

Unravelling the pathogenesis and outcome of serofast status in people living with HIV

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BACKGROUND

The cause and significance of the serofast state is not well established and controversial, especially in people living with HIV (PLH). Therefore, there is still no a clear and unified definition of a syphilis serofast state, leading to confuse results about outcome and therapy. We conducted a study to evaluate possible predictors and outcome of serofast state.

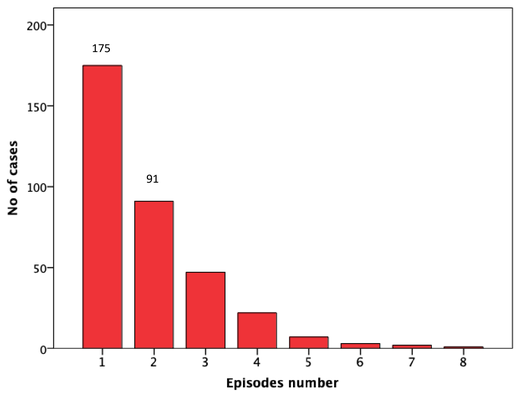
METHODS

Prospective cohort study of 348 episodes of syphilis in 175 PLH. Serofast status was defined as persistence of positive non-treponemal RPR titer after serological response to therapy (at least a 4-fold decline in the titer of RPR 12 months after treatment). Demographic and HIV-related data, RPR titer at diagnosis, time of response and outcome of serofast-diagnosed PLH were analyzed.

N=175

Mean age (years, range)	47 (19-79)
Sex male at birth	173 (99)
Risk practice for HIV infection Former IVDU MSM	 3 (2%) 166 (95%)
Nadir CD4+ count (cells/mcL)	303 (193-420)
Nadir CD4/CD8 ratio	0.42 (0.23-0.6)
Time of HIV infection (months)	101 (10-169)
cART at syphilis diagnosis	173 (99%)
Time on current cART (months)	9.2 (2-11)
CD4+ count previous to 1st syphilis episode (cells/mcL)	641 (475-887)
HIV RNA level <50 cop/ml previous	167 (97)
Previous CD4/CD8 ratio	0.72 (0.47-1.02)

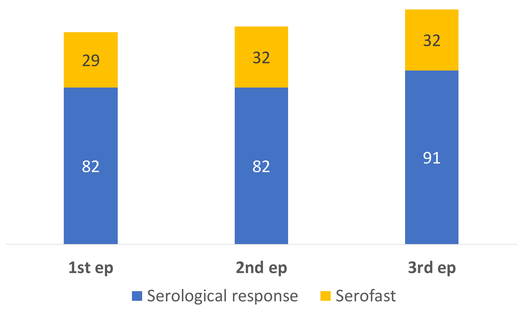
At the first episode of syphilis, median age was 47 years, 99 were males and 95% had MSM as risk practice. Median time of HIV infection was 101 months and nadir CD4+ count of 303 cells/mcL. At diagnosis, late latent or unknown duration stage was observed in 51%, and median RPR titer was 1/32.

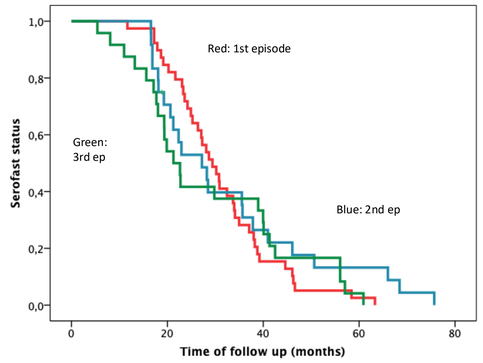


Serofast status is consequence of the interplay of the serological presentation and of immunological factors, and its rate decrease progressively. There is no need of additional studies and interventions in this population.

