

Small trial targeting Epstein-Barr infections shows promise as multiple sclerosis treatment

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Demyelination by MS. The CD68 colored tissue shows several macrophages in the area of the lesion. Original scale 1:100. Credit: [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0/) Marvin 101/Wikipedia

A team of researchers at *Atara Biotherapeutics* has conducted a small Phase I clinical trial of a therapeutic called ATA188 that targets Epstein-Barr infections (EBV) as a treatment for multiple sclerosis (MS).

Representatives from Atara Biotherapeutics presented their findings at an EBV and MS Day event. A press release from late last year described the results of their clinical trial.

MS is a disease of the central nervous system in which the [immune system](#) attacks the sheath that covers and protects [nerve cells](#). And EBV is a virus also known as human herpesvirus 4; it is one of the most common viral infections in humans. Some scientists have estimated that approximately 95% of people alive today have been infected by the virus at some point. In addition to being the root cause of mononucleosis, it is believed to play a role in several [autoimmune diseases](#) such as [chronic fatigue syndrome](#), encephalomyelitis and possibly MS. Prior research has shown that the virus enters a dormant state after attack by the immune system, only to reemerge later, causing difficult-to-isolate problems.

Prior work has shown that the immune system might become confused when attacking EBV attached to nerve cells, down the myelin sheath breakage. If that is the case, they reasoned, then killing the virus should stop efforts by the immune system. To that end, they developed ATA188, a therapy using donor [white blood cells](#) to hunt down and kill cells hosting the virus by targeting antigens on their surfaces.

The trial involved 24 volunteers, each of whom had the progressive form of MS. Twenty of them saw improvements or stability of symptoms. The researchers also found that none of the volunteers experienced any [adverse side effects](#). Brain scans of the volunteers indicated signs of damage reversal, where remyelination was occurring.

The researchers acknowledge that their results are extremely preliminary—the volunteer group was small and there was no control group. But they contend that their results are significant nonetheless and plan to conduct a Phase II trial in the near future.

More information: ATA188: A Bold Vision to Transform Treatment of Multiple Sclerosis. d1io3yog0oux5.cloudfront.net/...resentation+March+22%2C+2022_vFinal3.pdf

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