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Timing of anti-HBs antibodies decay in vaccinated PLWH/A: a long-lasting response

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BACKGROUND

- It is widely recommended to immunize people living with HIV/AIDS (PLWH/A) against hepatitis B virus.
- A regular monitoring of anti-HBs antibody titers is generally performed to assess the need for vaccine boost, but the timing of the decay of these antibodies is poorly known.
- We analyzed the waning over time of anti HBV seroprotection in PLWH/A in our center.

METHODS

- We included all PLWH/A with at least 2 measurements of anti-HBs antibodies between the years 2001 and 2018 at our center; subjects positive for anti-HBc antibody or HBs antigen were excluded.
- We analyzed the variation for each pair of successive measurements, excluding the pairs where the first measure was under 10 mUI/ml, or if an HBV vaccination was realized between the wo dates, or if the rise between 2 dates was over 100 mUI/ml (as this may reflect an uncharted vaccination).
- We analyzed **887 couples of successive titration in 372 patients**; the delay between the 2 measurements was <10 months for 23.9%, 10-14 months for 43.6% between 15-27 months for 18.3%, and >27 months for 14.2%.

RESULTS

- The mean and the median decrease of the anti-HBs titer were 2.6±10 mUI/ml per month and 0.29 [interquartiles 25-75: -0.02; 1.9] mUI/mL per month, respectively.
- This decay represents 0.7±3% (mean) or 0.6% (median) [interquartiles 25-75: 0.1; 1.8] per month of the initial titer.
- There was no statically significant association between the slope of antibody decay and the nadir of CD4 T cells, the age at the first antibody titer, gender, or CMV serostatus.
- The absolute value of monthly decay was positively correlated with the initial antibody titer (rho=0.198, p<0.,0001), but not the relative value.
- In a Kaplan-Meier analysis of the 130 patients with anti-HBs titer above 100 mUI/mL (median of follow-up: 43 months), the median time of a titer under 100 mUI/mL was 102 months; in particular, it was 56 months for those with an initial anti-HBs antibody titer between 100 and 500 mUI/mL, and was not reached for those over 500.

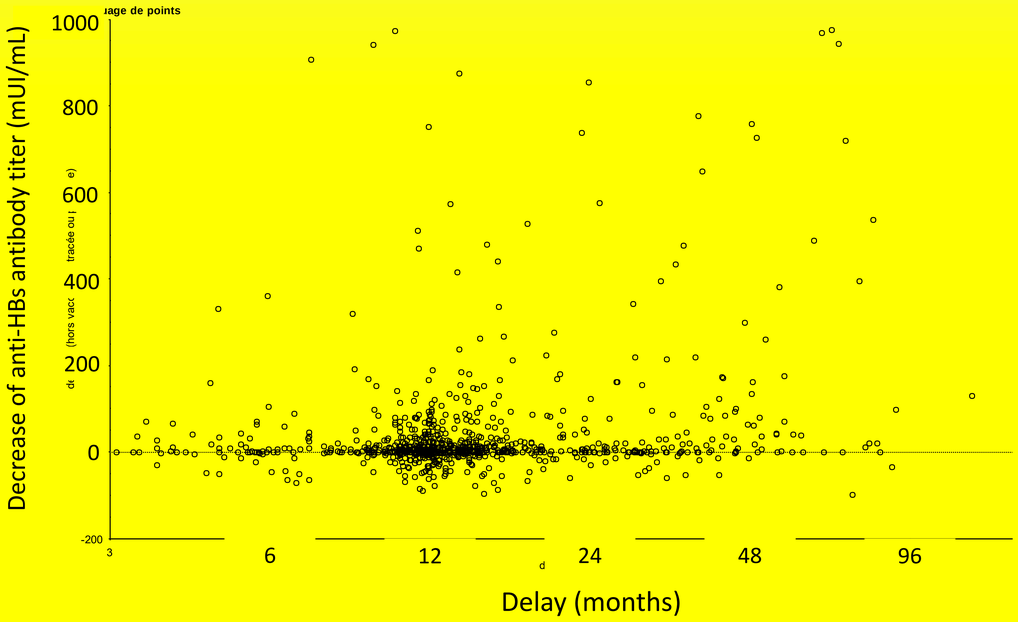


Figure 1 : decrease of anti-HBs antibody titers according to the delay between 2 measurments

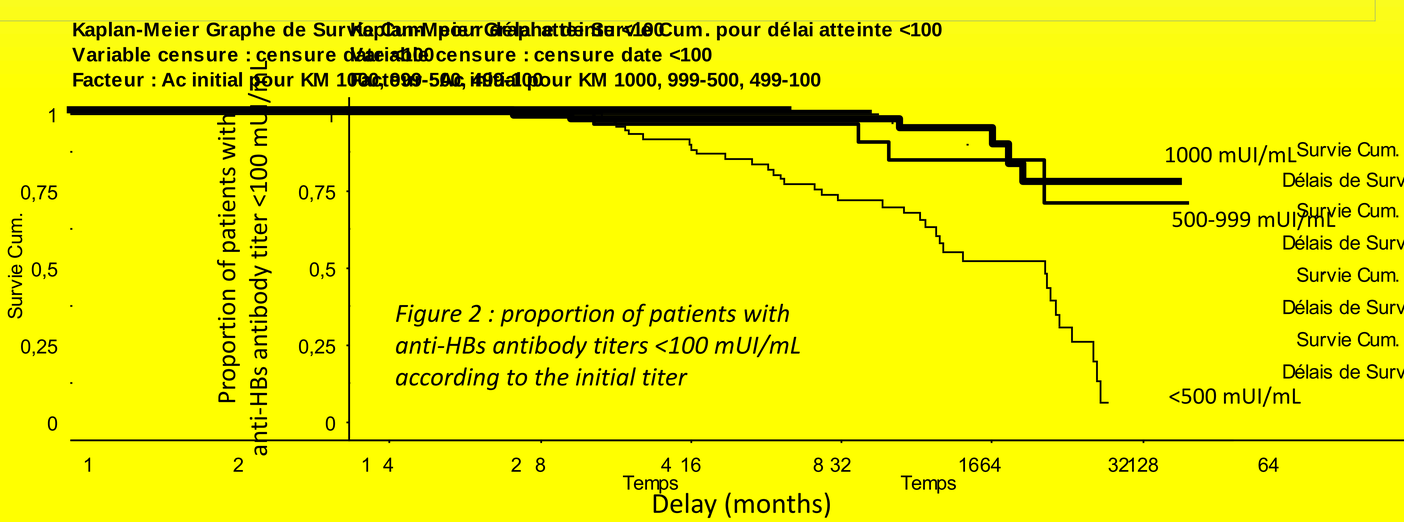


Figure 2 : proportion of patients with anti-HBs antibody titers <100 mUI/mL according to the initial titer

CONCLUSIONS

The rate of decrease of the anti-HBs antibody titer in PLWH/A suggests that measurements do not need to be performed more than every 3 to 4 years, and even longer periods for those over 500 mUI/ml.