

CLINICAL VIGNETTE

Effects of Alcohol on Immune Reconstitution in a Man with HIV/AIDS

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Case Presentation

A 30-year-old male, presented with 3 months of chronic diarrhea and 25-pound weight loss. HIV/AIDS was initially diagnosed 2 years prior and he was finally coming to terms with it. HIV risk factors include MSM. His diarrhea occurred 3-5 times per day, improves slightly with loperamide. He has history of treated syphilis and anal warts. He reported daily alcohol with 1-2 drinks per day after work.

On exam, he was a well-dressed thin man weighing 55 kg, who was afebrile, with a resting pulse of 101 per minute without any other significant findings.

Initial labs confirmed his HIV infection, CD4 T-cell count of 65/cmm (5%), a HIV RNA PCR "viral load" of 377,000 copies per milliliter. Stools studies were negative as were screening tests for opportunistic and sexually transmitted diseases.

He was initiated on anti-retroviral therapy efavirenz/emtricitabine/tenofovir disoproxil and *Pneumocystis carinii pneumonia* (PCP)/toxoplasmosis prophylaxis with sulfamethoxazole/trimethoprim. Within two months, his HIV viral load was undetectable, and remains so to date. He regained weight to 69 kilograms with BMI increasing from 16.4 to 20.5.

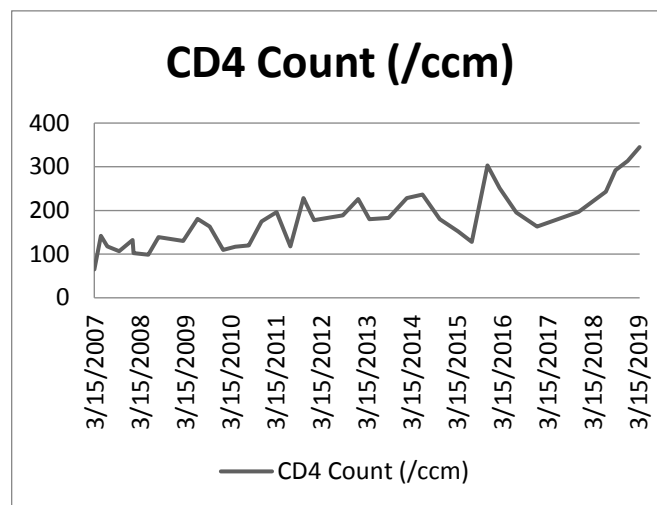
Over the next decade, the patient had good adherence to his medications and his follow-up appointments. He also maintained his full time management job. Despite all these measures of success, his T-cell recovery was significantly muted, ranging in the 100-200/cmm in the AIDS range. After a few years, he was considered for an AIDS Clinical Trial Group drug intensification study for those with poor immune reconstitution, though he eventually declined to participate.

On a routine follow up visit, the patient was identified with alcoholism, drinking up to 10 drinks per day. For the next 5 years, he struggled with becoming sober and finally achieved sobriety in 2018.

Interestingly, his T-cell cell recovery began to respond during his periods of sobriety. Most recent count was 345 and 21% (normal values are 441-2156 and 28-63%).

Discussion

Alcohol has many well-known effects on the body and mind. However, its effect on HIV and the immune system is



not well studied. This case illustrates the potential direct effects of heavy alcohol use on the markers of immune health.¹⁻⁵

There are a number of studies that have looked at the effects of alcohol on medication adherence leading to poor viral suppression.⁶ However, this patient seems to have had good adherence demonstrated by his undetectable viral loads.

Further, his anti-retroviral therapy, efavirenz/emtricitabine/tenofovir disoproxil, is not known to be "forgiving" to lapses in adherence and frequently the HIV virus easily develops resistance to this combination due to different half-lives of the component medications.

This case also highlights the need to identify alcohol and other drug use that impacts on patient well-being. Though patients often are not ready nor willing to discuss these topics, having an open, non-judgmental relationship can help open the door for patients to discuss sensitive topics. Further, supporting the individual and linking them to effective resources is also a significant step in improving health outcomes.

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Submitted May 3, 2019