PROCEEDINGS OF THE
NATIONAL SEMINAR ON THE USE OF TRADITIONAL MEDICINES IN HIV INFECTIONS AND AIDS

September 21 & 22, 2002

Silver Jubilee year
Amala Cancer Hospital & Research Centre
Amala Nagar, Thrissur

Organized by:
Amala Ayurvedic Hospital & Research Centre
Amala Nagar- 680 553, Thrissur

Co -Sponsors:
Catholic Health Association of India (CHAI)
Programme

September 21, 2002

Registration : 8.00am-9.30am
Inauguration : 9.30am-11am
Welcome speech : Rev. Fr. George Pius, CMI
Director, Amala Cancer Hospital

Introduction of the importance of the topic : Dr. K. Rajagopalan
Research Director, Amala Ayurveda Hospital & Research Centre

Inauguration and inaugural address : Dr. V.M. Gopala Menon, I.A.S.
District Collector, Thrissur

Presidential address : Dr. K. Sankaran, M.D(Ay)
Director of Ayurveda Medical Education, Govt. of Kerala,
Arogya Bhavan, TVM

Honouring Dr. Rajagopalan & Memento Presentation : Fr. Gabriel, CMI
Founder Director
Amala Cancer Hospital.

Felicitation : Dr. V. P. Thampi
Medical Superintendent
Amala Cancer Hospital.

Vote of thanks : Rev. Fr. Walter Thelappilly, CMI
Joint Director
Amala Cancer Hospital.
Scientific Session I 11-15-12.45 PM

1. Dr. Urmila Thatte: Immunomodulatory activity of herbal drugs and their use in HIV/AIDS
   Clinical Pharmacology Division
   Seth GS, Medical College, Mumbai

2. Dr. Girija Kuttan: Immunomodulatory activity of Rasayanas
   Amala Cancer Research Centre, Thrissur

3. Dr. V. Jayaprakasan: Immunodeficient diseases in animals
   Dept. of Microbiology Veterinary College, Mannuthy, Thrissur.

4. Dr. R.R. Ganga Khedkar: Issues in designing clinical trial for anti-HIV effect of Herbal Drugs with relevance to natural history of HIV-Diseases
   National AIDS Research Institute, Pune.

Lunch Break

Session II-2.00 PM-4.PM

1. Dr. M. Kesavan: Treatment of HIV&AIDS by Ayurvedic drugs-
   Research officer/Chief physician
   Amala Ayurveda Hospital
   Dr. R. Kuttan
   Research Director
   Amala Cancer Research Centre

2. Fr. Sebastian Ouseparambil: Integrated approach to medicine
   Director CHAI, Secunderabad

3. Dr. Vasudevan Namboothiri: Vyadhi kshamatwa and Sodhana Chikitsa in HIV infections and AIDS
   Prof. and Superintendent
   Govt. Ayurveda Hospital
   Trivandrum-1

4. Dr. K. Muraleedharan: Possible line of treatment in HIV infections and AIDS
   Deputy Chief Physician
   Aryavaidya Sala Nursing Home
   Kottakkal
   Session ||| 4.15-5.15 PM

Session IV-9 AM to 11 AM

1. Dr. C.N. Devanayagam: Clinical studies using Sidha
Former Medical Superintendent
Govt. Hospital of Thoracic Medicine, Chennai

2. Dr. K. Sasidharan
Kerala samajam Hospital Shornur.

3. Dr. T.S. Vijayakumar
Dept. of Clinical Virology CMC Hospital, Vellore.

4. Dr. ChitraValsan
Dept. of Micrology Amala Cancer Hospital, Thrissur

Session V-11.00-1.00

1. Dr. M.P. Thobas
Amala Hospital, Thrissur

2. Dr. U. Nandakumar
IMA Blood Bank, Cochin

3. Dr. K.B. Mohan
Medical College, Calicut

4. Dr. D.N. Arunkumar
Bangalore

Session VI - 2.00-4.00 (Free papers)

1. Dr. B. Krishnamurthy
Cuddalore, Tamilnadu.

2. Dr. T. Muthukrishnan
(CHA I-Secunderabad)

3. Dr. Raghavan
(CHA I-Secunderabad)

4. Dr. Fr. Baby ilikal
(CHA I-Secunderabad)

5. Dr. Sr. Tresa Karott
(CHA I-Secunderabad)

6. Mr. Sreenath Mathur
(CHA I-Secunderabad)

Vote of Thanks:
Dr. Sr. Austin M. D. ( Ay)
Research Officer & Consultant Physician
Amala Ayurveda Hospital
& Research Centre.
34.3 million adults and children are living with HIV/AIDS today and 5.4 million get newly infected with HIV with a 1.07% adult prevalence rate. The current treatment trends of HIV include anti-retro viral drugs, treatment of opportunistic infection and immunomodulatory from plants, including leads, precautions and problems with lant based research and future directions.

A search in NAPRALERT and phytodoc (up till 1997) revealed 200 citations on plants (90% higher plants), and 30 on isolated compounds but very few clinical studies. The plants described as immunomodulators are broadly derived from the Indian, Chinese and Western systems of medicine.

Our early work started with rasayanas. These plants have been described in Ayurveda as agents which “prevent ageing, re-establish youth, strengthen life, improve brain power, prevent disease”. The Rasayanas selected included Tinospora cordifolia Miers. Asparagus recemosus Wild, Withania somnifera Dunal, Emblica officinalis Gaertin, piper longum Linn and Terminalia chebula Retz. We proved through stimulation of immune cells.

Tinospora cordifolia known colloquially as Gulvel was shown to protect against experimental infections in normal and immunosuppressed animals. The immunostimulation was associated with protection against leucopenia and bone marrow proliferation. Clinical studies indicated that he pla PMN and macrophage (peritoneal and alveolar) stimulation, along with an increase in No production in vitro by alveolar macrophages as well as in vivo. There was also increase in serum GM-CSF activity in a dose dependent fashion. Tinospora cordifolia reduced the apoptotic effect of cyclophosphamide in bone marrow cells although it increased apoptosis at higher doses itself.

Withania somnifera: Ashwagandha has been shown to protect against infection such as Aspergillosis where in Balb/c mice,Withania somifera at the dose of 100mg/kg given orally for 7 days prolonged the survival;period of infected mice and increased the phagocytosis and ICK of macrophage. It also prevented myelosuppression, with a significant increase in Hb, RBCs, WBCs, platelets, body weight and hemolytic antibody responses towards RBSs. The bone marrow cellularity (-esterase positive cells), circulating antibody titre and number of spleen plaque forming cells increased and there was inhibition of DTH. Withania somnifera also increased enhanced IFN-g, IL-2 and GM-CSF. Lowered TNF and afforded protection against the side effects of anti-cancer drugs. It reduced the cyclophosphamide induced urotoxicity, reduced serum BUN and increased
bladder and lover GSH. Withania somnifera is believed to act as an antioxidant as it prevents LPS induced rise in lipid peroxidation in rabbits and mice and produce a dose related increase in rat brain SOD, catalase and glutathione peroxidase.

Mangiferin obtained from Mangifera indica has been reported to enhance tumor cell cytotoxicity of the splenic cells and peritoneal macrophages while Glycerrhiza glabra stimulates phagocytosis, IL-2 and Humoral immunity.

Other Rasayana reported to exert immunomodulatory effects include Aloe vera, A. recemosus, A. sativum. B. Diffusa, piper longum T.chebula and S. anacardium. The Non-Rasayana P[ants with immunomodulatory effects include A. paniculata, B, serrata Centella asiatica, Curcuma;longa and T. indica.

Chinese medicine is replete with descriptions of immunomodulatory agents. These include tonics or restoratives like Panax ginseng and Eleuthrooccus senticosus, and others like Angelica sinensis and Olderlandia diffusa.

Among the Western plants the most well studied include Echinacea. Mistletoe and Garlic. About a 1000 preparations containing Echinacea with 11.3% of herbal sales and 3 million daily doses, costing 50 million been described.

The expressed sap of aerial parts or hydroalcoholic extracts of roots are described and the following chemicals identified: flavonoids, essential oils, polysaccharides, derivatives of caffeic acid, polyacetylenes, alkylamides, and alkaloids.

19 randomised controlled clinical trials with Echinacea have been described as below:

<table>
<thead>
<tr>
<th>Indication</th>
<th>Mono-preps</th>
<th>Combinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common cold/flu</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>RTI</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Other infections</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Healthy volunteers</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>23</td>
</tr>
</tbody>
</table>

The evidence indicated that Echinacea is better than placebo and exerts moderate effects with low incidence of adverse reactions though no recommendations regarding formulation can be made. However, more well designed trials are needed.

The European Mistletoe was used by the Celtic druids 2000 years ago and contains proteins, Polysaccharides, Mistletoe lectin which are well studied. Unfortunately clinical benefits are not clear although they induce apoptosis, cytotoxic gene expression of inflammatory cytokines, stimulate secretion of IL-L,IL-6,TNF-a, IFN-g, GMCSF, phagocytosis, and NK cytotoxicity.

Garlic stimulates T,B and NK cells, macrophage phagocytosis,IL-2,TNF-a, IFN-g antibody production, anticancer and antistress effects, exerts ani-allergic, anti-arthritic and anti-infective effects and has been found useful in AIDS and the elderly.
Where do we look for leads when investigating immunomokulatory agents? The general leads include ancient literature, Phytochemical Composition and Random Screening/high through-put screening.

Several problems exist while doing herbal research for example while using ethnomedical leads the relevance of Translation. vs interruptions must be kept in mind. Attention must be given to the conceptual framework of the ethnomedicine and, whether to use a polyherbal or single herb must be remembered.

Problems in evaluation include the fact that the disease syndrome is not clearly mentioned in ancient texts, evaluation of holistic therapy vs. drug therapy is difficult and more research in research methodologies is needed.

The source material-plant has to be identified correctly than standardised before use. Whether to use the whole extract or isolated compound is another issue.

While doing clinical studies the following issues have to be addressed: which formulation, what dose, how much toxicity testing is needed, what design, the issue of individualization, in HIV Particular, the stage of progression, unpredictable natural history and choice of parameters of assessment (for example the importance and need to include quality of life parameters) are some of the problems that have to be addressed.

Ethical issues also arise in clinical studies including what to use as controls e.g. no treatment vs. best available treatment, cost of the study etc.

in the future it is necessary to promote all levels evidence generated and give more weightage to Ayurvedic permeates of assessment and quality of life assessment. Using good clinical modes it is necessary to generate convincing data using reproducible parameters and conduct studies under strict GCP guidelines. Focused national programmes with a balance of Ethics, Science, Global acceptance and funds with a well-defined research policy is the need of the hour.
Immunomodulatory Activity of Rasayanas
Dr. Girija Kuttan
Amala Cancer Research Centre, Thrissur

Rasayana are herbal drug preparations which are extensively used in Ayurvedic treatment. They are nontoxic preparations and have been reported to have immunomodulatory activity. According to indigenous system of medicines in India, Rasayana therapy nourished blood, lymph, bone marrow, flesh and semen which in turn arrests ageing, increases intelligence and strength and enables to prevent diseases it also help to arrest degenerative diseases. Rasayana are being used either independently or with other types of treatment.

Recently there have been a renewed interest in the search of potential drug especially of plant origin for diseases for which the modern medicine seldom offers a cure. Immunomodulators used to produce an immunocompetent state so as to ward off many diseases. In the present review we give results of a scientific analysis on the immunostimulating activity of Rasayana and their possible use as an adjuvant in HIV.

Effect of Rasayanas on Cellular Proliferation

We used Balb/c mice in order to study the effect of Rasayanas on proliferation of haemopoietic cells. The following Rasayanas were used, 1. Bramha Rasayana, 2. Narasimha Rasayana, 3. Aswagandha Rasayana and 4. Amrthoprasa. Administration of Rasayana (50mg/dose/5 alternate days) was found to increase the total WBC in mice. Maximum WBC was found on day 6 which was more than double than the initial value.

Moreover percent of polymor phonuclear cells were also found to be increased by the administration of Rasayana. There was no significant change in the hemoglobin content. Bone marrow cellularity of mice treated with Rasayana was also found to be increased. percent increase seen in the case 8 Brahma Rasayana on 16th day was 64.6% and on 21st day it was 54.3% than the control. Esterase positive cells were also increased after BR treatment indicating that Rasayanam helped in maturation of stem cells. This was also seen from the increased blastogenesis medicated by mitogenic stimulation after Rasayanas treatment.

Effect of Rasayanas on the stimulation of immune system:

Both humoral immunity and cell medicated immune response were found to be stimulated by the treatment with Rasayanas Administration of Rasayana to mice was found to increase the circulating antibody titre produced by administration of sheep red blood cells. moreover administration of Rasayanam was found to increase the antibody forming cells indicating that Rasayana treatment could stimulate the production of antibody by b-cells. Rasayanas could stimulate the natural killer cells which are especially useful in the tumor cells destruction. NK cell activity was higher and expressed earlier in the tumor bearing animals treated with Rasayanas. Similar observation was also seen with the antibody dependent cytotoxicity which was expressed earlier that in the untreated tumor.
bearing animals. Rasayanas was also found to increase the macrophage medicated lysis of tumor cells possibility by the production of increased tumor necrosis factor.

Recently we have analysed the serum level of cytokines after administration of Brahma Rasayana (BR). It was also noted that administration of BR significantly increased the formation of Interferon-γ, Interleukin-2 and Granulocyte macrophage colony stimulation factor, which may be responsible for some of the observed biological activity of BR.

