

IMMUNO POTENTIAL EFFICACY OF FOOD IMMUNE BOOSTERS IN TREATING HIV/AIDS AMONG WOMEN FOLK

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"GOOD FOOD INCREASES THE DURATION OF LIFE ,PURIFIES ONE'S EXISTENCE GIVES STRENGTH, HEALTH, HAPPINESS AND SATISFACTION".

BHAGAVATGITA

Introduction

"HIV I AIDS is a crisis of enormous spiritual, economic and political proportions and increasingly it is a problem of the most vulnerable communities particularly women, young people and children".

The world's biggest challenge today emerges from four simple letters AIDS which stands for Acquired Immune Deficiency Syndrome defined as a specific group of diseases or conditions that are indicative of severe immune deterioration of the body's immune function by Human Immune deficiency virus (HIV), a virus that has been sweeping the world for the past two decades, causing a disease which has killed millions of people and which looks likely to kill millions more. The virus attacks the immune system, the body's line of defence against disease and infections, when the immune system breaks down and becomes susceptible to opportunistic infections.

The raising graph of this pandemic causes new infections worldwide at the rate of 16,000 everyday. HIV I AIDS affects the lives of 2.5 million children, 19.2 million women, and 32 million men and the main victims are adults aged from 15 - 49 years.

AIDS related illness has killed more than 25 million people since 1981, everyday more than 6,000 children are orphaned by AIDS and 1/3 rd of these

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children are under five years. There are 40.3 million people in the world today with HIV, that's more than double the number in 1993. 3. 1 million people died because of AIDS related illness in 2005. More than 95% of all people living with HIV are in the developing world and 95% of all the deaths from AIDS related illnesses have occurred in the developing world.

20 years after the first case of HIV was reported and first documented in Chennai in 1986. The number of people infected with the virus has reached 5.7 million. Two Indians become HIV infected every minute and HIV is expected to exacerbate a number of other important public health problems in India.

India has the second highest number of HIV / AIDS infections in the world. In India one percent of the total populations are infected with HIV. Tamil Nadu being the torch bearer with 50% of the cases and among that 35% of them are in their reproductive age (15 -24 years) followed by Maharashtra and Andhra Pradesh. Heterosexual route is the predominant mode of transmission (85.80%), followed by prenatal transmission (3.45%).

Mobile population like truck drivers, migrant workers who exhibit promiscuous sexual activity with multiple partners, sex workers and needle sharers are most vulnerable to HIV infection.

Since women are socially and economically in a disadvantageous position more than men, the tragedy hits women easily and hence highly susceptible to infections. Factors like poverty, early marriage, trafficking in women, sex work, migration, illiteracy, lack of health and nutritional care, gender discrimination and domestic violence predisposes them to a high risk of acquiring the infection.

The scourge is also fueling the orphan boom, threatening 100 million children world wide who many lose both parents by 2010 leaving them to face ostracism and a host of other ills leaving them to fend for themselves, if not by their grand parents. More than 500,000 children aged under 15 were among the victims of AIDS related deaths in 2005, and 700,000 children were newly infected with the virus.

Thus the present study is an attempt to decrease the prevalence of HIV / AIDS by supplementing foods rich in immune boosters, antioxidants. The present study is a small foot print with the following objectives.

Objectives

The objectives framed for this study are to

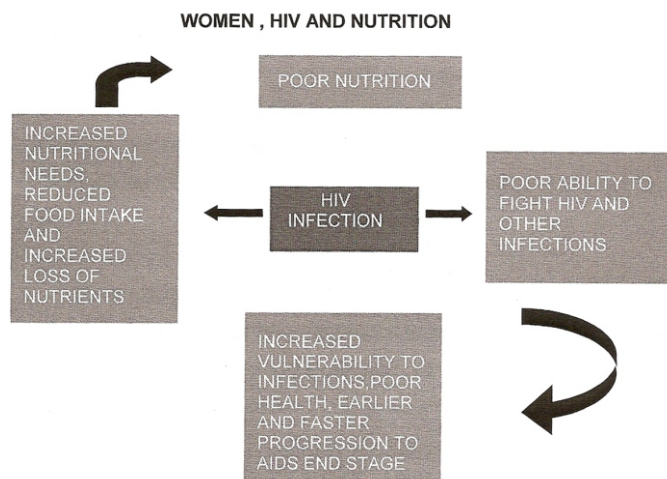
- find out the prevalence and assess the nutritional status of HIV / AIDS patients in selected target areas.
- study the SOCIO economic profile and dietary pattern of selected HIV / AIDS patients.
- formulate and prepare a health mix.
- study the impact of supplementation of health mix on the nutritional and health profile of the selected HIV/AIDS subjects.

