



TWO WAYS THE EPSTEIN-BARR VIRUS (EBV)
CAUSES INFLAMMATION, ADHESIONS, AND CHRONIC PAIN IN AA

When EBV reactivates it produces 2 mechanisms that may cause inflammation, tissue destruction, adhesions and chronic pain in persons with AA:

1. Colonization
2. Autoimmunity

The Pathologic Process: When EBV reactivates it leaves its natural habitat, the lymphocytes, enters the blood, and travels to the arachnoid membrane and cauda equina nerve roots among other tissues. Once there the virus locks onto cells, enters them, and begins to duplicate and form a colony of viruses which forms inflammation, adhesions, tissue destruction, neurologic impairments, and chronic pain. Also, when EBV leaves the lymphocytes, it may form autoantibodies and other cellular elements that have the autoimmune capability of attacking normal cells producing inflammation, tissue destruction, adhesions, chronic pain and neurologic impairments.

Problem: Both of these pathologic mechanisms must be treated and suppressed. Blood testing provides guidance in selecting treatment as current reactivation and autoimmunity requires different measures. Autoimmunity is presumed to be active if nuclear antigen antibodies (EBNA) are over two times normal.

Inflammation Must Be Treated Long Term: Signs of chronic inflammation can be seen on MRIs. They include nerve root clumping, attachment to the arachnoid, thickened and distorted tissues.

***Treatment of EBV Autoimmunity and Inflammation:** We recommend a multi-medicinal approach in our standard 3-component protocol that includes: anti-inflammatory diet and multiple anti-inflammatory medicinals.

***Special Agents for Current EBV Reactivation:** A patient has current EBV reactivation if positive EARLY nuclear antigen antibody (Early-EBNA) or polymer chain reaction DNA (PCR-DNA) tests are elevated. Treatment includes high dose lysine, cistus incanus and a 10-day trial of ivermectin.

Summary: While EBV is not the initiating cause of AA (i.e., trauma, medical procedure, chemical), it may generate and propagate inflammation. All persons with AA need to be tested for EBV reactivation and autoimmunity.

Reference: Nagata, et al. Epstein-Barr virus reactivation induced immunoglobulin production: significance on autoimmunity. *Microorganisms* 2020;8:1875-1889.

*Detailed protocols are on our website.