**Myeloprotective effect of Brahma Rasayanas:**

BR treatment was found to enhance the production of stem cells and its maturation after their depletion so that these animals could recover from the Myelosuppressive effect of cyclophosphamide and radiation. Administration of BR could also increase the nodular colonies in the irradiated mice produced by the administration of bonemarrow cells from donor mice which are treated with BR indicating that administration of BR increased the potential of stem cells to colonize at distant sites.

**Effect of Rasayana in tumor development:**

Rasayana did not have any significant effect in reducing the ascites tumor induced by Dalton's lymphoma ascites tumor and Ehrlich tumor cells. However the solid tumor produced by these cells were found to be retarded significantly by oral administration Rasayana. BR was found to inhibit the chemically induced sarcoma by the administration of 20-methyl cholangrene and increased life span of these animals. BR was also found to inhibit the lung tumor metastasis produced by B16 F 10 melanoma cells in c57 BL/6 mice. Even though BR did not have any significant activity as an anti cancer drug it was found to prevent cancer and reduce the secondaries.

BR was found to be a good antioxidant. It was found to scavenge the oxygen radicals such as superoxides, hydroxyl radicals, lipid peroxides, nitric oxide in vitro and reduced the superoxide and nitric oxide generation of macrophages in vivo. BR was also found to reduce the micronuclei induced by radiation in animals and inhibited the chromosomal aberrations.

A pilot study to find the effect of BR in cancer patients under gone chemotherapy and radiation therapy was under-taken. Then patients were selected in the study. Leucopenia, neutropenia and lymphopenia produced in these patient by the simultaneous administration of chemotherapy along with radiation therapy was significantly reduced by the administration of BR. Dose of BR given in these patients were 50gm/day in three divided doses.

In summary, we have given scientific evidence on the immunological stimulation Rasayana in normal animals and in animals, which are immunosuppressed, and the usefulness of BR an adjuvant in cytoreductive therapies such as in cancer is highly suggested. Mechanism of action is not well understood. But the immunological action may be due to the syneragistic activity of several of the immunostimulatory plants preesent in the preparation. Possible use of Rasayana bipecally BR in immunosuperd state seen as HIV is highly Regular.
Published Papers:-


Destruction of immune system, there by dysfunction and deficiency is caused by a variety of agents including viral infections. The most important virus induced immunodeficiency is by HIV 1 and 2 infections in humans and two closely resembling animal infections are Simian AIDS caused by SIV and Feline AIDS caused by HIV. In addition to these, several RNA viruses and few DNA viruses do infect cells of the immune system and effect varying degrees of immunodeficiency syndromes in man and animals. Among the RNA viruses the ones belonging to the genus Lenti virus in the family Retroviridae stand first to target the T cells, macrophages and dendritic cells resulting in immunodeficiency. In bids virus belonging to the genus Avibirna virus of Birnaviridae primarily destroy the B cells and cause severe impairment of humoral immune system and atrophy of Bursa of Fabricius.

Feline AIDS by HIV is a chronic progressive degenerative disease similar in several respects to Human AIDS, but antigenically distinct viruses cause them, which does not cross infect or cross react. The causative viruses in both conditions are members of genus Lenti virus of family Retroviridae, similar in morphology, structure and their mode of pathogenesis but they are host specific (species-specific) showing high cell tropism in their cell receptors requirement. Only cells of feline origin have been found to support replication of most primary HIV isolates.

HIV isolates from domestic cats have been classified into give subtypes, designated A,B, C,D and E. Although may HIV -infected cats may have frequent contact with multiple strains of HIV, they usually become infected with a single HIV subtype. The disease is reported to be world wide in distribution and with the highest record in Japan. A good percentage of HIV infected cats are also seen to be concurrently infected with FeLV, which makes it difficult for specific diagnosis.

Old male infected cats through their aggressive biting character generally spread the infection as saliva of the infected cats contains the highest concentration of infectious viral particles. Though mother to kitten vertical transmission is rather uncommon, suckling kitten gets infected through colostrums and milk. The disease is also sexually transmitted bur not the main mode of transmission.

Loss of CD4+T cells is one of the hall marks of HIV infection. The virus replicates in CD4+ and CD8+T cells, megakaryocytes, neuronal cells and in macrophages. The HIV binds to CD9 as well as CXCR4 instead of CD4 and CXCR4 in case of HIV. HIV cats may show a shift away from a Th I cytokine production pattern with an increase in CD8+cells.
There distinct disease syndromes are expressed in chronic infections of HIV as immunoproliferation, immunodeficiency and neurological disease. The incubation period may last for several years and the cats remain infected for life. The presence of serum antibodies directly correlates with the rate of isolation of virus from blood cells and saliva.

The clinical feature of Feline AIDS is characterized by four distinct stages. The first acute stage, which lasts for several weeks, is marked by fever, lymphadenopathy, viremia anorexia, diarrhea, mild pneumonitis, conjunctivitis and nephritis. This stage is not fatal otherwise not complicated by other infections. The second asymptomatic or latent stage lasts for years depending to the age and physiological status of the animal and is marked by progressive impairment of immune function. The cats will be apparently healthy but with a progressive drop in their CD4+T cells. Lymph nodes show gradual hypoplasia leading to aplasia. Cats develop signs of none marrow suppression characterized by leucopenia and anemia. The third stage is marked by the onset of generalized lymphadenopathy with vague signs of ill health such as recurrent fever, inappetance, weight loss, chronic stomatitis, arthritis and behavioral abnormalities. The cats develop secondary but not opportunistic infections. The final fourth stage with severe AIDS like disease that lasts only few months before the animal dies is marked by opportunistic infections due to severe immunological defects along with anemia, lymphopenia and neutropenia.

Laboratory diagnosis of the disease is made based on detection of virus by Enzyme immunoassay or detection of proviral DNA in leukocytes by PCR or detection of specific antibodies in body fluids by EIA, FAT or by other test. Detection of HIV antibody is the diagnostic test of choice as the level of virus in blood of infected cat are frequently so low as to be undetectable by conventional methods.

Treatment of Feline AIDS associated secondary infections is based on the clinical signs and the nature of the infectious agents. The drug Azidothymidine (AZT), useful in therapy of Human, AIDS, is effective but expensive in Feline AIDS treatment. Drugs such as interferon and acemarmar, which modify immune system, appear to be useful in treating HIV associated disease but not to eliminate HIV. Synthetic peptide antibiotics such as Peptidyl MIM and polyamides are all experimented for treatment, but with limited success.

At present no effective vaccine is available to prevent HIV infection though several natural and modified immunogens were tried for the same.

With regard to the public health significance of this infection, initial studies indicate Veterinarians, owners and researchers who have had close contact with HIV infected cats show absolutely no evidence of HIV infection. HIV infections appear to be solely restricted to felines and commonly in domestic cats. Though the risk of transmission from cats to human is minimal, immunocompromised person (those under going chemotherapy, HIV infected persons, pregnant woman, and newborn infants) should not be exposed to cats with HIV infection.
The Efficacy of Ayurvedic drug formulation against HIV/AIDS disease.

Dr. M. Kesavan, Dr. Austin & Dr. K. Rajagopalan
amala Ayurvedic Hospital

Dr. Kuttan, Amala Cancer Research Centre. Trichur

Human immunodeficiency virus (HIV) has been conclusively known to be the causative agent for AIDS which is a major killer disease of the modern times affecting almost 50 million people around the world. The fact that the majority of the affected individuals are from Asia and Africa and that India is highly vulnerable to the disease make it very important in the national priority in the medical strategy of the coming decade. Even after the intensive research of the last decade, there are no effective remedies for the disease and available one are highly costly and is not affordable to the affected persons in India.

It has been known that CD4 lymphocytes are mainly affected by the HIV when this class of lymphocytes are destroyed, it produces an immunological imbalance in the body and weakens the resistance to several opportunistic infections, consequently leading to death. The medicines available at present produce a decrease of the viral load, but as they are immunosuppressents they can produce a deterioration of the patients immunity. Hence a search for non-toxic drugs that can stimulate immunity and thereby increase the body's ability to fight the HIV infection are being sought.

Indigenous medicines in India are known for their action of stimulating the immune system. Rasayanas which are preparations made either from a single plant or a combination of several plants are known for their immunomodulatory properties. The immunostimulating activity of plants such as Tinospora cordifolia, Withania Somnifera, Viscum album, Emblica officinalis. Semicarpus anacardium Asparagus racemoses and Pueraria tuberosa have been studied in detail and some of them are being used in immunodeficient conditions such as cancer.

In Ayurveda a similar condition to HIV/AIDS has been mentioned which is known as “Ojakshaya”, in which the fall in immunity may be due to other pathological condition for which medicines have been prescribed. Charaka Samhita, Susrutha Samhita and Ashtanga Hrudaya explain the function of 'Ojas' its symptoms, and the diseases caused by its depletion. 'Ojas' is otherwise explained as 'Bala' (strength) and 'Dhatusara'. “Ojas” is of two types namely, ‘para ojas' and 'Apara ojas'. The 'ojas' of para(excellent) type is eight drops in quantity and death occurs when this get depleted. The other type 'Apara ojas' is also known as 'sleshmaka ojas', the quantity of which is described as “Ardha Anjali”. When this ojas is not affected the bodily functions will be normal.'Bala or immunity prevents in the body. 'Ojas' depletion occurs due to the physical and mental causes such as a blow, a persistent wasting disease, anger, grief, anxiety, fatigue and hunger. “jeevaneeya oushadhas” -(certain groups of herbal drugs described in ancient Ayurvedic texts as Jeevaneeya oushadhas) along with milk, meat soup can counteract 'ojakshaya'. 
HIV infection leads to break of immunity of the body. But this immunological breakdown does not occur in every person in the same manner. According to the body strength, an infected person may be free of symptoms up to 15 years. So it can be ascertained that one may not get AIDS when the immune mechanism is intact even if he is infected. 'Ojas' is the abstract part of seven dhatus. Dhatus are the vital tissues of the human body. They are Rasa(Chyle), Raktha(blood), Mamsa(flesh), Meda(fat), Asthi(bone), Majja(bone marrow) and Sukra(semen). So, when there is adequate poshana (nourishment) of Dhatus the 'ojas' is maintained in the body. For the proper nourishment of Dhatus, Dhatwagnies have an important role. As Dhatwagnies are the nourishing enzymes of Dhatus. Each Dhatu is being nourished by the help of Dhatwagni. We have selected the drugs for HIV/AIDS keeping the above points in mind. Three types of drugs are selected for this study. They are Jeevaneeya, Bramhaneeya (maintaining or improving body wt.) and Panchaneeya (or nourishing).

AIDS research was started by Amala Ayurvedic Hospital using collaboration with Amala cancer Research Centre in December 1992. A total no. of 700 HIV/AIDS cases were seen till 2-4-2002. On the basis of the known literature we have formulated 3 types of Ayurvedic herbal preparations to counteract the 'Ojakshaya' seen in HIV/AIDS cases.

In the present study, we have evaluated the efficacy of the medicines in improving the immune status of the HIV patients with AIDS related syndrome.

**Materials and Methods**

The study was conducted on patients in whom the HIV infection was confirmed through ELISA and Western blot tests. For the clinical evaluation of medication 700 patients were studied. For detailed study these patients were again classified into three groups. In the first group all the 700 patients were included. In the second group 45 AIDS symptoms patients were selected. In the third group 11 AIDS patients were selected and their CD4, CD8 ratio and other immunological parameters before and after treatment were done at CMC Medical College, Vellore and its details will be presented by Dr. Ramadasan Kuttan.

Initial weight of the patient as well as the history, duration of contact and prior medication were recorded.

**Medication**

Patients were given three types of medications formulated in our centre which are coded as NCV-I, AC-II and S.G.-III.

**Table 1.**

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>No. of Patients</th>
<th>Relieve after Treatment</th>
<th>Complete</th>
<th>Partial</th>
<th>No. of relief</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symptoms</td>
<td>With Symptoms</td>
<td>Percentages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------</td>
<td>-------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fever</td>
<td>45</td>
<td>33(79%)</td>
<td>7(16%)</td>
<td>5(5%)</td>
<td></td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>11</td>
<td>9(82%)</td>
<td>2(18%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Cough</td>
<td>17</td>
<td>11(65%)</td>
<td>6(35%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Lymphadenopathy</td>
<td>49</td>
<td>45(55%)</td>
<td>4(44%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Glossitis</td>
<td>13</td>
<td>4(31%)</td>
<td>9(69%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Loss of appetite</td>
<td>20</td>
<td>13(65%)</td>
<td>5(25%)</td>
<td>2(10%)</td>
<td></td>
</tr>
<tr>
<td>General weakness</td>
<td>18</td>
<td>15(83%)</td>
<td>3(17%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Joint pain</td>
<td>12</td>
<td>10(83%)</td>
<td>2(17%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Insomnia</td>
<td>10</td>
<td>7(70%)</td>
<td>3(30%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>14</td>
<td>9(65%)</td>
<td>4(28%)</td>
<td>1(7%)</td>
<td></td>
</tr>
<tr>
<td>Itching</td>
<td>12</td>
<td>9(75%)</td>
<td>3(25%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Anorexia</td>
<td>6</td>
<td>4(67%)</td>
<td>2(33%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Herpes exbaster</td>
<td>2</td>
<td>2(100%)</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Ulcer penis/vegina</td>
<td>4</td>
<td>3(75%)</td>
<td>1(25%)</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

NCV I and AC II are herbal powders while SG II is ghee based formulation. SG-II formulation was avoided in patients who are having very low appetite and diarrhoea. Dosage of the drugs are as follows.

