# *Herpes zoster reactivation in a cohort of people living with HIV vaccinated with recombinant vaccine*

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## BACKGROUND

People living with HIV (PLWH) have a higher risk of herpes zoster (HZ) reactivation and postherpetic neuralgia (PHN) compared to general population.

Our study aims to evaluate prevalence of HZ reactivation and PHN after vaccination with recombinant vaccine in a population living with HIV, and to identify risk factors associated with recurrence.

## METHODS

We conducted a prospective, observational, monocentric, cohort study, enrolling all the patients of at least 18 years of age who were vaccinated with recombinant vaccine for HZ (RZV) from January 2022 to December 2023.

A questionnaire was proposed to all the subjects at least 6 months after vaccination, inquiring about previous history of HZ and PHN, and recurrence after vaccination. Moreover, we collected data regarding demographic characteristics, comorbidities, concomitant medication, viro-immunological status and antiretroviral (ARV) regimens.

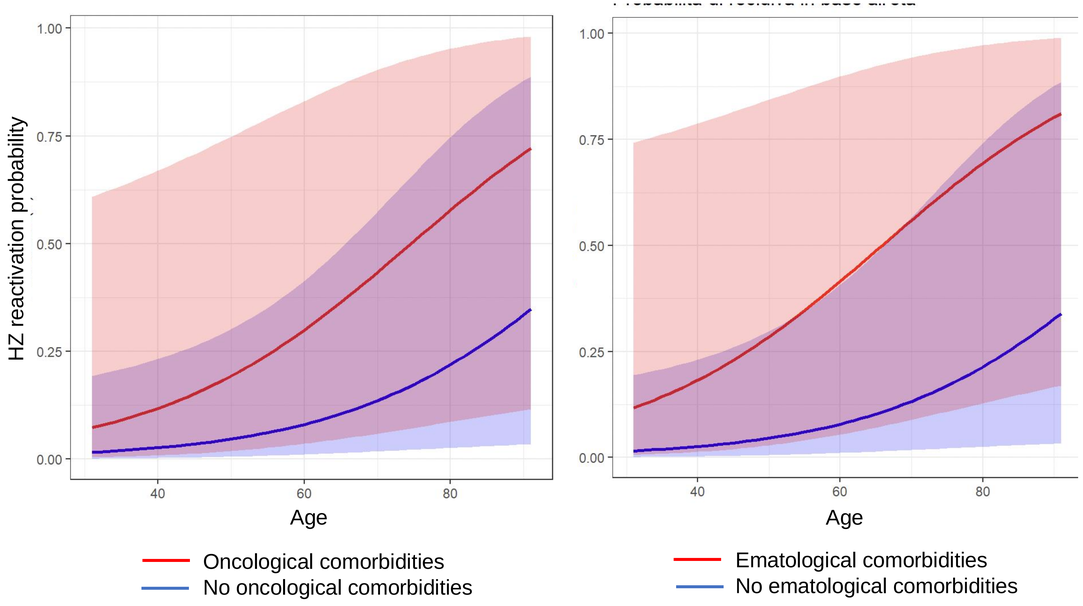
We performed a descriptive analysis and univariate logistic regressions to investigate associated risk factors.

## RESULTS (1)

We included 223 subjects (population characteristics are described in Table 1).We estimated the prevalence of events in a subgroup of 145 subjects with complete data.

| | No HZ pre-vaccination, (N = 145) | HZ pre-vaccination, (N = 78) | p-value |
|---|---|---|---|
| MALE SEX AT BIRTH | 112 (78%) | 57 (73%) | 0.7 |
| AGE - Mean (SD) | 54 (11) | 59 (10) | 0.004 |
| HIV INFECTION DURATION | | | 0.2 |
| <10 YEARS | 38 (26%) | 18 (23%) | |
| >20 YEARS | 54 (37%) | 39 (50%) | |
| 10 - 20 YEARS | 53 (37%) | 21 (27%) | |
| CD4+ CELL COUNT | 821 (341) | 791 (362) | 0.5 |
| NADIR CD4+ CELL COUNT | 262 (177) | 197 (156) | 0.006 |
| CD4+/CD8+ RATIO | 0.97 (0.58) | 0.97 (0.52) | >0.9 |
| HIV RNA <=50 cp/ml | 141 (98%) | 75 (96%) | 0.4 |

**Low HZ reactivation and NO of postherpetic neuralgia after HZ vaccination. Age and comorbidities but no HIV-related factors correlate with post-vaccine HZ reactivation**




## RESULTS (2)

- We recorded 54 subjects with pre-vaccination HZ (prevalence 37.24% [CI95%: 29.36% - 45.65%]) and 13 with post-vaccination HZ (prevalence 8.97% [CI95%: 4.86% - 14.84%]).
- The prevalence of pre-vaccination postherpetic neuralgia was 19.23% [CI95%: 11.18% - 29.73%], with mean NRS 6.33 [CI95%: 4.9 - 7.76]; no case of postherpetic neuralgia was recorded after vaccination.
- Evaluating risk factors related to post-vaccination HZ, we didn't find any association with current levels of HIV-RNA, CD4+ cell count, and CD4+/CD8+ ratio, duration of HIV infection, nadir of CD4+ cell count, previous AIDS-defining events or concomitant medications (such as immunomodulatory drugs, steroids or chemotherapy).
- We found a correlation between HZ and age (OR 1.06, CI95% 1.01-1.13, p-value 0.031), hematological (OR 9.60, CI95% 1.70-49.9, p-value 0.007), oncological (OR 5.36, CI95% 1.04-22.8, p-value 0.028) and hepatic comorbidities (OR 3.67, CI95% 1.10-12.0, p-value 0.030).

## CONCLUSIONS

Overall, this is the first real-world study that highlights **the excellent clinical response to HZ vaccination, with a low prevalence of HZ reactivation and complete resolution of postherpetic neuralgia after the vaccination**. Moreover, we identified clinical conditions promoting the recurrence HZ after vaccination.