ROLE OF NUTRITION IN HIV/AIDS

Prevention being the only care for AIDS, HIV treatment programmes such as Anti Retroviral Therapy (ART) is expected to bolster existing prevention efforts. Due to its prohibitive cost and unwarranted side effects ART is accessible to seven percent of the six million HIV positive people who need the treatment.

The ideal way to tackle HIV is only through prevention which calls for safe sex and great medical advancements such as AIDS vaccines, safe blood transfusion and social vaccine namely education. The efficacy of these in ameliorating the infection is yet to be proven and it still remains only as a tantalizing prize glittering in the distance. So now it is the need of the hour to **"INVEST IN NUTRITIONAL HEALTH"**, to effectively meet the public health risks and challenges in this era of new medicinal technology, to suit the ever changing scenario of emerging infectious diseases, existence of medical assistance without any side effects is the much sought after remedy.

Since the beginning of AIDS epidemic researchers have provided scientific evidence fact that, good nutrition is one the simplest means of helping people live with HIV / AIDS and may even help and delay the progression of the deadly virus by bolstering the immune system and boosting energy levels.



Good nutrition is vital for the health and survival of all people, but it is particularly of great indispensable value to the people with HIV / AIDS.

HIV and associated diseases weaken the immune system and increase the body's need for energy. Food can provide the first line of defense in warding off the detrimental effects of HIV and AIDS and help people recover from illness.

Good nutrition is not a substitute for life extending drug therapies, but nutrition and food in combination with safe water, good hygiene and care can help people with HIV stay healthier, longer, adhere to drug therapies and lead a better quality of life.

Food represents more than a vehicle to deliver nutrients and having food security which includes being able to access food with dignity. The effects of HIV and its complications on nutritional status on HIV disease progression has been explored A well nourished HIV positive person with a controlled viral load is more likely to be able to withstand the effects of HIV infection.

Macronutrients, Micronutrients, antioxidants and immune boosters have an important role to play on people living with HIV, and a simple multivitamin pill may slow the advance of HIV enabling patients in developing countries to delay switching to more expensive drugs.

Nutritious supplements which possess excellent phytochemical, antioxidants, detoxifying, antibiotic, anticarcinogenic, antifungal property represent the paradigm to meet many of the nutritional challenges faced by people living with HIV / AIDS. Patients swallowing a daily dose of vitamin E,C,B complex for up to five years were around 50 percent less likely to progress to full blown AIDS than those in comparison group.

Antioxidant supplements such as vitamin A, C, E selenium and zinc have enjoyed great popularity among people with HIV / AIDS in the era of highly active Anti Retro Viral Therapies. Antioxidants may get a new lease on life as supportive elements of a regimen that seeks to both suppress HIV and restore immune function as much as possible with the least toxic side effects.

Vitamins and minerals are necessary for everybody. They play an even bigger role in the nutritional status and health of individuals with HIV / AIDS. Minerals are natural elements that are needed by the body to perform various functions and keep the immune system healthy.

Deficiencies of vitamin A, Vitamin E, vitamin C and B complex vitamins increment the risk of progression of HIV positive individuals to AIDS.

Scientific evidences show that AIDS is neither an infectious nor a contagious disease but is instead a degenerative, toxic and nutritional illness caused by involuntary and sometimes voluntary exposure to the alarming global increase of immunological stress agents, which are of chemical, physical, biological, mental and nutritional origin. These stressor agents in the body include an excess of free radicals, especially oxidizing agents, which progressively impair the immune system eventually, provoking manifestations of opportunistic infections, tumors and metabolic disturbances.

Since the beginning of the AIDS epidemics researches have provided scientific evidence that supports the possibility that AIDS can be effectively controlled, treated and overcome by guaranteeing an optimal nutritional status to the individual or the patient. However, it seems that propaganda spread by pharmaceutical companies to commercialize antiretroviral medications has prevented these ideas from being widely accepted despite the toxicity of these medications.

There is an uncanny similarity between the immunological findings in nutritional deficiencies and those seen in AIDS.

Soya represents the paradigm of a dietary source possessing excellent nutritional and prophylactic profiles due to the presence of abundant proteins, antioxidants and bioactive phytochemicals, opening new vistas for its products as functional foods in the global scenario.

Soy protein isolate is recognized as the richest reservoir of proteins, among food crops containing all the essential amino acids. It is the only protein to stand in comparison to milk, egg and meat protein. The protein requirement of HIV infected persons jumps from 50 to 100 percent higher than normal level and calorie needs may increase 10 to 15 percent. Soy protein isolate being nutrient dense, is well suited to meet many of the nutritional challenges faced by people with HIV, especially in the developing countries.