5. NCV-I : 5 gm – twice a day with milk
6. AC-II : 5 gm – twice a day with milk
7. SG-III : 10 gm – morning and bed time

**Clinical details of group I patients**

The total no. of cases studied were 700 out of this 530 were male, 162 were female and 8 were children.

Group II – Total patients – 45.

**Clinical findings**

medication produced satisfactory relief of opportunistic infection and physical ailments in patients. A summary of the relief of clinical symptoms is shown in the table. 1. The drug produced satisfactory relief of fever, diarrhea, joint pain, itching and produced partial relief to lymphadenopathy, glossitis etc. Moreover the drug produced a weight gain in most of the patients and with feeling of well being.

In summary medication found to be useful in improving the immunological status in many HIV patients with ARC with subsequent improvement in health. The drug also increased the life span in many patients.
Conclusion

5. The total number of patients studied were 700.
6. Among the 700 patients 313 were HIV carriers, 294 were AIDS symptoms patients and 93 were feel blown cases.
7. It was seen that this disease mainly gets infected through sexual contact.
8. Medication was found to be useful in improving the immunological status in HIV patients and as well as early stages of AIDS.
9. The drugs produced a weight gain in most of the patients and with a feeling of well being.
10. Drugs also increased the life span in many patients.
11. None of the patients become sero negative during the treatment.
12. Our drugs did not produce any adverse toxicity to the patients.

**Body weight of 30 HIV patients before and after treatment**

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</tbody>
</table>
Clinical Evaluation

For the clinical evaluation of the medication against HIV/AIDS, eleven patients were studied. All the patients were positive to HIV-ELISA (Gene labs, USA) supplied by Ranbaxi, India and were confirmed for positively using Western Blot (Gene Labs. USA) supplied by Modi Biotec, India and done in our laboratory.

The patients were examined by an Ayurvedic Physician and a medical doctor. All the patients selected in the study have contacted with HIV either through sexual contact or through accidentally using a contaminated blood product. Duration of the disease varied but the minimum was 5 years. All patients selected in the study were symptomatic with AIDS related complex and the symptoms varied from fever, lymphadenopathy, diarrhoea, skin rashes etc. and tuberculosis. None of the patients selected had taken any other medication either Ayurvedic, homeopathic or modern medicine specifically for HIV.

Initial weight of the patient as well as the history, duration of the contact, prior medication were recorded. Patients were informed about the merits and demerits of the treatment given and individual written consent was obtained.

Medication

Patients were given three types of medication formulated in our centre which are coded as NCV I, AC II and SG III. NCV I and AC II are herbal powders while SG III is ghee based drug. (this formulation was avoided in patients who are complaining gastrointestinal problems.) Dosage of the drugs are given below:

NCV I : 5 gms twice daily with milk
AC II : 5 gms twice daily with milk
SG III : 10 gms morning and evening

All the drugs and tests were given free of charge. Before starting the medication patients were asked to undergo cell phenotype analysis at Dept. of Virology, CMC Hospital, Vellore. This was done using FACS Scan. Becton Dickenson, USA using BD Simultest Reagent.

The patients were seen in the clinic every two weeks initially and every one month thereafter. They were asked to report any physical problems immediately to clinic and they are recorded.
Medications continued for one year and they were asked to undergo cellular phenotyping at 9th month and a few patients after 12 months. Western blot of the patients were repeated after 12 months.

**Results**

the evaluation of 11 patients for the effect of medication for HIV and AIDS are given in Tables given below.

**Body weight**

In most cases the body weight was positively increased during the first six months. (Table 2) There after the body weight was found to remain same or showed a slight decrease which may be due to the increased activity of the patient as they are professional workers. A few cases where the body weight was decreased drastically (P6) was due to the decreased food intake.

<table>
<thead>
<tr>
<th>Name</th>
<th>Before</th>
<th>3 Months</th>
<th>6 Months</th>
<th>9 Months</th>
</tr>
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<tbody>
<tr>
<td>P1</td>
<td>50 kg</td>
<td>59 kg</td>
<td>65 kg</td>
<td>60 kg</td>
</tr>
<tr>
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<td>P6</td>
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<td>41</td>
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<tr>
<td>P7</td>
<td>40</td>
<td>41</td>
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<td>P8</td>
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<tr>
<td>P10</td>
<td>59</td>
<td>60</td>
<td>62</td>
<td>63</td>
</tr>
<tr>
<td>P11</td>
<td>38</td>
<td>42</td>
<td>47</td>
<td>45</td>
</tr>
</tbody>
</table>

**Life Span**

Medication improved the life span of the patients considerably. Patient like P/11 in fact was discharged from the Medical college Hospital without further treatment. Even this patient showed positive improvement during the medication.

Two of the patients died (P4 & P7) during the project period. P4 died of acute diarrhoea and stomach candidiasis, and decreased food intake while P7 died of stomach candidiasis. In fact upon administration of antifungals to this patient at this stage worsened the condition of the patient.

**Lymphocytes**
Total lymphocytes (cmm) was normal in all the patients except P4 which was 690. (Table-3). The value did not alter significantly change after the treatment.

### TABLE 3
**EFFECT OF MEDICINES ON LYMPHOCYTES**

<table>
<thead>
<tr>
<th>Patient</th>
<th>Lymphocytes(cmm) Before</th>
<th>After (1 year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>610</td>
<td>2716</td>
</tr>
<tr>
<td>P2</td>
<td>4170</td>
<td>2070</td>
</tr>
<tr>
<td>P3</td>
<td>3310</td>
<td>1920</td>
</tr>
<tr>
<td>P4</td>
<td>690</td>
<td>(expired)</td>
</tr>
<tr>
<td>P5</td>
<td>4500</td>
<td>1500</td>
</tr>
<tr>
<td>P6</td>
<td>4500</td>
<td>Sick</td>
</tr>
<tr>
<td>P7</td>
<td>3810</td>
<td>(expired)</td>
</tr>
<tr>
<td>P8</td>
<td>1750</td>
<td>(discontinued)</td>
</tr>
<tr>
<td>P9</td>
<td>1450</td>
<td>Sick</td>
</tr>
<tr>
<td>P10</td>
<td>2810</td>
<td>1650</td>
</tr>
<tr>
<td>P11</td>
<td>2830</td>
<td>3350</td>
</tr>
</tbody>
</table>

Normal > 1500 cmm

**CD+3 CD+19 Lymphocytes**

CD+3 (Total T+B) were almost normal in most of the patients except P4, and the values were found to be increased after the treatment period. (Table 4)

### TABLE 4
**EFFECT OF MEDICATION ON T AND B LYMPHOCYTES**

<table>
<thead>
<tr>
<th>Name</th>
<th>CD+3 Before</th>
<th>CD+19 Before</th>
<th>CD+3 After</th>
<th>CD+19 After</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>1100</td>
<td>180</td>
<td>1793</td>
<td>291</td>
</tr>
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<td>P2</td>
<td>3590</td>
<td>130</td>
<td>1660</td>
<td>170</td>
</tr>
<tr>
<td>P3</td>
<td>2610</td>
<td>430</td>
<td>1210</td>
<td>461</td>
</tr>
<tr>
<td>P4</td>
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<td>--</td>
</tr>
<tr>
<td>P5</td>
<td>3550</td>
<td>300</td>
<td>930</td>
<td>60</td>
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<tr>
<td>P6</td>
<td>2017</td>
<td>442</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>P7</td>
<td>2970</td>
<td>270</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>P8</td>
<td>770</td>
<td>90</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>P9</td>
<td>750</td>
<td>370</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>P10</td>
<td>2130</td>
<td>230</td>
<td>930</td>
<td>180</td>
</tr>
<tr>
<td>P11</td>
<td>2180</td>
<td>110</td>
<td>2180</td>
<td>200</td>
</tr>
</tbody>
</table>
Normal range CD+3 cells/cmm> 1200
CD+19 cells/cmm 250-750

But B cells count (CD+19) was found to be low in many patients and in case P2 and P22B cell count was found to be increased after treatment.

**CD+4 and CD+8 Lymphocytes**

CD+4 lymphocytes was found to be low in most of the patients and it was well below normal in P4, P1, P6, P8 and P9. Table 5. The ratio of CD+4 and CD+8 was 0.1-0.2 in all the patients. Administration of medicine increased the CD+4 in most of the evaluated cases with subsequent improvement in CD+4 and CD+8 ratio.

Percent of CD+4 in lymphocytes

There was an increase in the ratio of CD+4 in lymphocytes in several patients after treatment which at times was almost similar to normal. (Table 6).

<table>
<thead>
<tr>
<th>Patient</th>
<th>CD+4/cm m</th>
<th>CD+8/cm m</th>
<th>Ratio</th>
<th>CD+4/cm m</th>
<th>CD+8/cm m</th>
<th>Ratio</th>
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<tr>
<td>P1</td>
<td>100</td>
<td>980</td>
<td>0.1</td>
<td>163</td>
<td>1521</td>
<td>0.1</td>
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<td>P2</td>
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<td>3290</td>
<td>0.1</td>
<td>290</td>
<td>1125</td>
<td>0.25</td>
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<td>787</td>
<td>0.41</td>
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<td>0.4</td>
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</tr>
<tr>
<td>P5</td>
<td>300</td>
<td>3200</td>
<td>0.1</td>
<td>240</td>
<td>690</td>
<td>0.34</td>
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<td>50</td>
<td>1953</td>
<td>0.1</td>
<td>60</td>
<td>310</td>
<td>0.02</td>
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<td>270</td>
<td>2700</td>
<td>0.1</td>
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<td>--</td>
</tr>
<tr>
<td>P8</td>
<td>110</td>
<td>600</td>
<td>0.2</td>
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<td>--</td>
</tr>
<tr>
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<td>120</td>
<td>640</td>
<td>0.2</td>
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<td>P10</td>
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<td>1840</td>
<td>0.2</td>
<td>130</td>
<td>790</td>
<td>0.2</td>
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<tr>
<td>P11</td>
<td>200</td>
<td>1970</td>
<td>0.1</td>
<td>200</td>
<td>1850</td>
<td>0.1</td>
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</table>

Normal range CD+4-500-1500
CD+8-277-1728

<table>
<thead>
<tr>
<th>Patient</th>
<th>CD+4cells lymphocytes</th>
<th>CD+4cells lymphocytes</th>
<th>% CD+4(after)</th>
</tr>
</thead>
</table>

**TABLE 5**

**EFFECT OF MEDICATION ON CD4, CD8 CELLS**

**TABLE 6**

**EFFECT OF MEDICATION ON CD4/LYMPHOCYTES RATIO**
CD+4 normal range 500-1500
(Cells/cmm)
NK cell and activated T cells

NK cell and activated T cell indicate the state of infection. NK cell was very high in P6 and activated T cell in P4. Both of them became sick later and P4 expired. Increased activated T cell in P2 was found to be decreased after medication. (Table 7)

Western Blot Analysis

Western Blot analysis of the patients before and after treatment did not significantly produce any change and all patients were positive after the treatment period.

<table>
<thead>
<tr>
<th>fore</th>
<th>100</th>
<th>1610</th>
<th>6.2</th>
<th>163</th>
<th>2716</th>
<th>6</th>
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<tbody>
<tr>
<td>P1</td>
<td>290</td>
<td>4170</td>
<td>4.8</td>
<td>290</td>
<td>2070</td>
<td>14</td>
</tr>
<tr>
<td>P2</td>
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<td>3310</td>
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<td>326</td>
<td>1920</td>
<td>16.9</td>
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<td>1500</td>
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<td>200</td>
<td>3150</td>
<td>6.3</td>
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</tbody>
</table>
### TABLE 7
EFFECT OF MEDICATION ON NK CELL & ACTIVATED T CELL (DR+)

<table>
<thead>
<tr>
<th>Patient</th>
<th>NK cell (Before)</th>
<th>Activated T cell (Before)</th>
<th>NK cell (After)</th>
<th>Activated T cell (After)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>433</td>
<td>110</td>
<td>435</td>
<td>1439</td>
</tr>
<tr>
<td>P2</td>
<td>420</td>
<td>790</td>
<td>230</td>
<td>190</td>
</tr>
<tr>
<td>P3</td>
<td>170</td>
<td>170</td>
<td>192</td>
<td>442</td>
</tr>
<tr>
<td>P4</td>
<td>210</td>
<td>790</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>P5</td>
<td>590</td>
<td>150</td>
<td>345</td>
<td>555</td>
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<tr>
<td>P6</td>
<td>1980</td>
<td>293</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
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<td>310</td>
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<tr>
<td>P11</td>
<td>530</td>
<td>250</td>
<td>900</td>
<td>180</td>
</tr>
</tbody>
</table>

Normal range-NK cells-200-750; Activated T cells 50-300

### TABLE 8
EFFECT OF AYURVEDIC DRUGS ON HIV-INFECTED-SYMPTOMATIC RELIEF

( Total patients-10)

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>No.of cases with symptoms</th>
<th>Relief Complete</th>
<th>Partial</th>
<th>No Relief</th>
</tr>
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<tbody>
<tr>
<td>Fever</td>
<td>7</td>
<td>87 (100%)</td>
<td>1 (20%)</td>
<td></td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>5</td>
<td>4 (80%)</td>
<td>1 (50%)</td>
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<tr>
<td>Lymphadenopathy</td>
<td>2</td>
<td>1 (50%)</td>
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<tr>
<td>Joint pain</td>
<td>2</td>
<td>2 (100%)</td>
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<tr>
<td>Itching</td>
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<td>Glossitis</td>
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<tr>
<td>Tuberculosis</td>
<td>5</td>
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<tr>
<td>Penis ulcer</td>
<td>1</td>
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<td>1 (100%)</td>
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<tr>
<td>Disturbed sleep</td>
<td>4</td>
<td>4 (100%)</td>
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<tr>
<td>Cough</td>
<td>2</td>
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<td>Loss of appetite</td>
<td>5</td>
<td>5 (100%)</td>
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<td>Symptom</td>
<td>Count</td>
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<tr>
<td>Headache</td>
<td>1</td>
<td>1 (100%)</td>
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<tr>
<td>Throat pain</td>
<td>1</td>
<td>1 (100%)</td>
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<tr>
<td>Herpes xostater</td>
<td>1</td>
<td>1 (100%)</td>
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<tr>
<td>Weight loss</td>
<td>10</td>
<td>1 (100%)</td>
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<tr>
<td>Weight gain</td>
<td>7</td>
<td>Weight maintained</td>
<td></td>
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</tr>
<tr>
<td>Weight loss</td>
<td>1</td>
<td>Weight maintained</td>
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In summary, medication was found to be useful in improving the immunological status in many HIV patients with ARC with subsequent improvement in health. This could be seen from their weight gain. CD+4 count and other immunological parameters discussed above. Drug also improved the life span in many patients. However the following observation were also made.