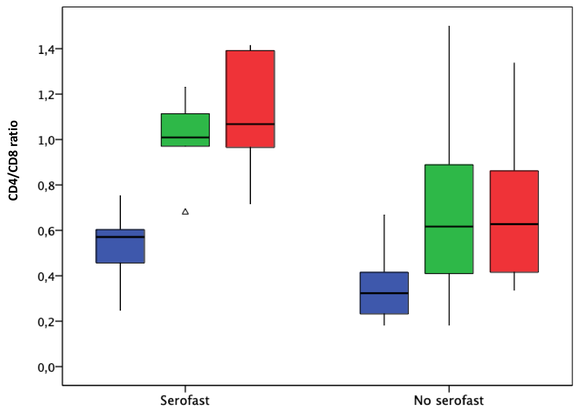
RESULTS

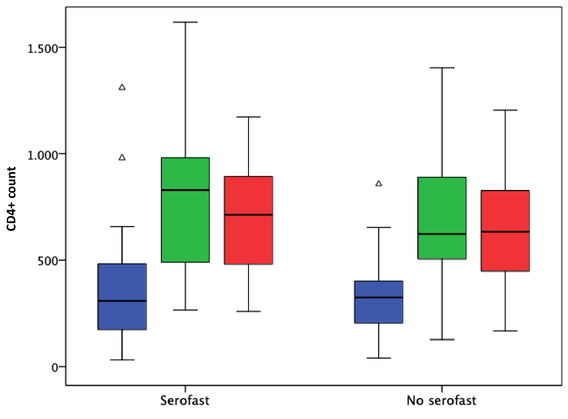
The rate of serofast status was decreasing during follow up and there was a similar rate and time of persistence of positive RPR in successive episodes.



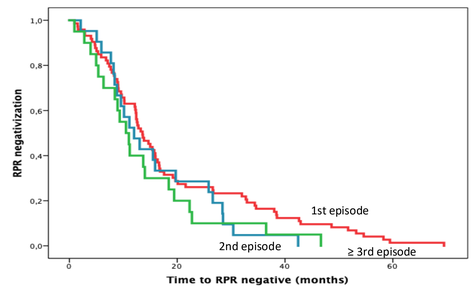


As it could be expected, serofast status was related with higher RPR status, and of note with a higher CD4/CD8 ratio at diagnosis.



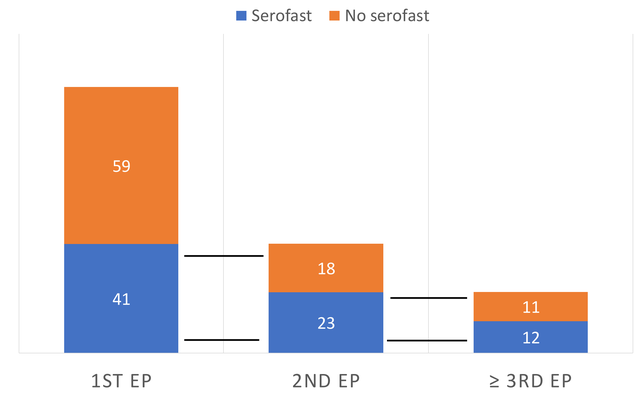


Time to indetectable and resolution of serofast state was slightly shorter in subsequent syphilis episodes.



In a Cox multivariate analysis, a longer time of serological response at the first determination (Hazard ratio, HR, 1.12; p=0.034), a higher nadir CD4/CD8 ratio (HR 4.86; p=0.044), and a higher CD4/CD8 ratio at the time of diagnosis (HR 4.16; p=0.04) were associated with serofast status.

Serofast status was not associated with a higher rate of reinfection or emergence of symptoms during follow up. Median value of RPR was 1/2 (1-1/8) at the last analytical determination regardless of the episode number.



Evolution of PLH with serofast state during follow up and new episodes of syphilis

CONCLUSIONS

This prospective study clarifies the factors associated with serofast status after a syphilis diagnosis. Importantly, serofast status was related to the intersection of serological presentation and immunological factors, with a trend to decrease progressively. Thus, this study support that additional studies and interventions in this population are not necessary.

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