LETTER TO THE EDITOR

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Post-Treatment HIV Control in a Married Couple

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DEAR EDITOR,

We report a unique case of post-treatment HIV control in a married couple from Türkiye, contributing to the growing evidence on the heterogeneity of post-treatment controllers.

In 2018, a 36-year-old woman and her 28-year-old male partner were concurrently diagnosed with human immunodeficiency virus (HIV). The couple married in 2012, with negative HIV serology documented during premarital screening and at the time of the woman's first delivery. Both were asymptomatic at diagnosis, with no documented acute retroviral syndrome; therefore, the duration of infection prior to diagnosis could not be determined. The couple tested negative for hepatitis B, C, and syphilis.

The woman had a baseline $CD4^+$ T-cell count of 1277 cells/μL and a viral load of 4263 copies/mL, whereas the man had a lower $CD4^+$ T-cell count (272 cells/μL) and a higher viral load (49,861 copies/mL). Antiretroviral therapy (ART) was initiated promptly: dolutegravir/abacavir/lamivudine for the woman and elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide for the man. Both achieved undetectable plasma HIV-RNA levels within four months. After 12 months of sustained viral suppression and $CD4^+$ T-cell recovery above 500 cells/μL, they voluntarily discontinued ART, as their HIV-RNA levels remained persistently undetectable. Their decision was also influenced by information obtained from internet sources. Over the following five years without treatment, both remained clinically well, with undetectable viral loads and preserved $CD4^+$ T-cell counts.

In the sixth year, the man experienced viral rebound (HIV-RNA: 8127 copies/mL; $CD4^+$ T-cell: 802 cells/μL), whereas the female partner continued to demonstrate durable viral suppression ($CD4^+$ T-cell: 976 cells/μL). During this period, the man also tested newly positive for syphilis, raising the possibility that immune activation or HIV superinfec-

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Table 1. Longitudinal yearly HIV follow-up results of the male and female patients between 2018 and 2025.

Year	Male HIV-RNA (IU/mL)	Male $CD4^+$ (cells/μL)	Male $CD4^+$ (%)	Male $CD8^+$ (cells/μL)	Male $CD4^+/CD8^+$ (cells/μL)	Female HIV-RNA (IU/mL)	Female $CD4^+$ (cells/μL)	Female $CD4^+$ (%)	Female $CD8^+$ (cells/μL)	Female $CD4^+/CD8^+$
1	49,861	272	21.9	859	0.32	4263	1277	54.2	986	1.29
2	19	541	33.1	962	0.56	Negative	1491	56.6	999	1.49
3	Negative	643	35.5	1005	0.64	Negative	1480	59.2	860	1.72
4	117	636	36.1	968	0.66	Negative	1202	60.76	664	1.81
5	Negative	1399	63.6	657	2.13	Negative	1468	63.9	761	1.93
6	Negative	849	47.2	799	1.06	Negative	1682	64.76	790	2.12
7	8127	802	28.33	1863	0.43	Negative	976	53.21	792	1.23

tion may have contributed to the viral rebound. Resistance testing revealed intermediate resistance to protease inhibitors, while susceptibility to all other drug classes was preserved. Detailed results were shown in Table 1.

This case underscores key features of post-treatment controllers, including variability in long-term outcomes among closely linked individuals, the potential role of baseline immunological and virological parameters, and the possible impact of intercurrent infections or behavioral factors on post-treatment remission.

Human immunodeficiency virus infection remains a major global health challenge despite substantial advances in ART. Antiretroviral therapy has transformed HIV into a manageable chronic condition for most individuals, enabling durable viral suppression and immune reconstitution. However, treatment interruption remains complex and controversial due to risks of viral rebound, immune deterioration, and disease progression (1). A rare subset of individuals, including *elite controllers* and *post-treatment controllers*, can maintain undetectable viral loads without ART (2). These individuals provide critical insights into mechanisms of long-term HIV remission and the potential for achieving a functional cure. Post-treatment control, observed in only a small minority of patients, refers to sustained viral suppression following ART discontinuation (2). It has been associated with several factors, including favorable host genetic characteristics, robust HIV-specific immune responses, and a limited size of the viral reservoir (3).

In this couple, the woman's durable viral suppression may reflect stronger immune-mediated control of HIV, whereas the man's virologic rebound may be related to differences in reservoir size, immune competence, or viral factors. His lower baseline $CD4^+$ T-cell count, and higher initial viral load likely contributed to an increased risk of rebound, a pattern consistent with previous reports (4,5).

Another plausible explanation for the man's viral rebound is superinfection with a distinct HIV variant. His newly positive syphilis serology suggests recent high-risk sexual behavior, potentially increasing exposure to a new HIV strain. Human immunodeficiency virus superinfection may be associated with enhanced viral replication and could undermine existing immune control mechanisms. This possibility underscores the dynamic nature of HIV reservoirs and immune responses in post-treatment controllers and emphasizes the importance of continuous behavioral risk assessment and close clinical monitoring in this population.

The potential influence of coinfections—whether a new HIV variant or syphilis—further underscores the need for individualized care strategies and reflects existing gaps in understanding the determinants of post-treatment HIV control. The absence of validated biomarkers that can reliably predict who will maintain remission after stopping ART remains a major obstacle to identifying suitable

candidates for analytical treatment interruption or related therapeutic interventions.

While mechanisms underlying post-treatment control are not fully understood, factors such as reservoir size, immune response quality, and viral fitness are likely to play key roles (3,4). The divergent outcomes in this couple, despite simultaneous diagnosis and adherence to ART, highlight the complexity of HIV pathogenesis and the need for individualized follow-up for patients who discontinue therapy.

To our knowledge, this represents the first documented report from Türkiye of long-term post-treatment HIV control in a couple, underscoring the importance of continued research into predictors of durable remission.

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REFERENCES

1 Li JZ, Melberg M, Kittilson A, Abdel-Mohsen M, Li Y, Aga E, et al; AIDS Clinical Trials Group A5345 Study Team. Predictors of HIV rebound differ by timing of antiretroviral therapy initiation. JCI Insight. 2024;9(3):e173864. [CrossRef]

2 Mastrangelo A, Banga R, Perreau M. Elite and posttreatment controllers, two facets of HIV control. Curr Opin HIV AIDS. 2022;17(5):325-32. [CrossRef]

3 Deeks SG, Lewin SR, Havlir DV. The end of AIDS: HIV infection as a chronic disease. Lancet. 2013;382(9903):1525-33. [CrossRef]

4 Sáez-Cirión A, Bacchus C, Hocqueloux L, Avettand-Fenoel V, Girault I, Lecuroux C, et al; ANRS VISCONTI Study Group. Post-treatment HIV-1 controllers with a long-term virological remission after the interruption of early initiated antiretroviral therapy ANRS VISCONTI Study. PLoS Pathog. 2013;9(3):e1003211. [CrossRef]

5 Gunst JD, Gohil J, Li JZ, Bosch RJ, White Catherine Seamon A, Chun TW, et al. Time to HIV viral rebound and frequency of post-treatment control after analytical interruption of antiretroviral therapy: an individual data-based meta-analysis of 24 prospective studies. Nat Commun. 2025;16(1):906. [CrossRef]