**Other general observation**

2. The financial status of many patients were very bad and a proper nutritious food along with medication could have improved the status better.

3. Many patients have to work hard in order to make their living in spite of the disease. This might have adversely affected the usefulness of the medication which advocates more rest to the sick patients.

4. Oral and stomach candidiasis may product lot of harm to the patient as they are not be able to swallow food and medicine. This needed to be taken care of properly.

5. Patients with TB need take anti-TB drugs.

**Acknowledgment**

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**An Integrated Approach to Medicine**

**Fr. S. Ousepparampil**

(Director, Catholic Hospitals Association of India, Hyderabad)

“In an effort to encourage Indian systems of medicine, the government's National Policy on Medicine would adopt an integrated approach towards imparting medical education blending Western and Indian systems. A suggestion has been made that medical courses should include yoga and the Indian systems of medicine so that the students are able to get the best of all the aspects of medicine. Another proposal before the Government was to have a medical facility combining Western and Indian systems of medicine to provide a comprehensive medical treatment as it was not feasible to open hospital having facilities only for traditional medicines.” stated Atal Behari Vajapayee, the honourable Prime Minister, recently. (The Times of India of 28 October 2001)

Years of experience in medical administration at St. John's Medical College and Hospital, Bangalore, and as a post-graduate student of Health Administration at New York Medical College, the author is convinced of the necessity for integration of different
medical systems to enable people to take the fullest advantage of the specific excellence of different systems as well as to help them become aware of the shortcomings of each system of medicine. The need for such an integration may be argued for on the following grounds.

8. The very development of each system of medicine is based on integration of information.
9. There is no system of medicine which can treat all the sicknesses in the world, nor is there any system which does not possess any specific excellence at all.
10. Since each system is deficient in many aspects of medical treatment, recourse to other systems is a necessity.
11. Medical cost and availability as well as accessibility demand that different systems be resorted to for medical needs.
12. Each system of medicine has a philosophy behind it and all these thoughts are not necessarily holistic.
13. Sickness and medicine are social as well as communitarian. Therefore, treatment also should share the same aspect.
14. Defects of the systems are innumerable, and therefore complementarity of the systems worth be comes worth considering. We will see each of these in detail.

1. The very development of science is based on integration of information
In fact, science simply requires empiricism-making and testing models of reality through what can be observed and guided by certain values and based upon certain metaphysical assumptions. Science itself is not a reality but a system of human knowledge. Scientists often detect difference between metaphysical reality and scientific models constructed through human intellectual activity. A series of information or bits of information when logically and coherently integrated become a system of knowledge which we call physical science, social science, moral science and so on. These new represent a new philosophy.

Medical knowledge and social sensitivity are essential in a knowledgeable medical person. Medicine is not produced in a hospital; it is the result of knowledge and experiences humanity has accumulated over the ages. When bits of knowledge are put together in a logical manner, becomes a science.

13. Allopathic system of medicine has developed through the process of integration
Ayurveda, Siddha, Unani, Homeopathy, Tibetan and Chinese Medicine and related systems are some of the major traditional medical systems in the world. A medical system is defined as the pattern of social institutions and cultural traditions that evolves from deliberate behaviour to enhance health. Medicine as an institution centres found the relationship between health and illness and the physical and psychic capacity of
individuals to perform in their roles. It is linked with birth, life, pain, suffering, anxiety, mortality and death (Rene’c C. Fox, in Charles Leslie, 1998, 102). We are not doing a comparative study in the strict sense but just looking into some of the important medical systems to understand how they developed their social organization, cultural evolution, scientific creativity and professionalization. We need to delve deep to see the processes that shaped the character of each contemporary medical system. We want to study their theoretical structure and the relationships between theory and practice; the extent and nature of their contacts with each other, and the manner in which they emerged and so on.

Through providing understanding, guidance and support the various health systems help people to make decisions on their disease and disability - disability - disease episodes, therapeutic interventions and the like. Health care promotes social cohesion and enriches social life. Health culture is based on popular social culture and it determines the goals, values and status of the individual in the society. Medical system is social and bio-scientific. Beginning with human experience and empirical evidences, the system is nourished by general science and technology. A medical system degenerates when it fails to interact with various other aspects of human life as it happened with Ayurveda. Modern medicine developed largely along the same line of science and technology whereas traditional medicine developed as predominantly social activity. Strength and weaknesses of each system depend on this.

The similarities and differences among health care systems have been systematically studied for over 100 years. As a result, we can now say why so many systems exist and how differences among them matter. Basically, systems arise and persist because each system serves a need. Moreover, patients report satisfaction with one system of care no matter what kind - if that care is delivered in a manner that meshes with their cultural expectations. The form health care takes is first and fundamentally a matter of sociocultural interpretation. In other words, the truth that guides any health care system is relative and is learned (Cassidy, Clair Monod, in Miccozzi, Mare S., 1996, 9).

Allopathic medicine developed and expanded with the European colonial power, rise of modern science, industrial revolution and the spread of communication the world over. And various scientific theories and social organisations of it evolved progressively over several centuries (Hedge B.M 2000, 2). Research on anatomy and physiology done during the Renaissance and Reformation periods generated new methods of scientific work and discovered facts that seemed to invalidate ancient medical authorities. Association of practitioners and government agencies were formed to sponsor and regulate medical services. The institutional network for teaching, research and publications expanded around the world and became more efficient. New-germ-theory of disease and new surgical techniques were developed later. So also was chemotherapy. Medical learning got professionalized and standardized with immediate consequences to social welfare and university education for medicine. Other associated medical courses as training for nurses, technicians, dentists and other paramedical course were so developed.
Medical services became centralized around hospitals and physicians became dominant. State powers started to enforce licenses to practice medicine as well as regulate all forms of medical practices.

6. **The Ayurvedic group of medicine also developed through the process of integration**

Many medical systems grew up along with Ayurvedic. Like other medical systems, Ayurveda too has integrated into its elements from other systems. The different kinds of assimilation Ayurveda has made in the course of its evolutionary history can be made out from the clues we find in Ayurveda itself. Charaka Samhita mentions the lifestyles of the Greeks, Chinese and the Balkans. Plurality of medical systems is also mentioned. This shows that Ayurveda interacted with other systems without losing its identity as well as originality and integrity. Anayukaroga was introduced in Ayurveda many years after it was introduced in Greek and Islamic Medicine (P. Ram Manohar et al, 199,23).

Ayurveda of the Harappan period was different from Ayurveda of the Vedic period. It was again different in the classical period. New ideas and methods got accepted into the system. Shift in emphasis can be seen from the Charaka Samhita (first C., A. D), to Sukruta Samhita of the 3rd Century A. D. and the Vagbhata Samhita of the 8th Century. After the Muslim occupation of the country, the Unani scholars studied Ayurveda and wrote commentaries on Ayurvedic texts. Insights of Ayurveda and Unani were exchanged and both systems got benefited from each other. At present, the co-existing systems are influencing and transforming each other (Dunn L. Frederick, 1998, Passim; Zysk, Kenneth G., 1996, 233).

Now, people are looking to alternative systems for the cure of diseases. There is no system in the world which is self-sufficient enough to cure all the diseases. It is time to decide what each system as well as its practitioner has limitations. Science and culture go together in the interpretation of all the systems of medicine. It is main reason for integration.

4. **There is no system of medicine which can treat all the sicknesses in the world, nor is there any stem which is devoid of some specific excellence.**

Two facts are to be noted: 1) No one health care system addresses the whole field and 2) All health care systems address a considerable part of it. We know that no one system is the best for everything, and existing systems overlap considerably in what they offer (Cassidy, Claire Monod, ibidem 14). Moreover, if change is a constant factor in our lives then the world of medicine is certainly keeping up that premise. What was known, tested and tried earlier may not hold true today. Many things do not remain the same in the world of medicine (Pune Newsline, Jan. 14th 1999). Now people are looking for alternative systems for the cure of diseases.

5. **Since each system is deficient in many aspects of medical treatment, recourse to other systems is a necessity.**
Here more attention is paid to the defects of the Allopathic system because it is acclaimed as the most scientific. Moreover, this system claims that it can sit in judgement on other systems of medicine. When there are defects in a system, the remedy is to be sought through the integration of the good aspects of other systems of medicine.

By and large biomedicine considers other systems as non-modal. And other systems of medicine view biomedicine as non-model. Biomedicine is called the conventional medicine. But to other medical systems, biomedicine is not conventional. Moreover, from a worldwide viewpoint, biomedicine is unusual for its following features.

. Its intense attachment to materialist interpretive models.
. Its focus on the physical body, almost to the exclusion of other possibilities.
. Its focus on the disease, often to the virtual exclusion of the person.
. Its vast development of disease types.
. Its highly technological delivery system.
. Its invasiveness of care modalities.
. Its emphasis on acute disease, trauma, and end-stage malfunction, with relatively little focus on prevention or wellness.
. Its high cost.

Despite these oddities, biomedicine considers itself conventional and it considers other systems alternative. How did this situation come about? Why is it not surprising to most people? Why is it hard for people to consider biomedicine as just one more alternative?

Health care is not free from culture. Biomedicine has Cartesian world-view and a materialistic and positivistic lean because of which their product biomedicine finds itself at home there. Apart from the world-view, the argument that biomedicine is most scientific is a very slippery one and must be examined carefully.

A. Role of science

Science is a particular method of gathering information and constructing knowledge. In contrast to other system such as theology, which allows for revelation, and law, which allows for precedence, science demands that information be sought in the natural world and that interpretations be tested for accuracy. This is extremely unusual; it means that a person's opinion or mere observation and consequent certitude are not enough to make his or her position acceptable to scientists. Instead, the person must show that he or she has gathered data systematically and accounted for potential biases, and then must submit his or her interpretations to others for examination and re-testing. Furthermore, the researcher is enjoined to be a relativist; that is, not to fall in love with his or her interpretations, but to hold them always as models of reality and approximations. This provides remarkable training in humbleness, and to be frank, not very many achieve it.

Euro-American society, in particular, has developed science to be the believable knowledge method, the knowledge orthodoxy of the late nineteenth and twentieth
centuries. The determination with which Westerners cling to their cultural preference concerning the power of science approaches a religious favour, with the rise of clinical medicine in the early nineteenth century, biomedicine gradually took on the cloak of scientism moving towards a laboratory-based experimental model. How did this situation come about, and why is it not moving toward a laboratory based experimental model to consider biomedicine as just one more alternative?. Although the experiment is only one way to gather valid data using scientific method, this became accepted as the scientific approach by the early twentieth century. American biomedicine already contrasted itself to other systems by claiming to be experimental-hence uniquely scientific. Given that the clinical observation skills and experience guided by their explanatory models- it became clear that a system that perceives itself as scientific can consider non-scientific systems as inferior in our cultural milieu (Cassidy, Clair Monod, in Micozzi, 1996, 30).

Cassidy again proves this point through examples (ibidem, 31-2): The biomedical model assumes diseases to be fully accounted for by deviations from the norm of measurable biological (somatic) variables. It leaves no room within its framework for the social, psychological and behavioural dimensions of illness. The biomedical model has thus became a cultural imperative, its limitations easily overlooked. In brief, it has now acquired the status of a dogma. In science, a model is revised or abandoned when it fails to account adequately for all the data. A dogma, on the other hand, requires that a discrepant data be forced to fit the model or be excluded.

The myth behind this assumption is to be noted carefully. In the scientific medicine itself, only 30% of data is scientifically experimental, and full 70% of practice uses the same well-developed clinical observation skills and experience guided by explanatory model that powers the other health care systems. A real scientist will understand that a great deal of argument over which systems are model or alternative is really based on a cultural turf, and on the virtue of one's own values.

b. Magic bullets very often miss the mark

The history of medicine tells us that in earlier times medicines were prepared from natural sources. All medicines were natural products. Only recently did the quest for 'magic bullet therapy come into prominance and monotherapy come into existence. The obvious advantages are the single substances can be analyzed for purity and pharmacological activity besides unfolding the structure, activity and relationship. In many parts of the world, plant extracts continue to be the the source of medicine due to economic, cultural and other reasons. But in the present age, with an increasing concern for environment, plant medicines, natural products, unlike semi-synthetic, are the only renewable resources.

