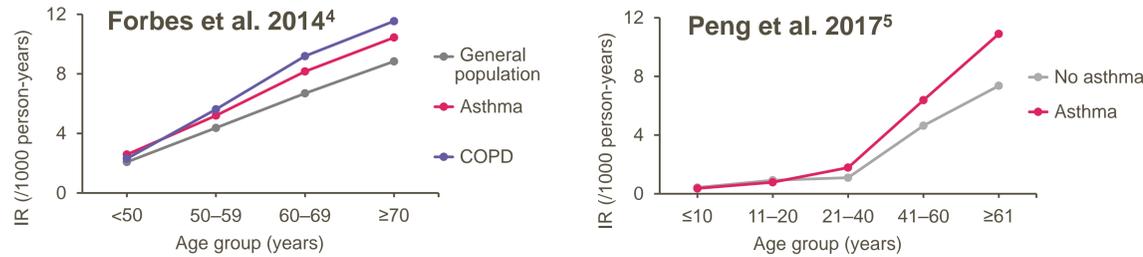
Search period: up to August 4, 2021

312 publications manually reviewed

17 relevant studies identified³⁻¹⁹

Results

The risk of HZ in people with asthma or COPD increases with age



The risk of HZ and related complications in people with asthma or COPD is higher vs healthy controls

↑ risk* of HZ for those with asthma or COPD vs controls noted in:

Age category (years)	Forbes et al. 2014 ⁴	Kwon et al. 2016 ⁶	Peng et al. 2017 ⁵	Munoz-Quiles et al. 2018 ⁷	Kim et al. 2020 ⁸	Thompson-Leduc et al. 2020 ⁹	Batram et al. 2021 ¹⁰
18-49	+						+
21-40			+				
40-49						+	
41-60			+				
50-59	+			+		+	+
≥50		+					
60-69	+			+		+	
≥60 ¹⁰ /≥61 ⁵			+				+
70-79				+		+	
≥70	+			+		+	
≥80				+		+	
20-year intervals from 20-≥60					+		

*Outcomes reported were: OR, HR, IR and RR, depending on study design

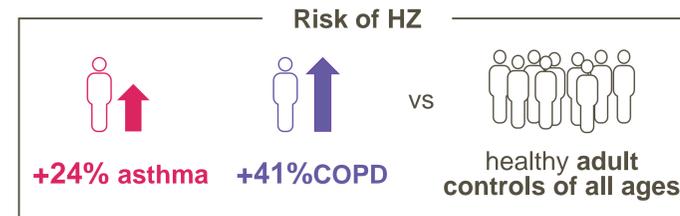
Conclusions

- Adults with asthma or COPD have an increased risk of HZ
- Vaccination is currently recommended for patients aged ≥50 years with respiratory disease
- Additional data are required to determine if young patients (aged <50 years) may also benefit from HZ vaccination

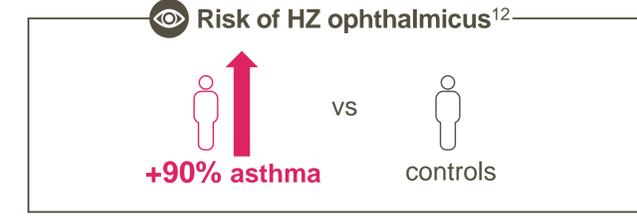
Clinical implications

- Increased awareness of the link between respiratory disease and elevated risk of HZ is needed
- Further research and re-evaluation of vaccination guidelines and practices could help reduce the associated disease burden

According to a meta-analysis of 12 studies³:



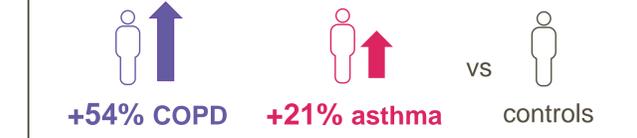
↑ healthcare resource utilization in people with HZ and COPD vs those with HZ⁷ or COPD alone¹¹



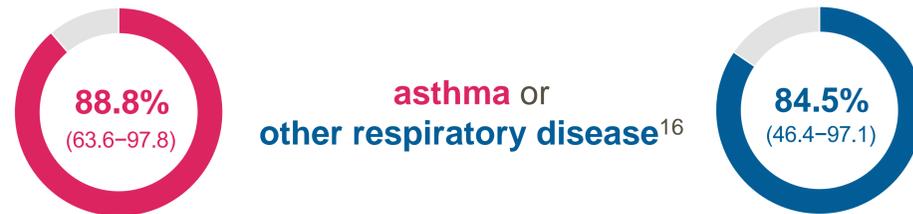
ICS use linked to increased risk of HZ

Four studies linked ICS use to ↑ risk of HZ^{4,7,10,15}, possibly underpinned by immunosuppressive action but confounded by disease severity (scan the QR code for additional information)

Risk of post-herpetic neuralgia¹³



A pooled post-hoc analysis of two RCTs in people aged ≥50 and ≥70 years showed high RZV efficacy against HZ in those with:



However, studies in people with COPD have reported: Low vaccination series completion¹⁷, Low awareness among HCPs¹⁸ and patients¹⁹ regarding the high risk of HZ

Few national recommendations for vaccination with RZV for people with asthma or COPD

	USA ²⁰	DE ²¹	IT ²²	CH ²³	NZ ²⁴
Asthma		+(bronchial)		+(severe)	
COPD	+	+	+	+	+
Age group (years) vs general population	≥50 vs ≥50	≥50 vs ≥60	≥50 vs ≥65	≥50 vs ≥65	≥50 vs ≥65

The FDA²⁵ and EMA²⁶ recently approved RZV use in adults aged ≥18 years

Young adults with asthma or COPD are not widely included in recommendations

HZ vaccine efficacy and safety data in adults with asthma or COPD aged <50 years are limited

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Results

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in adults with HZ vs in controls	1.00 (0.94–1.07) for ICS use ¹⁴
in people aged ≥50 years with HZ vs in controls	0.83 (0.45–1.54) for ICS use ⁶
OR in people with HZ vs in controls	patients aged ≥18 years ↑ with asthma + medication vs asthma – medication patients aged ≥50 years ↑ with COPD + medication vs COPD – medication ¹⁰
when adjusting for ICS use vs when adjusting for matching factors only	patients aged ≥ 18 years { ↓ with asthma (1.11 [1.06–1.16] vs 1.24 [1.20–1.28]) ↓ or COPD (1.22 [1.17–1.28] vs 1.34 [1.29–1.39]) ⁴
HR in people aged ≥50 years vs in controls with no COPD	↑ 1.67 (1.43–1.96) for people with COPD – corticosteroids 2.09 (1.38–3.16) for people with COPD + ICS 3.00 (2.40–4.75) for people with COPD + oral corticosteroids ¹⁵
RR in people aged ≥50 years vs in controls with no COPD	↑ 1.45 (1.41–1.50) for people with COPD – corticosteroids 1.61 (1.52–1.71) for people with COPD + ICS ⁷

Data are OR/HR/RR (95% CI)

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