Crossing the Bridge Where East Meets West: An Ayurvedic and Allopathic Perspective on the Management of HIV and HIV-Related Inflammation

Dr. Antonio (Vishnu) A. Aragona AD

This is the first of a two-part series. Part I describes HIV and treatment from the western biomedical perspective and includes an overview of the Ayurvedic perspective. Part II will be published in the Summer 2018 issue of AJH *and will focus on the Ayurvedic approach and management of HIV.*

Abstract

When it comes to the successful treatment of HIV and inflammation there is no one size fits all approach. Nor is it the case that any one medical system alone can lead to the resolution to such a complex condition. Both the Allopathic Medical model and Ayurvedic Medical model can work together with each other in supporting an East meets West approach to management. HIV has been around for quite some time and both allopathic medicine and Ayurveda have an understanding of how individuals affected by such a disease can find harmony within themselves and within the balance of ancient medicine and conventional medicine.

Inflammation seems to be a common condition associated with HIV and from there this situation can affect the overall health on various levels. Allopathy (Conventional/Western medicine) can provide support by continuing its scientific studies to "find a cure" while providing medications that help to suppress the virus and manage inflammation, and Ayurveda can provide support by sharing its wisdom of a deeper understanding of inflammation and the effects of such an intense virus, through a body-mind-spirit approach. It is the intention of this article to combine both Ayurveda and Allopathy in an effort to fully achieve an even more optimal outcome for individuals affected by HIV. What may that outcome be? Possibly the complete resolution or a more balanced way of living with this condition.

Introduction

It is unlikely that in 2018 there is anyone who isn't familiar with HIV. It has had a devastating effect worldwide since the beginning of 1980s when mortality was very high and the disease spread like wildfire in major cities and certain parts of the world. We have come very far from the '80s in our efforts to reduce HIV in the world.

What is HIV? HIV stands for "Human Immunodeficiency Virus." This is the virus that can lead to AIDS (Acquired Immunodeficiency Syndrome) when it is untreated. Once the disease has spread to this stage, mortality increases and the individual can have a shortened lifespan. With the intervention of medications, HIV can be managed and AIDS prevented. The CDC (Centers for Disease Control) is a federal agency that supports health promotion, prevention, and education when it comes to public health.

According to the CDC, there is no known effective cure for the HIV, but it can be controlled.[1] CDC officially announces that HIV Undetectable individuals have zero capacity for transmission of HIV in individuals without a condom.[2]

Western Pathology

Bio-physiology of HIV: How does HIV work?

According to the CDC, AVERT, and the overall medical community, HIV is a virus that is spread through bodily fluids such as blood and semen that attacks a cell called the T-Helper Cell (CD4.) Over time, the virus affects the immune system in ways that make it harder for the body to fight off infections, as well as diseases such as cancers and many others.[3, 4] The HIV virus cannot multiply on its own. The virus must enter into its immune host cell and forces the cell to replicate strands of itself, then sends itself out to other cells to continue this cycle of replication and the destruction of immunity. The process of the destruction of the T-helper cell multiplication of virus is called the HIV Life Cycle. AVERT has delineated clearly the stages of infection.[5]

- Stage One: First, the virus attaches to a T-helper cell and inserts itself.
- Stage Two: Once the virus has entered into the cell it enters into the nucleus, changes the genetic material at this level, and forces control over the nucleus.
- Stage Three: The virus has taken control and then it causes the cell to replicate itself.
- Stage Four: New HIV particles are released into the body to find other cells and continue this replication process, until the whole body is infected.

What does the actual manifestation of HIV infection look like outwardly? That generally depends on the individual and their level of immunity prior to infection. Some individuals may develop beginning stage symptoms immediately or they might not have any symptoms for quite some time. Meanwhile there can be a slow and steady decline of immune function that eventually causes significant alarm and causes an individual to get tested. We will discuss testing below in the next section under Western Management.

The CDC outlines the general symptomatic stages of infection as follows:[6]

Stage One: ACUTE HIV INFECTION. Within 2–4 weeks of viral exposure, a person may experience flu-like symptoms, which may last a few weeks.

Stage Two: CLINICAL LATENCY (HIV Inactivity or Dormancy.) It is during this phase that there may not be any presenting symptoms. This stage can last up to several years. With the help of (ART) medications an individual can remain mainly uninfectious. Whether symptoms develop or remain latent during this stage depends on the level of the individual's immune response. This stage applies even when the virus is present and dormant, or what is known as "virally suppressed" due to ART/HIV medications. If unmanaged, the virus will increase as the CD4 response decreases. Immunity is compromised and a whole domino effect of health issues can ensue.