There is a strong ground for the need for medicines from natural products. If the therapeutic target is identified in terms of causative organism or a pathological damage, monotherapy appears to be a rational approach. But if the disease is caused by malfunction of complex body systems, which is so on many occasions, it is essential to
frame an attack on several fronts. This multi-pronged approach has been one of the key points in formulating a medicinal preparation.

Individual plants with multiple active components, and formulations with poly-herbal ingredients have been used for such an approach. Since mankind has been exposed to plant medicine through the ages, a person will be able to tolerate low doses without any adverse effect as compared to a relatively high concentration of single chemical substance. The process of discovering the drug from a plant to the isolations of the new compound has changed drastically its methods of application, tolerance and side-effects. Yet, the composite state of their administration (Ayurveda News. Oct. 1998. 1). The above facts show that the effective single bullet theory is not so scientific as to hold it as the absolute truth. It can be held as a partial truth (Mathew Fomey et al., 2002, 36-46).

If the body heals itself, has its own energy, and is uniquely individual, then the focus is not on the healer but on the healed. The change in emphasis on the whole person as a unique individual provides a new challenge to the scientific dimension of the healing encounter. It should result in a Copernican revolution in medicine. Ptolemaic geocentric theory was replaced by Copernican heliocentric theory. In medicine, physician-centric practice must be replaced by patient-centric practice.

5. **Bacteria resist, chronic conditions persist; Focus on disease, not on the person**

Several decades ago, however, consumer confidence in conventional medicine began to show signs of waning. Reports on the side-effects and inadequacies of widely-used drugs started coming up. New strains of bacteria that were resistant to the first “magic bullet” antibiotics suddenly emerged. Moreover, the use of new and more powerful antibiotics eventually resulted in microbes that could thwart them also. Another grave situation arose: arthritis, allergies, hypertension, cancer, depression, cardiovascular disease, digestive problems, and other chronic conditions replaced the infectious diseases as major killers and cripplers. And, biomedicine could not answer to it properly (Brain M. Berman et al. Eds. 1992, xxxviii; Tom Mc NICHOL, 1996,4). As longevity increased chronic diseases multiplied.

Allopathic medicine also struggles with chronic physical disease. Based on the belief that a disease, once established, follow an inexorable path of steady deterioration, the allopathist seeks to alleviate symptoms for as long as possible, charting the downward progress and deciding when heroic measures are to be called for in a last minute dash to save the patient's life. In its preoccupation with physical disease, allopathic medicine does not adequately address the mental emotional and spiritual needs of its patients. It will address an organic mental disease to which is can give a psychiatric label, but not a mental, emotional, or spiritual disease, which is largely viewed as irrelevant or, at best, insoluble and not part of the allopathic practitioner's realm. These limitations of allopathic medicine have led many individual to seek alternative approaches. The basis of allopathic and parallel medical systems are not mutually exclusive on a philosophical, practical, or
mechanistic level (Walkins Alan D., 1996, 50; Rangwani, SB., 1996, 9; Tom McNICHOL, 1996, 4-5).

It is to be noted that other western health care systems literally originated in reaction to biomedicine (allopathy) including homeopathy, osteopathy, naturopathy, chiropractic and Christian Science. Chinese Medicine and Ayurveda have been imported to Europe and America as a reaction to the inadequacy of the scientific medicine.

Now, many doctors are looking into the link between spirituality and healing because their patients believe in religions's power to cure. Deepak Chopra (Quantum Heading) Jon Kabat-Zinn (Wherever You Go, There You Are and Full Catastrophe Living, Bill Moyers PBS series and book Healing and Mind and Larry Dossey, former physician and author of the book Healing Words: The Power of prayer and Practice of Medicine have increased the interest of the people in religion and cure. Ultimately, medicine is concerned with what works, even if science cannot fully explain why (TOM McNICHOL, 1996,5).

For long, placebos have been used in pharmaceutical experiments to know whether or not the chemicals, in particular, drugs are having a beneficial effect. But new research show that when somebody experiences a placebo effect, the person's own endorphins, dopamine, serotonin and norepinephrine—are doing something for him as consequence of a caring and healing act and his belief that he is getting better. In his best seller, Ageless body, timeless mind (Rider) Deepak Chopra draws attentions to the fact that placebos can be used to kill pain, stop excess gastric secretions in ulcer patients, lower blood pressure and achieve a host of other positive physiological changes. But on the flip side, all the side-effects of chemotherapy can be induced in a cancer patients by giving them a sugar pill. Since the same inert pill can been given the appropriate suggestions (Rangwani, BS, 1996,9). Religion, good patient-doctor relation virtuous dealings etc. can also produce healing effects as we have seen above. After all medicine is human.

5. Latrogenesis

Biomedicine has no remedy for so many sicknesses and the so-called remedies often boomerang on the patients and even kill them. Unpredictable reactions occur. Very often, what it gives is not a cure but dependence on it for life. Worse s till is the iatrogenesis. Latrogenesis is the sickness caused by the action or words of the physician. Medicalized health care has become an obstacle to a healthy life. Firstly, there is the clinical iatrogenesis which results when organic coping capacity is replaced by heteronomous management, secondly, there is social iatrogenesis in which the environment is deprived of those conditions that endow individual, families, and neighborhoods with control over their own internal states and over their melicu. And, thirdly we have cultural iatrogenesis which represents a third dimension of medical health denial. It sets in when the medical enterprise saps the will of the people. Professionally organized medicine has come to function as a domineering moral enterprise that advertises industrial expansion as war against all suffering(Ivan illich,1977,133). The
medicine taken to cure one disease may cure it but may destroy some other organs. Sometimes, the patient goes to a doctor who is more dangerous than his own sickness. People become frustrated with biomedical therapies because of complexity, discomfort, bewildering technology and for some condition has little to or nothing to offer.

Biomedical is advertised as a technique that cues all pains. It takes away the meaning of suffering in the cultures. Cultures are systems of meaning. Cosmopolitan civilization is a system of techniques. Culture makes pain tolerable by integrating it into a meaningful setting. Cosmopolitan civilization detaches pain from any subjective or intersubjective context in order to annihilate it. Culture makes pain tolerable by interpreting its necessity; only pain perceived as curable is intolerable. Man is made frantic by the biomedical advertisement. In emergencies and traumatic conditions, biomedicine works well in chronic pain situations, biomedicine usually fails (Ivan illich, ibidem, 140-41).

Substandard medicines are circulated in the market and doctors prescribe them based on the information given by the medical representatives who do not always give adequate and correct information. There are over six thousand banned medicines in the market. According to WHO’s report (1994) just 200 drugs will take care of most of our ailments. Doctors prescribe unnecessary medicines for which they get a commission. They prescribe costly tests for which they get a cut. There are cases of disastrous medical negligence. Some diseases will get cured without treatment and some diseases will take time to get cured. Our health is in our own hands (Paul, O.J. 1998. 36-37). But the allopathic practitioners have made it in the specialists hands.

**h. Biomedical prowess**

There is no doubt that biomedicine is unequalled as regards its ability for curing many physical ailments, particularly those related to trauma, end-stage disease and so on. And also as emergency medicine. However, it is less effective in preventing the development of a disease, in altering the course of chronic physical disease, and in addressing the mental, emotion and spiritual needs of an individual. The biomedical model of illness used by allopathic practitioners largely concerns itself with physical disease—the more advanced, the clearer. Biomedicine finds it very difficult to invest time and resources in prevention partly because prevention is so difficult to measure. If a disease is prevented by a certain intervention, does it mean that the intervention has prevented the disease, or that the disease simply did not occur as expected?

7. **No prevention**

Allopathic efforts have focused on screening programmes designed to detect early disease such as cervical smear programmes, mammography clinics, and cholesterol and blood pressure checks rather than on primary prevention. The non-specific symptoms and signs that are the frequent forerunner of many major diseases are given less attention.

**j. Meaning and reality**
Just as a house is made up of bricks, science comprises a number of facts. The bricks alone do not make the house a reality any more than facts make science a reality. Both must held together— in the case of the house, by mortar and steel, and in the case of science by theory and interpretation. Facts usually are elicited to support a theory rather than to be independent of it. In this respect, scientific reality is relative. Theories and facts on which health care systems are based change across different cultures. Just as there area differences in architectural interpretation there are differences in factual interpretation. Thus symptoms and signs are interpreted differently depending the underlying culture of each society. Allopathic medicine tends to deny the existence of these multiple realities, perceiving itself as the only true reality, and the only reality based on scientific fact. However the briefest study of the history of western b science and medicine reveals that even the facts that allopathy claims as reality are constantly changing (Walkins, Alan K. 1996, 50-51)

12. Medical cost and availability and accessibility demand that different systems are resorted to for medical needs.

Basic human rights are those that help one to maintain as well as enhance one's health physical mental and psychological. For millions of people, human rights mean social, political and judicial rights. Rights regarding health are often neither asked for nor adhered to. In the absence of health, other rights may not help in improving one's life. Taking into consideration this main pint, the United Nations(UN) stated that every person has a right to a standard of living which keeps him and his family healthy ( Alma Ata ddeclaration, 1974). This well-being can be attained with adequate food, clothing, shelter medical and other social services. Social security should also be made available when one loses his/her livelihood due to disability, sickness, old age or any other circumstance beyond a person's control (Giridhar D., 1998,37).

Human rights are often seen from the perspectives of the Western affluent nations and according to the vision of the rich and the powerful. Even when they speak of the human rights, the underlying motive is exploitation. Conventionally, human rights are understood as rights of the individual against the state. Human rights men maintenance of civil and democratic rights.

The most important part of human right is the right to be a human. To be human, you should have he basic human needs met. We need food, health, clothing, shelter and education. When these are denied we cannot be a human. Where then are the human rights? Other freedoms like freedom of speech, sharing of the political process and so on become meaningless unless the basis human needs are met. Poverty is the most important factor which produces ill-health and denial of human rights. Three-hundred- and fifty million people in the world live below the poverty line and in destitution. They are denied the right to have a decent living. Others continue to live a sub human life waiting for death to relive them of the misery. Poverty is the worlds most ruthless kill. It is the cause of deduced life-expectancy, disability and starvation. Poverty deprives people of nutritious
food, proper environment and education. Poverty causes ill-health, and ill-health comes from poverty. Uncontrolled increase in population and unbridled political corruption together increase the misery. Within four decades, the world population has doubled to six billion. Most of this population growth is taking place in the world’s poorest and least-prepared countries, and the fastest growing regions are sub-Saharan Africa and parts of south Asia and Western Asia. Eighty percent of population now live in the developing countries. Nearly three-fifth lack basic sanitation and almost a third have no access to water, a quarter do not have adequate housing and a fifth have no access to modern health facilities (State of the World Population, 1999, United Nations Population fund release, October 12th 1999; Hegde, B.M., 2000,2).

a. Interface between Alternative and Conventional Medicine:

There are cases where in the distinction between conventional and alternative is not clear-cut. What is a fringe therapy today may become a main stream one tomorrow. Whatever treatment that works well would triumph over the other which does not work so well. The day may come when holistic will take over the non-holistic.

b. Multiple use of the same medicine in different systems and in the same system.

There is a chance for alternative use of one and the same medicine in different systems: e.g. gold in Ayurveda has different uses than the gold in Homeopathy. In Homeopathy, a drug that causes fever in a particular potency, if used in another potency can cure fever. The medical man will be ready to consult the local medical practitioners about their use of local medicine. Each system will grow with additional subjects in it; e.g. The Ayurveda started with tridoshas and later added to it the raktadosha and again later vishatantra.

I. The necessity of Knowledge of different systems and treatment

Considering the vast changes taking place in the medical systems and new kinds of health problems we are facing, everybody needs to become aware of all the possible types of treatment available (Michael Cirigliano, JAMA 280, Nov. 11, 1998;David M. Studdert, JAMA 280, (18) Nov.11,1998). Since no single system of medicine can work for everybody, the knowledge of the choices available will expose us to multiple perspectives. Such an awareness is a must to make the right choice regarding the right system of medicine for one’s treatment; be it Allopathy, Ayurveda, Unani, Siddha, Homeopathy and so on. (Staff reporter, times of India, Pune time. 15th April, 199, p.3). The future of the health care is now tilting away from hard-core allopathy and looking for a suitable combination of the best of allopathy and parallel medical systems. The consequence of such an alternative system:newer research fields newer vistas of medicine will be opened up. The interrelationship between different systems of medicine will be clearly know. The integrated medical system will enable us to utilize natural resources available on the earth for preventive and curative purposes. We well have more than one medicine for each sickness and we will get a chance for making a choice of medicine for our maladies.
I. INTRODUCTION

Pandemics and epidemics have devasted millions since prehistoric times. So emergence of any newly identified disease sends an alarm all over the world. About thirty new agents causing various diseases have been identified in the past twenty-five years of which Human immunodeficiency Virus (HIV) has been declared as the most threatening one. Infection by this virus is understood to be the basic cause of the pandemic of modern times namely Acquired immune Deficiency Syndrome (AIDS). It poses unprecedented challenges to the humankind and efforts to control this infection have achieved only limited success. HIV has infected an estimated forty million people all over the world. In the year 2000 alone a total of 5.3 million were infected with HIV worldwide.

