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Editorial

Rethinking HIV Treatment: The Promise of Flavonoids in Antiretroviral Therapy

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Dear Editor,

Human immunodeficiency virus (HIV) continues to be a significant and life-threatening issue globally, impacting the lives of millions of individuals affected by acquired immunodeficiency syndrome (AIDS) (1). Due to the rapid transmission of the disease, many people are infected with it every year (2). The treatment of AIDS is crucial because of its significant impact on both individual and public health (3). By utilizing antiretroviral therapy (ART), this treatment can lower mortality rates associated with opportunistic infections and enhance patients' quality of life. Furthermore, effective treatment reduces the viral load, thereby decreasing the likelihood of HIV transmission to others. Conversely, the pathophysiology of AIDS reveals that the HIV virus targets CD4+ immune cells, leading to their destruction and a compromised immune system, which increases susceptibility to opportunistic infections and various cancers (4, 5).

Flavonoids, a group of phytonutrients found in many fruits, vegetables, and beverages, may have potential benefits in the context of HIV due to their antioxidant, anti-inflammatory, and antiviral properties (6). These compounds can help protect immune cells from oxidative stress, reduce inflammation, and inhibit HIV replication in the laboratory (7). Certain flavonoids, such as naringenin (8), hesperidin, linarin (9), quercetin (10), baicalin (11), and catechins (12), have been studied for their ability to enhance immune function and potential in in vitro studies. Despite the promising results of in vitro studies of flavonoids in antiretroviral settings, more research is needed to fully understand their effects and mechanisms. Flavonoids should be considered as a complementary and supportive therapy alongside conventional HIV treatments. Additionally, many studies have shown that flavonoids like epigallocatechin gallate (13), resveratrol (14), and others can have potential synergy with antiretroviral therapies.

In HIV treatment, understanding how the inclusion of flavonoids in antiretroviral regimens can improve patient outcomes is essential. By examining the combined effects of phytonutrients with traditional treatments, we can illustrate their contribution to improving the health and quality of life for individuals living with HIV. Antiviral drugs, while essential for the treatment and control of viral infections such as HIV, often result in severe adverse reactions such as nausea, fatigue, and gastrointestinal disturbances, which can negatively impact patient adherence to treatment and, consequently, cause treatment failure. By integrating flavonoids into treatment regimens, patients may experience a reduction in these side effects due to the natural antioxidant and anti-inflammatory properties of flavonoids. This synergistic effect not only supports the immune system but also contributes to overall health and a better quality of life for those undergoing antiviral therapy. As research continues to explore this complementary approach, combining flavonoids and antiviral drugs may be a promising strategy for

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optimizing HIV treatment and improving the patient experience.

Footnotes

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