During muscle wasting in AIDS, the body burns up body cell mass to activate immune cells, but high quality protein such as Soy, help the body protein replenish itself and slows down the viral load. Isoflavons present in soy protein isolate are associated with phenolic compounds called isoflavones which acts as powerful phytoestrogens.

Protease inhibitors prevent T - cells that have been infected with HIV from producing new copies of the virus. The paramount importance of vitamin E, vitamin C, zinc in anti HIV effects and decreased susceptibility to infections are proven time over.

Germinated wheat flour is found to have significantly higher crude protein, crude fat, lysine, thiamine and riboflavin; it is also an ample source of niacin, folate and vitamin E.

Scientific investigations on the medicinal properties of guava leaf products date back to the 1940s. Guava leaves exhibits anti amebic, antibiotic, anti diarrheic, anti hyperglycemic, anti mutagenic, anti spasmodic and sedative effects. A randomized double blind study of 122 subjects documented proved that guava leaves extract is as effective as tetracycline in treating acute infectious diarrhea.

Most physiochemical analyses investigated the properties of guava leaf products, revealing more than 20 isolated compounds, including alkaloids, anthocyanins, carotenoids, essential oils, tannins, triterpenes, and vitamin C.

The main active constituent in the plant is quercetin. Spasmolytic and antidiarrhoeal effects are associated with its quercetin derived flavonoid which support use of this ancient leaf remedy in treating GI disorders.

The young leaves of the plant have been used as a tonic to treat digestive conditions such as cholera and diarrhea in Brazil and Mexico.

Mexican medicinal data document that the treatment of acute diarrhoea, flatulence, and gastric pain by using guava leaf water decoction for oral administration 3 times daily. Guava leaves may be useful in treating infantile Rotaviral enteritis.

Wheat grass simply called as " Panacea on earth " is a complete food in itself it also contains every vitamin identified so far by science and all known mineral elements.

The three most important effects of wheat grass on the human body are; blood purification, detoxification and colon cleaning this is because wheat grass is the richest source of vitamins A,B,C,E,K calcium, chromium, potassium, iron, Magnesium, Sodium, sulphur, chlorine and •zinc. Wheat grass contains certain enzymes such as protease, chytochrome oxidase, amylase, lipase dehydrogenase

and super oxide dismutase, which together pack a powerful punch against HIV replication. When super oxide dismutase was added to the test tubes containing HIV infected cells replication of HIV was halted.

Wheat germ is the only source which contains laetrile B 17 which acts as immune booster. The chlorophyll and antioxidants present in wheat grass helps to grasp free radicals, studies prove that, since the beginning of the AIDS epidemic, free radicals and specifically oxidizing agents, have been implicated in the pathogenesis of this new syndrome. The B vitamins present in wheat germ has a beneficial effects on immune parameters and clinical outcomes in HIV positive individuals.

Carrot a most preferred tubers is a rich source of vitamin A contains a pigment named beta - carotene. Studies prove that beta - carotene present in carrot may reduce atrophy of the thymus gland and increase antibody response HIV / AIDS patients, Supplemented with B - Carotene rich foods show increase in total WBC count, CD4 count and CD4 and CD8 ratio

Sunflower seeds are an excellent source of Vitamin E, the body's primary fat soluble antioxidants. Phytosterols present in sunflower seeds enhance the immune response of HIV / AIDS patients. Sunflower seeds are good sources of selenium and it has been show to induce DNA repair and synthesis in damaged cells, inhibit the proliferation of HIV. Sunflower seeds are also a very good source of vitamin B, Vitamin B, folate magnesium Manganese, copper, and phosphorous.

Amla popularly known as poor man's apple is the richest source of vitamin C. A methanolic extract of the amla showed significant inhibitory activity on HIV reverse transcriptase, with an IC₅₀ of about 50 mg/ml. Putranivins A, di - galloyl B - D - glucose and digallic acid were also isolated from the fruit and shown to have antiviral activity.

Peanuts is an excellent source of niacin and a good source of protein.

Jaggery will be added to enhance the flavour and taste, which is also a rich source of iron. Iron present in jaggery will minimize the impairment of cell mediated immunity.

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Scope of the Study

The present study views the emerging phenomenon of food based non pharmacological therapy for a growing global burden racing across nations, adversely affecting and threatening the life. Stability of million of people invariably on their age. Therefore this study is expected to offer a permanent solution to HIV / AIDS affected and infected millions of victims who are yet to play longer innings in this over crowded world. Thus the study could offer a welcoming permanent solution to HIV/AIDS.