2. AIDS MAP OF INDIA

Sub Saharan Africa is the epicenter of the AIDS quake. But India is one of the two countries with the highest number of HIV carrier. It is estimated that about four million Indians carry HIV in their blood. Among the Indian states Maharashtra has the highest number of HIV-positive people. The situation is equally worse in Tamil Nadu, Andhra Pradesh, Karnataka and Manipur. In these five states the ration of HIV carries among pregnant women is more than one percent. In Gujarat and Goa, incidence of HIV infecting among the high-risk groups (people who have more sexual partners and Union Territories HIV carriers among the high-risk groups constitute less than five percent.

In Mumbai metropolis HIV carriers among commercial sex workers (CSWs) come to 58.67 percent; it is 33.33 among those who come to Sexually Transmitted Disease (STD) clinics; 23.94 among males having sex with males (MSMs); 23.68 among intravenous drug users and 2 percent among women coming to antenatal clinics (ANCs).

Among STD clinic attendees HIV prevalence is 30% in Andhra Pradesh, 18.40% in Maharashtra; 16.80% in Tamil Nadu, 12.80% in Karnataka 12.02 in Goa and 11.60 in Manipur. Among IVDUs, Manipur has the highest number of HIV carriers accounting to about 64.3%. It is 26.70 in Tamil Nadu 9.61 in Mizoram and 7.03 in Nagaland. The National AIDS Control Organization (NACO), the apex body for controlling AIDS in India has reported a high incidence (8.2%) of HIV positive among healthy blood donors on some urban areas.

3.0 KERALA SCENARIO

AIDS Surveillance Centre at Microbiology Department in Medical College Thriruvananthapuram started functioning from September 1986. The centre compiled data available and put forward suggestions for control measures. Their studies showed that the pandemic has not spared Kerala and that the number of HIV carriers and AIDS patients...
are steadily increasing in the state as elsewhere. Modes of transmission of the virus were worked out. About 96.7% of HIV infection occurs through unsafe sexual relations. Blood bone infections constitute about 2.6%. perinatal transmission is only about 0.7%. analysis of the occupational status of the HIV positives revealed that all sections of the society have infected individuals. Manual labourers, unemployed youth, drivers, diamond polishers, carpenters, masons, plumbers, hotel employees, mechanics, sales girls, house maids, students, teachers, health care workers, engineers, police and defence personnel, businessmen, administrators and even religious/community leaders are among those who were infected. Majority of them got infected outside the state. Such men come back, get married and pass on infection to their wives and through them to the newborns. Infections among housewives increased from 13% in 1995 to 16.2% in 1996 and to 20.1% in 1997.4. More than 90% of the infected housewives of Kerala have received HIV from their own husbands.

3.1 HIV POSITIVES AMONG BLOOD DONORS and BLOOD SAFETY.

The supreme court of India delivered a judgement in January 1996 whereby the blood transfusion services are receiving adequate attention. The Government of India revamped and reorganized the services. All blood banks in India are modernized and licensing rules are strictly implemented. Many blood banks of Kerala(mostly those attached to government hospitals) began sending anonymous information to Kerala AIDS Control Society (KSACS) about the number of HIV positive people among voluntary blood doners as revealed by primary screening tests. This data tabulated district wise led to the belief that Thrissur and Thiruvananthapuram districts have a higher number of HIV carriers in the state. (See table 1). Though this cannot be denied, such statements are not supported by scientific studies. More HIV carriers are identified in districts having more blood banks. Also, KSACS does not receive information from all blood banks regularly. Increase in the number of HIV carriers found among voluntary blood donors need not necessarily be an index of increasing infections in the state and many of them might have been infected far earlier and are in the asymptomatic phase.

The different in the ratio of HIV carriers among voluntary blood donors and replacement doners is striking. It is less than 1.8 per thousand among voluntary donors while the figure is more than six per thousand among replacement donors. All blood donors considered together, the ratio of HIV positives come to 4.6 per thousand(see table 2). The higher ratio of HIV positives among replacement donor as compared to voluntary donors needs some clarification. Replacement donors are mostly relatives of patients who are often asked to bleed by hospital authorities. Blood banks usually do not accept blood from professional donors. But this investigator came to know about instances of relatives of patients bringing even former prison inmates and known depredators for bleeding who were typed HIV positive. At present voluntary donations constitute less than 35% of the total blood collected in Kerala (see table 3).
This author collected data about the number and ratio of HIV positives among blood donors of Thrissur, Palakkad and Malappuram districts (see table 5). Thirteen blood bank of Thrissur, three blood banks of Malappuram and the only one blood bank of Palakkad districts cooperated with the study (Thrissur district has 17, Malappuram has 3 and Palakkad has only one licensed blood bank). The ratio of HIV positives is found to be 0.28, 0.90, and 0.31 percent in Thrissur, Palakkad and Malappuram districts (three times than the average) needs careful scrutiny. The ratio is actually 0.91 among male donors tested. All the voluntary donors found to be HIV positive are males. Anecdotal evidences received from a private hospital of Thrissur town where patients from villages of Palakkad district bordering Tamil Nadu regularly come for treatment indicate that there are very high percentage of tuberculosis patients (a major opportunistic infection) and HIV carriers among them.

There is slight disparity in the figures regarding the number of voluntary donors and ratio of HIV positives among them between tables 4 and 5. This disparity points towards the necessity of a more honest and effective records keeping and reporting systems. This investigator found that blood banks attached to some private hospitals do not send any data to the AIDS Control Society of Kerala. Some of the hospitals in the private sector do not even maintain any anonymous data regarding the number of units of blood tested or the number of HIV positives among them. Employees of government and private hospitals and blood banks should be sensitized about the importance of keeping, organizing summarizing and reporting honest data, the analysis of which is essential for drawing valid conclusions and for making reasonable policy decisions. As seen in the tables 3, 4 and 5, the percentage of HIV positives among blood donors is anywhere between 0.30 and 0.41. males of the age group 18 to 50 usually from the blood donors. If blood donors can be considered as a random sample, it can be reasonable concluded that out of one thousand males 3 to 4 have HIV in their blood. These findings, however are not confirmed by Western Blot.

Every unit of blood is subjected to preliminary screening for HIV, Hepatitis B (HBs Ag). Hepatitis C (HCV), Syphilis (VDRL) and Malaria. The table 6 reveals that prevalence of Hepatitis B Virus infection is far higher (almost thrice) than HIV infection. About 0.2% blood samples are VDRL+ve. Almost 1.5% of blood units collected are destroyed in blood banks, as they are found contaminated. This investigator came to know that some private hospitals in Thrissur district started screening blood for Hepatitis C years before the directive from government. Out of 703 blood units screened blood for Hepatitis C years before the directive from government. Out of 703 blood units screened till August 2001 for HCV in the only blood bank of Palakkad district, 1(0.14%) was found to be positive. Also, out of 38676 units of blood screened for HCV, in the years 1995 to and 2001 in blood banks of Thrissur district, 109(0.28%) were found to be positive (see table 7). As hepatitis B and C infections render the individuals very susceptible to cancer in liver, this problem should receive serious attention of health workers and the state.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trivandrum</td>
<td>222</td>
<td>76</td>
<td>69</td>
<td>51</td>
<td>22</td>
<td>54</td>
<td>28</td>
<td>128</td>
<td>650</td>
</tr>
<tr>
<td>Kollam</td>
<td>15</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>12</td>
<td>5</td>
<td>27</td>
<td>67</td>
</tr>
<tr>
<td>Pathanamthitta</td>
<td>3</td>
<td>11</td>
<td>9</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>Alappuzha</td>
<td>3</td>
<td>17</td>
<td>6</td>
<td>22</td>
<td>10</td>
<td>13</td>
<td>105</td>
<td>11</td>
<td>187</td>
</tr>
<tr>
<td>Kottayam</td>
<td>33</td>
<td>18</td>
<td>11</td>
<td>67</td>
<td>48</td>
<td>18</td>
<td>59</td>
<td>60</td>
<td>314</td>
</tr>
<tr>
<td>Idukki</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<td>2</td>
<td>22</td>
<td>57</td>
<td>38</td>
<td>233</td>
</tr>
<tr>
<td>Thrissur</td>
<td>231</td>
<td>140</td>
<td>103</td>
<td>21</td>
<td>15</td>
<td>10</td>
<td>109</td>
<td>10</td>
<td>639</td>
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<tr>
<td>Palakkad</td>
<td>15</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>10</td>
<td>7</td>
<td>13</td>
<td>55</td>
</tr>
<tr>
<td>Malappuram</td>
<td>3</td>
<td>9</td>
<td>21</td>
<td>35</td>
<td>44</td>
<td>32</td>
<td>37</td>
<td>15</td>
<td>196</td>
</tr>
<tr>
<td>Kozhikode</td>
<td>432</td>
<td>29</td>
<td>16</td>
<td>23</td>
<td>6</td>
<td>8</td>
<td>29</td>
<td>38</td>
<td>572</td>
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<td>Wayanad</td>
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<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Kannur</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>1</td>
<td>21</td>
<td>99</td>
<td>35</td>
<td>177</td>
</tr>
<tr>
<td>Kasaragod</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>14</td>
<td>11</td>
<td>43</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1000</td>
<td>354</td>
<td>277</td>
<td>238</td>
<td>157</td>
<td>210</td>
<td>565</td>
<td>395</td>
<td>3198</td>
</tr>
</tbody>
</table>

TABLE 2
HIV POSITIVE AMONG VOLNTARY AND REPLACEMT BLOOD DONORS
### TABLE 3
PROPORTION OF VOLUNTARY & REPLACEMENT BLOOD DONORS IN KERALA
(Courtesy: Kerala State AIDS Control Society)

<table>
<thead>
<tr>
<th>Year</th>
<th>Blood Donors</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Voluntary</td>
<td>Replacement</td>
</tr>
<tr>
<td>2000</td>
<td>50385(36.41%)</td>
<td>88000(63.59%)</td>
</tr>
<tr>
<td>2001</td>
<td>37369(32.70%)</td>
<td>76896(67.30%)</td>
</tr>
<tr>
<td>Total</td>
<td>87754(34.73%)</td>
<td>164896(65.27%)</td>
</tr>
</tbody>
</table>

### TABLE 4
HIV POSITIVE AMONG VOLUNTARY BLOOD DONORS OF THRISSUR, PALAKKAD AND MALAPPURAM DISTRICTS

<table>
<thead>
<tr>
<th>Year</th>
<th>THRISUR</th>
<th>SUR</th>
<th>PALAK</th>
<th>KAD</th>
<th>MALAP</th>
<th>PURAM</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>526</td>
<td>1</td>
</tr>
<tr>
<td>1995</td>
<td>742</td>
<td>9</td>
<td>0.12</td>
<td>---</td>
<td>---</td>
<td>395</td>
<td>1</td>
</tr>
<tr>
<td>1996</td>
<td>374</td>
<td>3</td>
<td>0.08</td>
<td>---</td>
<td>---</td>
<td>687</td>
<td>7</td>
</tr>
<tr>
<td>Year</td>
<td>District</td>
<td>Sample</td>
<td>HIV+ %</td>
<td>Sample</td>
<td>HIV+ %</td>
<td>Sample</td>
<td>HIV+ %</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>1997</td>
<td>Thrivandrum</td>
<td>2289</td>
<td>0.24</td>
<td>21060</td>
<td>0.13</td>
<td>18677</td>
<td>0.69</td>
</tr>
<tr>
<td>1998</td>
<td>Kollam</td>
<td>5197</td>
<td>0.23</td>
<td>6872</td>
<td>0.07</td>
<td>7192</td>
<td>0.38</td>
</tr>
<tr>
<td>1999</td>
<td>Pathanamthitta</td>
<td>1121</td>
<td>0.16</td>
<td>6777</td>
<td>0.12</td>
<td>841</td>
<td>0.12</td>
</tr>
<tr>
<td>2000</td>
<td>Alappuzha</td>
<td>3162</td>
<td>0.41</td>
<td>6524</td>
<td>0.61</td>
<td>4076</td>
<td>0.27</td>
</tr>
<tr>
<td>2001upto</td>
<td>Kottayam</td>
<td>8929</td>
<td>0.2</td>
<td>16717</td>
<td>0.35</td>
<td>12393</td>
<td>0.48</td>
</tr>
<tr>
<td>sept.30</td>
<td>Idukki</td>
<td>---</td>
<td>---</td>
<td>1106</td>
<td>0.09</td>
<td>210</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**TABLE 5**
KERALA STATE AIDS CONTROL SOCIETY
BLOOD SCREENING REPORT 1999-2000