Stage Three: ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS). It is at this stage that the immune system has broken down and an individual develops varying symptoms ranging from swollen lymph nodes, weakness, weight loss, and other symptoms. CD4 cells are measured and when CD4 reaches below 200cells/mm, this number and the individual has two or more opportunistic infections, this is defined as AIDS. People at this level are very contagious and the average life span from this point tends to be up to three years of the AIDS diagnosis.

Western Management

Prevention

Here are some key points in management that must be known by any practitioner:

1. When the HIV virus was first identified in the 1980s, the primary means of prevention was the usage of condoms or simply abstinence.
2. In the 1990s, PEP was introduced. PEP stands for "Post Exposure Prophylactic," which is a medication regimen administered to any individual who may have been exposed to the virus and takes PEP within the first 72 hours. This medication can be obtained through a primary physician or the emergency room. PEP prevents the virus from infiltrating the cells of the body.[7]

3. In 2012, PrEP (Pre-Exposure Prophylactic) was introduced into the public after scientific evidence indicated that PrEP can be used to prevent the exposure to HIV. The CDC supports the usage of this medication in the efforts of reducing HIV infections by more than 90%.[8] Individuals are recommended to take a pill called Truvada once a day.
4. In 2017, what has finally become universally recognized scientifically is that engaging sexually with an individual who is HIV positive and is Undetectable, is another concrete means to preventing the perpetuation of HIV. The CDC released a statement on its HIV page stating "The goals of HIV treatment are to improve health and prevent transmission of HIV. The best marker of successful treatment is reducing the amount of HIV in the blood and elsewhere in the body to very low levels. This is called viral suppression. Three different studies of the prevention effectiveness of viral suppression to reduce the risk for sexual HIV transmission have shown similar results: across thousands of couples and many thousand acts of sex without a condom or PrEP, no HIV transmissions were observed when the HIV-positive person was virally suppressed. This means that getting and staying virally suppressed is not only the best thing people living with HIV can do to maintain their health, but also one of the best ways to prevent new infections through sex. CDC is working with other federal agencies to ensure that we consistently and accurately describe the prevention effectiveness of HIV treatment and viral suppression for sexual transmission of HIV. We will update our messages accordingly."[9] A study of serodiscordant couples (couples where one partner is HIV positive and the other is HIV negative) has also shown that HIV cannot be transmitted as long as the HIV-positive individual remains under ART.[10]

Medications

While it is suggested that individuals with HIV pursue a healthier lifestyle with diet, exercise, and relaxation, medical intervention via pharmaceuticals is the primary means of treatment for HIV. It is understood within the medical community that medications are the key aspect to maintaining health and prolonging the life of someone living with HIV. Once an individual begins a medication regimen they are encouraged to remain compliant and follow up with their physician as necessary. Coming off the medications is discouraged for the entire lifespan of the individual. According to the CDC and National Institute of Health, the earlier someone tests HIV positive and begins adherence to medication, the better the long-term outcome for health.[11] This is the next step, after testing, that is a crucial component to the prevention and management of HIV. Medication adherence/compliance increases an individual's capacity to become HIV Undetectable. As stated above, it is known that Undetectable = Untransmittable.[12, 13, 14, 15, 16]

HIV and Inflammation

The term inflammation is a generic term that indicates some process/progression and activation of the immune system. Dr. Axe states that "modern medicine focuses on treating symptoms, not addressing the root cause of an issue. Arthritis is inflammation in the joints. Heart disease is inflammation of the arteries. Instead of taking a medication to reduce joint pain or lower cholesterol, we would be better served by reducing inflammation in the body."[17] Inflammation has been linked to many conditions such as cancer, heart disease, liver failure, dementia, and autoimmune disease. This understanding of inflammation can be applied to the process around the HIV virus.

What is inflammation? First, it is safe to say that inflammation isn't always a bad thing. Known as Pyroptosis, it is the body's natural response to damaged cells that have been afflicted by exogenous causes such as a virus, and other causes of infections or trauma to the body. When the body suspects that it has been exposed to some trauma or pathogen/foreign invader chemical messengers act locally, causing blood vessels to dilate so that more blood rich in oxygen and immune chemicals and cells are brought to the area. When the white blood cells, which include Helper T-cells (CD4) and Killer T-cells (CD8 cells), antibodies, clotting factors, pro-inflammatory cytokines, and many others arrive they send out their own chemical signals to invite other cells within the immune system to respond to the injury/infection.[18] The end result is healing of the tissue.

