COVID-19 may increase the risk of herpes zoster in adults ≥50 years of age

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Objective
We performed a retrospective cohort study to investigate the potential association of HZ occurrence and COVID-19 diagnosis.

Methods
Retrospective cohort study based on US databases

HZ incidence rates were compared between individuals with a COVID-19 diagnosis and those without COVID-19. Adjusted relative risk was estimated by Poisson regression. Adjusted relative risk was also estimated for the subset of individuals hospitalized with COVID-19.

Results
Post-matching, baseline characteristics and length of follow-up were similar in both cohorts (except for cost).

The overall observed HZ incidence rate per 1,000 person-years was higher in the COVID-19 versus the non-COVID-19 cohort.

The HZ risk was significantly higher in individuals with COVID-19; a numerically increased risk was seen until 183 days after COVID-19 diagnosis but not afterwards.

Conclusions
Older adults with COVID-19 had a significant higher risk of developing HZ than those without COVID-19.

It remains important to maintain vaccine uptake for vaccine-preventable diseases during a pandemic. Our findings identify COVID-19 as a potential risk factor and highlight the relevance of maintaining recommended HZ immunization for individuals ≥50 years of age.

Background
COVID-19 pandemic

Several case-reports of shingles (herpes zoster; HZ) in COVID-19 patients, especially in older adults, have been published.

Hypothesis: SARS-CoV-2-induced T-cell immune dysfunction may lead to reactivation of latent varicella-zoster virus (VZV).

Conclusions

COVID-19 cohort
hospitalized COVID-19 cohort
individuals with COVID-19 diagnosis*
individuals without COVID-19 diagnosis, probable or suspected COVID-19

non-COVID-19 cohort subset
non-COVID-19 cohort subset
individuals without COVID-19 matched with those from hospitalized cohort

HZ
no HZ
HZ
no HZ

HZ incidence rates

Selected variables

COVID-19 cohort
N = 394,677
non-COVID-19 cohort
N = 1,577,346

Age (years, mean ± SD) 64.8 ± 11.6 64.9 ± 11.5
Sex (male, %) 46.1 46.1
Had ≥1 immunocompromising condition/risk factor before index date (%) 63.6 62.1
Cost during 1 year before index date (in log, mean ± SD) 8.99 ± 2.29 8.37 ± 2.88

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By period of time after COVID-19 diagnosis

Overall 1.15 1.07 1.24 15% p < 0.001
By period of time after COVID-19 diagnosis

day 1–30 1.20 1.04 1.38 20% p = 0.01
day 31–90 1.11 0.98 1.26 11% p = 0.11
day 91–183 1.28 1.12 1.48 28% p < 0.001
after day 183 0.77 0.58 1.01 23% p = 0.06

Hospitalizations

0.72 1.21 1.03 1.41 21% p = 0.02

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