**Table notes:**

- The table presents the blood screening report for the years 1997 to 2000 by district.
- For each district, the table shows the total number of sample taken, the percentage of HIV positive cases, and the total number of HIV positive cases.
- The data includes districts such as Thrivandrum, Kollam, Pathanamthitta, Alappuzha, Kottayam, and Idukki.
- The percentage of HIV positive cases ranges from 0.07% to 0.94%.
- The total number of HIV positive cases ranges from 1 to 137 cases.
- The table provides a comprehensive overview of the blood screening report for the specified period.
<table>
<thead>
<tr>
<th>Ernakulam</th>
<th>7071</th>
<th>22</th>
<th>0.31</th>
<th>31685</th>
<th>57</th>
<th>0.18</th>
<th>24846</th>
<th>38</th>
<th>0.15</th>
<th>63602</th>
<th>117</th>
<th>0.18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrisur</td>
<td>1899</td>
<td>10</td>
<td>0.53</td>
<td>11839</td>
<td>109</td>
<td>0.92</td>
<td>10672</td>
<td>10</td>
<td>0.09</td>
<td>24410</td>
<td>129</td>
<td>0.53</td>
</tr>
<tr>
<td>Pallakkad</td>
<td>396</td>
<td>10</td>
<td>2.53</td>
<td>703</td>
<td>7</td>
<td>0.1</td>
<td>769</td>
<td>13</td>
<td>0.89</td>
<td>1868</td>
<td>30</td>
<td>1.17</td>
</tr>
<tr>
<td>Mappuram</td>
<td>8272</td>
<td>32</td>
<td>0.39</td>
<td>7657</td>
<td>37</td>
<td>0.48</td>
<td>7284</td>
<td>15</td>
<td>0.21</td>
<td>23213</td>
<td>84</td>
<td>0.34</td>
</tr>
<tr>
<td>Kozhikode</td>
<td>9047</td>
<td>8</td>
<td>0.09</td>
<td>16499</td>
<td>29</td>
<td>0.18</td>
<td>17784</td>
<td>38</td>
<td>0.21</td>
<td>43330</td>
<td>75</td>
<td>0.17</td>
</tr>
<tr>
<td>Wayanad</td>
<td>3278</td>
<td>2</td>
<td>0.06</td>
<td>1546</td>
<td>4</td>
<td>0.26</td>
<td>1441</td>
<td>10</td>
<td>0.69</td>
<td>6265</td>
<td>16</td>
<td>0.26</td>
</tr>
<tr>
<td>Kannur</td>
<td>3366</td>
<td>21</td>
<td>0.62</td>
<td>8492</td>
<td>99</td>
<td>1.17</td>
<td>7594</td>
<td>35</td>
<td>0.46</td>
<td>19452</td>
<td>155</td>
<td>0.8</td>
</tr>
<tr>
<td>Kasaragod</td>
<td>746</td>
<td>8</td>
<td>1.07</td>
<td>908</td>
<td>14</td>
<td>1.54</td>
<td>486</td>
<td>11</td>
<td>2.26</td>
<td>2140</td>
<td>33</td>
<td>1.54</td>
</tr>
<tr>
<td>Total</td>
<td>7538</td>
<td>21</td>
<td>0.28</td>
<td>13838</td>
<td>5</td>
<td>0.41</td>
<td>11426</td>
<td>397</td>
<td>0.33</td>
<td>32803</td>
<td>117</td>
<td>0.36</td>
</tr>
</tbody>
</table>

**TABLE 6**

**BLOOD SAFETY IN KERALA**

(MODIFIED AFTER KSACS)

<table>
<thead>
<tr>
<th>Year</th>
<th>HIV +ve</th>
<th>HbsAg +ve</th>
<th>VDRL +ve</th>
<th>Malaria +ve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>210(0.28%)</td>
<td>913(1.21%)</td>
<td>215(0.29%)</td>
<td>6</td>
</tr>
<tr>
<td>2000</td>
<td>565(0.41%)</td>
<td>1239(0.90%)</td>
<td>249(0.06%)</td>
<td>30</td>
</tr>
<tr>
<td>2001</td>
<td>397(0.35%)</td>
<td>962(0.84%)</td>
<td>179(0.16%)</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>1172(0.36%)</td>
<td>3114(0.93%)</td>
<td>643(0.20%)</td>
<td>44(0.01%)</td>
</tr>
</tbody>
</table>

**TABLE 7**

**HEPATITIS C POSITIVES AMONG BLOOD DONORS OF THRISUR**

<table>
<thead>
<tr>
<th>Year</th>
<th>Blood units tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>385</td>
</tr>
<tr>
<td>1996</td>
<td>2990</td>
</tr>
<tr>
<td>1997</td>
<td>3610</td>
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<td>1998</td>
<td>6114</td>
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<td>1999</td>
<td>10687</td>
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<tr>
<td>2000</td>
<td>11898</td>
</tr>
<tr>
<td>2001</td>
<td>3001</td>
</tr>
<tr>
<td>Total</td>
<td>38676</td>
</tr>
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</table>
3.2 HIV POSITIVES AMONG ANTENATAL CASES

A few hospitals screen all antenatal cases. Data collected from six such hospitals of Thrissur district revealed that 8 out of 7242 (ie, 0.11%) pregnant women subjected to primary screening test (ELISA/SPOT) during the years 1998 to 2000 are HIV positive. Husbands of all these women were found to be seropositive. 5(0.069%) were found to be VDRL+ve. 26(0.36%) were found to be Hbs Ag positive. Data borrowed from six hospitals of Thrissur district where antenatal women are screened for Hepatitis C infection reveal that 11(0.19%) out of 5787 cases are positive (see table 8).

HIV POSITIVE AMONG PATIENTS SCREENED BEFORE SURGERY

Some hospitals insist on screening all patients before major surgery. Data received from six such hospitals of Thrissur district shows that 10(0.14%) out of 7075 such cases during the years 1999 to 2000 were found to be seropositive. 8(0.11%) were found to be VDRL+ve and 28(0.40%) were HbsAg positive. Six hospitals where patients were screened for Hepatitis C reveal that 12(0.21%) out of 58.38 cases are positive (table 8).
### TABLE 8
SUMMARY OF FINDINGS OF SCREENING OF ANATENATAL AND SURGERY CASES

<table>
<thead>
<tr>
<th>Category</th>
<th>Preliminary Screening</th>
<th>Number of people Tested</th>
<th>Positive Number</th>
<th>Cases Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenatal Cases</td>
<td>HIV</td>
<td>7242</td>
<td>8</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>VDRL</td>
<td>“</td>
<td>5</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>HbsAg</td>
<td>“</td>
<td>26</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td>HCV</td>
<td>5787</td>
<td>11</td>
<td>0.19</td>
</tr>
<tr>
<td>Surgery Cases</td>
<td>HIV</td>
<td>7075</td>
<td>10</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>VDRL</td>
<td>“</td>
<td>8</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>HbsAg</td>
<td>“</td>
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</tr>
<tr>
<td></td>
<td>HCV</td>
<td>5838</td>
<td>12</td>
<td>0.21</td>
</tr>
</tbody>
</table>

### 3.4 HIV POSITIVES AMONG STD PATIENTS

Patients with sexually transmitted diseases (STDs) are universally considered as belonging to the high-risk group. Among 121 STD patient who sought services of five private hospitals of Thrissur district in 2000 the number of seropositive HIV cases were 17(14.04%).

### 3.5 HAEMOPHILIACS

Transmission of HIV through blood and blood products such as plasma factor preparations, fresh frozen plasma, and cryoprecipitate has been well documented. Many haemophiliacs and other patients with bleeding disorders acquire the virus prior to 1985 through contaminated blood and/or blood products. This led to deterioration of their life span of all over the world. This investigator tried to get information about HIV positives among patients registered with two Haemophilia Chapters of central Kerala. It was found that these two chapters have altogether ten HIV positives of whom eight have passed away. Three deaths occurred due to full-blown AIDS; one death was due to trauma associated with the disability of haemophilia and another death occurred in an accident. This investigator offers counseling services to the widow of a haemophiliac who died of AIDS. At the time of preparing this paper one of the infected hemophiliacs is bedridden and another with one leg amputated has already crossed the asymptomatic phase. A patient with von Willebrand's disease is also found to be infected by the virus. It is not known whether these infection were all transmitted through blood transfusion. Many of them have received multiple transfusions and chances of infection from transfusion of contaminated blood from false negatives in window period cannot be ruled out.

Since 1985, all factor concentrates have undergone virus attenuation for HIV, as exposure to heat or addition of a solvent detergent to lyse the lipid membrane of HIV.
Recently recombinant factor VIII has also been approved for clinical use. These developments have essentially eliminated the risk of pathogenetic viral transfusion.

### 3.6. THE MUMBAI LINK

Studies at the Surveillance Centre of Medical College Thiruvananthapuram have shown as early as 1996 that infection acquired by Keralites from other states constitutes 74.7% of the total causes studied. A very high percentage of these infections took place at Mumbai. Thousands of Keralites migrate to and come back from Mumbai every month. The anonymity offered by metropolitan cities probably provides opportunities for high-risk behaviour. Infections of Keralites from Chennai, Namakkal (near Salem), Trichi, Goa, Meerut and Culcutta are known. Many infections acquired locally are also traceable to Mumbai. Majority of such infections is from husbands with a Mumbai link to their young wives in the state. A slight but noticeable change in the pattern of infection and cases of people acquiring HIV infection because of high-risk promiscuous behaviour within the state has caught the attention of physicians and counselors though an objective study to establish the same is yet to be done.

Out of 56 confirmed HIV positives who have sought counseling services from this author directly or through phone since 1994, 42 are men and 38 of them have stayed in Mumbai for months or years. This includes 6 people extradited from Gulf countries also. One of them is known to have received the virus from a deserted women who was married to a person employed in Mumbai. Of the remaining three male HIV positives, one had engaged in unsafe sexual relations in various places in Tamil Nadu and Karnataka. One had received multiple blood transfusions in 1992 and 1995 after two motorbike accidents; but he also revealed that he had unsafe sexual encounters. The remaining one is a case of infection acquired locally. Of the 14 women HIV positives, 12 received infection from their husbands who have travelled widely and all of them are known to have visited Mumbai. Such details of the remaining two cases are not known.

### 3.7 FEMALE SEX WORKERS

HIV infection among high-risk groups of Kerala is below a percent according to NACO. Data received from studies by family health International (FHI) appears to support this finding. The study covered 206 female sex workers (FSWs) in Thrissur, 120 in Kozhikode and 117 in Thiruvananthapuram. The ratio of HIV positives in Thrissur, Kozhikode and Thiruvananthapuram is found to be 3.88, 5.65 and 2.6 Percent respectively (See table 9). A few sex workers regularly visit doctors. But many prefer quacks. Some prefer to take 'medicines' bought through their caretakers.

#### TABLE 9

<table>
<thead>
<tr>
<th>Place of Study</th>
<th>No. of FSWs Tested</th>
<th>HIV-Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
HIV 2 INFECTION IN KERALA

Experts recognize two strains of HIV: HIV1 discovered in 1983, which is generally accepted as the cause of most AIDS cases of the world. In genetic terms HIV 2 is much more closely related to Simian Immunodeficiency Virus (SIV), a group of monkey viruses, than to HIV1. Both HIV1 and HIV2 may have been derived from SIV variants that were from distinct regions and species and do not appear to be direct descendant of each other. Clinically what has been learned about HIV1 appears to apply to HIV2 except that latter appears to be less harmful (cytopathic) to the cells of the immune system and it reproduces more slowly than HIV1.

HIV1 spreads strongly in humans than HIV2. Studies conducted in Dakar, Senegal, by the Harvard group have shown that under similar conditions, heterosexual spread of HIV2 is much slower than HIV1. HIV2 is less infections and much slower to cause disease. HIV2 was restricted mainly to West Africa, Angola and Mosambique but has now spread to other parts of the world. This author has made a small attempt to study the ratio of HIV2 infection in Kerala. As western Blot (WB) assays have the ability to identify and differentiate infections by both these types of viruses, a random sample of 383 cases confirmed by WB was studied. The sample included 291 males and 92 females. 357 cases including 269 males and 88 females were found to be infected by HIV1 only; 15 males and 4 women have both HIV1 and HIV2; 7 males had been infected by HIV2 only and no woman was found to be infected with HIV2 except along with HIV1. Out of the total sample 93.2% have HIV1 only; 1.8% has HIV2 only; the remaining 5% have HIV1 and HIV2. This observation confirms that transmission of HIV2 is slow in conditions existing in Kerala also (See table 10). Western Blot studies were not carried out to confirm these result.

TABLE 10
RATIO OF HIV 1 AND HIV 2 INFECTION IN KERALA
(All cases confirmed by Western Blot Studies and not by PCR)
Sex ratio of HIV positive of Kerala another important aspect that should not be ignored. This author analyzed the sex ratio of patients who were confirmed HIV positive be Western Blot in a laboratory in Kerala since 1994 (see table 11). Though this cannot be considered as a random sample, the study points to an increase in the ratio of women among the infected people. The ratio of women among HIV positives increased though not steadily from 16.7 to 36.4 percent between 1994 and 2001. The reason seems to be that more and more infected men get married and transmit the virus to their brides. The increasing HIV infection among women is an issue that should be addressed. In the social context of Kerala many women cannot persuade their promiscuous husbands to use condoms while having sex with them.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total number of Confirmed Cases</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>10</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>1995</td>
<td>62</td>
<td>2</td>
<td>60</td>
</tr>
<tr>
<td>1996</td>
<td>43</td>
<td>1</td>
<td>42</td>
</tr>
<tr>
<td>1997</td>
<td>37</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>1998</td>
<td>25</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>1999</td>
<td>46</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>2000</td>
<td>39</td>
<td>0</td>
<td>39</td>
</tr>
<tr>
<td>2001</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>269</td>
<td>7</td>
<td>262</td>
</tr>
</tbody>
</table>

up to November 30

3.9 SEX RATIO OF HIV POSITIVES

TABLE 11
SEX RATIO OF HIV CARRIERS.
(All cases confirmed by Western Blot Studies)
### 3.10 ECONOMIC DIMENSIONS

This investigator studied the age distribution of 710 HIV carriers of Kerala in 19998. The study is updated as given table 12. The study reveals the more than 45% of the HIV positives belong to the age group of 21-30 and that almost 40% belong to the age group of 31-40. About 95% of HIV positive come under the age group of 21-50, the economically most productive age group. An objective study of the economic impact of HIV infection in Kerala is yet to be done.