There are two different types of inflammation. One type is acute inflammation, and the other is chronic inflammation. Acute inflammation lasts only for a short time as part of the body's immediate immunological response. When the threat has been addressed, the body turns the signals off and harmony is returned. Chronic inflammation lasts for months and years as a result of failure to eliminate the cause and minor, repeated exposure to the agent.[19] Tissue damage typically occurs as a result of infection along with scarring. The body remains in a constant state of arousal and defense, and antibodies are produced that stimulate immune cells to attack healthy cells.

In HIV-positive individuals, it can be understood that Pyroptosis, which is this process of inflammation associated with the infection of the HIV virus, causes CD4 Helper T-cell depletion. Dotil et al. (2014) and Bergsbaken et al. (2009) state "Pyroptosis corresponds to an intensely inflammatory form of programmed cell death where cytoplasmic contents and pro-inflammatory cytokines including IL-1β, are released. This death pathway thus links the two signature events in HIV infection—CD4 T-cell depletion and chronic inflammation—and creates a vicious pathogenic cycle where dying CD4 T-cells release inflammatory signals that attract more cells to die."[20,21] Understanding how inflammation is associated with the HIV virus in its host can lead to insight into determining the potential towards increased longevity and health within the HIV-positive individual. Inflammation is commonly associated with the natural aging process due to deterioration and diminishing immunity, which is commonly seen in the elderly and the multiple health issues they have. When it comes to HIV, the individual infected with the virus has an acceleration of the deterioration of the immune system and increased inflammation based on the immune-response to the viral infection over time. Inflammation has been shown to be higher in HIV-positive individuals versus HIV-negative,

exhibiting increased rates of heart disease, neurocognitive diseases, liver disease, liver failure, opportunistic infections, and cancers.[22, 23]

Management of HIV-related inflammation

As previously mentioned, there are several studies that support the fact that HIV-positive individuals show not only an increase in inflammation but also an acceleration of the aging process in terms of longevity. Because of this, research is now focused on elucidating ways to reduce inflammation. According to Benjamin Ryan, "the long-term damage caused by HIV-related chronic inflammation may be easier to prevent when people are younger, as opposed to reversing the damage once people are elderly."[24]

Ayurvedic Perspective

When inflammation in Ayurveda is considered, there is the understanding that many systems can be affected because eventually all the elements (Ether/Space, Air, Fire, Water, and Earth) are affected. Health is considered to be ideal when there is balance within these five elements and when one is affected, the others will surely follow. According to Ayurveda, there are the concepts of Prakriti and Vikriti. Prakriti is defined as the baseline constitution or primary constitution that is determined by birth, environmental factors, and karma. Vikriti is the deviation from the natural state of balance that is inherently designed per the individual. This is why Ayurveda is such a unique system of medicine, because it shows that not every person can be treated the same and that optimal care is when individuals are uniquely understood for who they are, how they feel, and how they think. Everything is connected!

The ancient texts of Ayurveda, written in the Arthava Veda (one of four Ancient Vedic texts) and Charak Samhita, Sushruta, and Ashtanga Hridayam (some of the classical Ayurvedic medical texts) discuss the theoretical concepts of HIV and Inflammation extensively through its content. Although the term inflammation is newer, Ayurveda has a different perspective and understanding of inflammation. According to Dr. Sanjay Pisharodi, an Ayurvedic physician, Ayurveda has a similar understanding of inflammation compared to the modern medical concept, but Ayurveda doesn't view it the same way overall and has specified it under a different category known as Jvara or "fever."[25] Additionally, a condition such as HIV and inflammation is assessed and treated according to the concepts of Agni, Ama, and Ojas.[26] It is safe to say that Ayurvedic practitioners determine health and any necessary protocol based on the state of health of an individual according to their Agni, Ama, and Ojas.

Part II of this series will be published in the Summer 2018 issue of AJH and will discuss the role of Ayurveda in addressing HIV.

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Dr. Vishnu Aragona AD, AYT, LMT, is one of Philadelphia's leading experts in Ayurveda, with over 20 years of experience in holistic training. He has been recognized by NAMA (National Ayurveda Medical Association) as meeting the requirements as a Doctor of Ayurveda (AD) and Ayurvedic Yoga Therapist (AYT.) Vishnu has a Master's Degree in Ayurveda and a Bachelor's Degree in Psychology. Vishnu is also a licensed massage therapist, practicing various other modalities. He has been practicing for 22 years and teaching classical yoga rooted in Ayurveda for over 15 years. His Ayurveda, Yoga, and Massage center, Still Point Ayurveda, is the leading Ayurvedic Center in Philadelphia. Visit www.stillpointayurveda.com to find out more and to schedule appointments.