Optimising predictors of response in HIV-infected patient's receiving Varivax vaccine

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Background:

People living with HIV (PLWHIV) are at increased risk of infection and suffer greater morbidity from vaccine preventable diseases. These infections include varicella zoster (VZV) which can cause severe cutaneous rashes and life threatening pneumonia, hepatitis and meningitis amongst PLWHIV.
Last year we presented data at IDSI ASM demonstrating the effectiveness of the VZV vaccination programme for PLWHIV.
As part of this review, we identified a subset of patients who failed to mount a serological response to VZV vaccination.
We hypothesised that this subgroup may not have been virally suppressed and/or had evidence of poor immunological status (low CD4) at time of vaccination.
International best practice dictates that patients should have a CD4 count >200 cells/ml3 at time of vaccination and should optimally be virally suppressed at time of vaccination.
These factors are particularly important for VZV vaccination given use of a live vaccine.
We reviewed all patients who received varivax vaccine between 2008 and 2021 by CD4 count and viral load at time of vaccination.

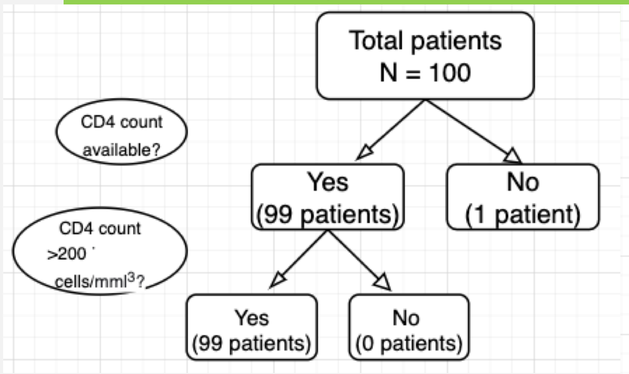
Methods:

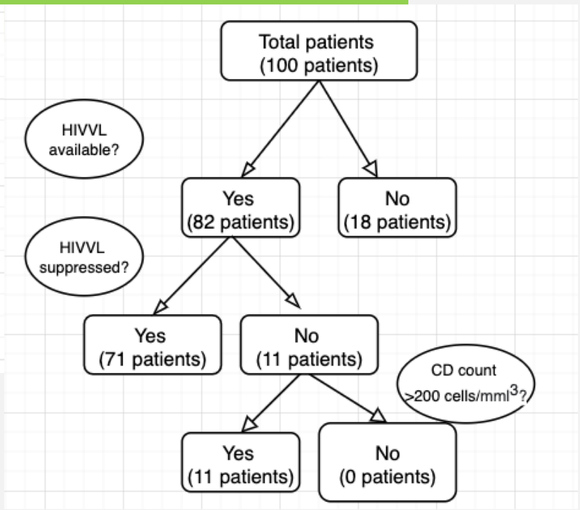
We examined the records of all patients vaccinated against VZV (Varivax vaccine) 2008-2021. 100 patients met this criteria.
We cross referenced the date of vaccination with our laboratory system and the National Virus Reference Laboratory (NVRL) records to identify CD4 count and viral load results at time of vaccination.

For the purposes of this analysis we considered CD4 counts and HIVVL within 6 months of VZV vaccination.
If a CD4 count was not available (1% of cohort) within 6 months we considered the most recent CD4 count if the patient was virally suppressed.

Results: (see flow diagram below)

- We recruited 100 patients
- 99% of patients had a CD4 count available at time of vaccination
- 100% of this cohort had a CD4 count >200 cells/mml^3 at time of vaccine
- 82% of our patients had a HIVVL available at time of vaccination
- 87% of this cohort were virally suppressed at time of vaccination. In the remaining 13% all patients had a CD4 count >200





Discussion:

Data presented at last year's IDSI ASM identified a subgroup of the HIV cohort who did not mount a serological response to the VZV vaccine. We aimed to assess the immunological and virological predictors of vaccine responsiveness in this group. This is of particular importance in the context of administration of a live vaccine.
The results of this audit show that 99% of patients had a CD4 count >200 cells/mml3 at time of vaccination, in keeping with international best practice. 87% were virally suppressed and all the remaining viraemic patients had a CD4>200
Of note for some PLWHIV the serological response following vaccination may fall below the laboratory-defined cut-off, leading to a false-negative result. Unfortunately, we were unable to obtain the patient's specific titre levels given the retrospective nature of this review..