#### TABLE 12
AGE DISTRIBUTION OF HIV CARRIERS

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 10</td>
<td>7(0.77%)</td>
</tr>
<tr>
<td>11/20/11</td>
<td>31(3.43%)</td>
</tr>
<tr>
<td>21-30</td>
<td>408(45.08%)</td>
</tr>
<tr>
<td>31-40</td>
<td>358(39.56%)</td>
</tr>
<tr>
<td>41-50</td>
<td>92(10.17%)</td>
</tr>
<tr>
<td>51-60</td>
<td>6(0.66%)</td>
</tr>
<tr>
<td>Above 60</td>
<td>3(0.33%)</td>
</tr>
<tr>
<td>Total</td>
<td>905(100%)</td>
</tr>
</tbody>
</table>

### 3.11 AIDS WIDOWS AND AIDS ORPHANS

HIV infection has created a serious social problem of young widows and orphaned children in Kerala as elsewhere. In the social context of Kerala usually the husbands bring HIV into the family. Many infected men marry and pass of the virus to their young wives. The husbands pass away and are survived by the infected widows and one to three children some of whom are also infected. These AIDS widows and AIDS orphans (as some social scientists have started calling them) pose problems in several families.

This investigator could get the ages at which 82 women who were widowed because their husbands died of AIDS; 31 of them became widows at the age between 20-
25; and 26 widowed at the age between 26 and 39. 79.27 percent of the AIDS widows are below 31 years. 8 widows are below 20 and all of them belong to the northern district of Kerala. Girls are married off before 18 in some Moslem and Hindu communities in these districts and some of these girls get infected and became widows at such an early age. (See table 13)

The HIV infected widow along with her children usually joins her parents. Often husband's family rejects her. In some cases even when husbands family is ready to accept her and the children, the young widow finds herself at home only when she is with her parents. However, sister in laws at her parent's home sometimes resist this coming back. In one case the problem is still worse because the HIV positive widow is also a mental patient moved back to her family along with her child. These problems take their worst turn as these widows also die of AIDS. The aged maternal grand parents look after the grand children some of whom are HIV positive. In one such family ;in thrissur district this investigator often visits, the maternal grand parents aged eighty and seventy six and look after their two girl grand children aged eleven and nine; the elder girl is HIV positive, has palsy and several skin infections.

Widows who revive support and chiseling gain self-confidence. This investigator personally knows a widow now working as manager of a small business establishment. The owner of the firm does not know that his manager is HIV positive. Some of the widows have taken up jobs as assistant in various establishments and serve as typists, computer operators, photocopying machine operators, sales girls and accountants while others help in family business. There again problems arise when some of these young widows fall in love with some one. Parents and in-laws strongly reject the proposals. An instance in which as HIV positive widow has fallen in love with her late husband's younger brother created problems in a family. In another case an HIV positive widow is sexually attracted to her elder sister's husband who is an alcholic.

Activists in general encourage marriages between HIV positives. A few such marriages have taken place in Kerala. This includes marriages between individuals belonging to different religions, castes, languages, states and cultures. Activists have succeeded in counseling them about the importance of safe and non-procreative sex. Two such couples raised doubts about the necessity of safe sex between HIV positive husband and wife. They were counseled about the importance of avoiding transmission of different subtypes of the viruses including drug resistant forms between them and about the problems that may follow pregnancy and HIV transmission to new generation. The possibility that the couple may fade away leaving their children as orphans was also pointed out.

TABLE 13
AGE DISTRIBUTION OF HIV POSITIVE WIDOWS
(Age at which they became widows)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Group</td>
<td>Count (%)</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Below-20</td>
<td>8(9.76%)</td>
</tr>
<tr>
<td>21-25</td>
<td>31(37.80%)</td>
</tr>
<tr>
<td>26-30</td>
<td>26(31.71%)</td>
</tr>
<tr>
<td>31-35</td>
<td>9(10.98%)</td>
</tr>
<tr>
<td>36-40</td>
<td>5(6.10%)</td>
</tr>
<tr>
<td>41-45</td>
<td>2(2.44%)</td>
</tr>
<tr>
<td>46-50</td>
<td>1(1.22%)</td>
</tr>
<tr>
<td>Total</td>
<td>82(100%)</td>
</tr>
</tbody>
</table>

### 3.12 CONCLUSION

Keralites when faced with the problem of HIV/AIDS first reacted by denying the existence of the problem. The situation has changed as HIV cases were detected in all villages and towns. Poverty, unemployment, unrestricted urban growth, low status of women and labour mobility increase the exposure and vulnerability of several sections of the population.

**References:**

1. AIDS Epidemic Update, UNAIDS General 200.
7. Stine, J Geald, AIDS Update 1999;p.32.
SIDDHA MEDICINES ARE EFFECTIVE IN CONTROLLING HIV/AIDS - A REPORT
Dr. C.N. DEIVANAYAGAM. FRCP [EDIN.]
Health India Foundation, Chennai

SIDDHA SYSTEM OF HEALTHY LIVING AND DISEASE PREVENTION AND TREATMENT IS MORE THAN 5000 YEARS OLD. IT IS A PART OF THE ANCIENT HERBAL AND NATURAL SYSTEMS OF MEDICARE PRACTISED CONTINUOUSLY IN ASIA AND AFRICA.

IT IS A LIVING HERITAGE OF TAMILS AND SOUTH INDIANS [DRAVIDIANS]. SIDDHA PHYSICIANS HAVE TREATED HIV INFECTIONS AND DISEASE SINCE 1986 IN TAMIL NADU.

GOVERNMENT HOSPITAL OF THORACIC MEDICINE [TUBERCULOSIS SANATORIUM], TAMBARAM HAS BEEN COLLABORATING WITH SIDDHA PRACTITIONERS [BOTH TRADITIONAL AND DEGREE HOLDERS] SINCE 1992. THE RESEARCH IS CONTINUING.


THE WEST IS NOT CONVINCED

I. WEBER. R et al. UNIVERSITY HOSPITAL, ZURICH.
RANDOMISED PLACEBO CONTROLLED TRIAL OF CHINESE HERB THERAPY IN HIV-1 INFECTED INDIVIDUALS.
JAIDS 1999; 22(1): 56-64.
STANDARD PREPARATION OF 35 HERBS AND PLACEBO.
DURATION; 6 MONTHS
QOL, CLINIC MANIFESTATION, VIRAL LOAD AND CD4.
RESULT; NO DIFFERENCE BETWEEN THE GROUPS

II. BURACK.JH.et al. SAN FRANCISCO.
PILOT RANDOMISED PLACEBO-CONTROLLED TRIAL OF CHINESE HERBAL TREATMENT FOR HIV-ASSOCIATED SYMPTOMS.
RESULT: ALL SYMPTOMS IMPROVED EXCEPT DERMATOLOGICAL.

OUR REPORTED AND PUBLISHED EVIDENCE IS CONVINCING.

I. EVALUATION OF SIDDHA MEDICARE IN HIV DISEASE.
DEIVANAYAGAM. CH, KRISHANARAJASEKAR. OR,
RAVICHANDRAN. N. TAMBARAM
12 MONTHS TREATMENT FOR 16 HIV/AIDS PATIENTS:
11 WITH RASAGANDHI MEZHUGU,
AMUKKARA CHOORANAM,
NELLIKKAI LEHYAM.
PLUS OI DURGS
5 WITH OI DRUGS ALONE
SYMPTOMS IMPROVED IMMEDIATELY
WEIGHT GAIN-2.5 KG/MONTH [AVERAGE]
CH4 INCREASED. CD8 INCREASED AND VIRAL LOAD REDUCED AFTER 9
MONTHS [ON AVERAGE].
OI DRUG RECEIVERS SHOWED NO DECREASE IN VIRAL LOAD.
TWO OF THE FIVE SHOWED A SLIGHT INCREASE IN CD4 CELL COUNTS.

VARMA-MODIFIED ICE PACK METHOD
30 MINUTES TWICE DAILY FOR 80-100 SITTINGS.
ONE PATIENT DROPPED HIS VIRAL LOAD FROM 1.08.000 TO BELOW
MEASURABLE VALUES.
AVERAGE WEIGHT GAIN-2.4 KH/MONTH.

II. DR. ARUN KUMAR MYSORE.
EXPERIENCE WITH SIDDHA DRUGS IN HIV/AIDS WORKSHOP OF
HEALTHINDIA.OCT.2001.HIF.CHENNAL.PAGES 57-77.
6 PATIENTS RECEIVED DRUGS [HERBAL] FOR 80-120 DAYS.

VIRAL LOAD CHANGES
DS 155736-45941-18538-15359-NEGATIVE-25061
M 3467-29607-3467-2178-20-NEGATIVE-12212
SH-1 834-NEGATIVE
SU 75000-NEGATIVE-17696
R 44153-22616
SH-2 363249-NEGATIVE-32784

FALL IN VIRAL LOAD, NOTED FIRST
DS-22 MONTHS
M-19 MONTHS
SH-1-4 1/2 MONTHS
SU-18 MONTHS
R- 10 MONTHS
SH2-12 MONTHS
ALL REMAIN SYMPTOM FREE NOW. 2 TO 4 YEARS FOLLOW UP.

DR. S.S. SUBBAIYAN, PASUPATHIKOIL, THANJAVUR
100-200 DAYS OF:
CHITRA BALLATHI
AMUKKARA CHOORANAM
NARASINGHA LEHAYAM
NELLIKAILEHYAM

9 KG HAIN. NO SYMPTOMS. NO SIGNS FOR 21///2 YEARS.
SIDDHA DRUGS ARE SLOW TO ACT. EFFECTS REMAIN FOR LONG.
HERBAL DRUGS IN EUROPEAN CHILDREN
TANI, M., NAGASE,M., NISHIYAMO, T., YOMAMATO, T., MATUSA,R.
CHOHAKUKAI MEDICAL GROUP, TANI CLINIC, TOKYO.
AM J CHIN MED. 2002;30(1):51-64

THE EFFECTS OF LONG TERM HERBAL TREATMENT FOR PAEDIATRIC AIDS.
CONSTANTA, ROMANIA, “HOUSE OF TOMORROW”.
DURATION OF TREATMENT-8 YEARS AND 8 MONTHS
9 OUT OF 10 PATIENTS-HIV RNA DROPPED BELOW MEASURABLE LEVEL.
CD4 COUNTS PRESERVED AND INCREASED.
REMARKABLE DECREASE IN MORTALITY.
GOOD QOL MAINTAINED.
1-3 YEARS FOR BENEFICIAL EFFECTS TO EMERGE.
NO EMERGENCE OF DRUG RESISTANT HIV.

ARE THERE HEAVY METALS IN CHINESE DRUGS?
KANG, LY. Et al. SHANGHAI.
HONG KONG MED J. 1999;5[2]:135-139.
CHINESE HERBAL FORMULA XQ-9302: PILOT STUDY OF ITS CLINIC AND IN VITRO
ACTIVITY AGAINST HIV VIRUS.
15 DAY COURSE OF XQ-9302
SYMPTOMS RELIEVED. CD4 INCREASED.
3 PATIENTS: VIRAL LOAD REDUCED BY >1 LOG.
XQ-9302-HEAVY METAL CONTENT IS WELL WITHIN SAFETY LEVELS SET BY
GOVERNMENT OF CHINA.

ACTION REQUIRED
MULTI-CENTRIC LARGER SCALE RESEARCH
ASSESS METALLIC AND POISONOUS SUBSTANCES CONTENT
GOI TO DRAW UP SAFETY LEVELS
INDEPENDENT AGENTS/DRUG CONTROLLERS TO CHECK FOR PURITY AND
SAFETY

CURRENT DATA ALLOWS FOLLOWING CONCLUSIONS
SIDDHA DRUGS WORK.
SYMPTOMS CONTROLLED.
CD4 INCREASES.
VIRAL LOAD FAILS.

WHAT QUESTIONS REMAIN?
1. WILL THESE DRUGS WORK SAFELY IN INFANTS AND CHILDREN?
2. ARE THEY CLASSIFIABLE INTO MODERATE AND STRONG DRUGS?
3. HOW LONG ARE THEY TO BE ADMINISTERED?
4. DO THEY CONTROL TB AND OTHER OI ADEQUATELY?
5. ARE THEY SAFE IN PREGNANCY? AND IN LACTATION?
6. IS THERE ANY RELAPSE?
7. ARE HERBS AND OTHER RAW MATERIALS AVAILABLE ADEQUATELY?
8. LIFESTYLE AND EXERCISE AND DIET MODIFICATION-DO THEY CHANGE WITH THE REGIME USED?

HIV INFECTION AND DISEASE IS ANOTHER VENEREAL DISEASE (SEXUALLY TRANSMITTED DISEASE). THE WAY TO CATCH IT IS VERY OLD-AS OLD AS MANKIND!. THE VIRUS APPEARS TO BE NEW OR IMPORTED FROM THE SIMIAN FAMILY!

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cdeivanayagam@hotmail.com
Comparative study between Ojakshaya and different stages of AIDS
(Dr. K. Sasidharan M.D.(Ay.),Medical Superintendent, Keraleeya Ayurveda Samajam,Shornur)

According to Ayurveda 'Ouus' is 'param teja', the essence of rasadi dhatus and permeates the entire body nourishing all the systems and prevent the decaying, degeneration and destruction of body. 'Tat abhavaseha sheeryante shareernni' (Susrutha) Charaka and Sysrutha have attributed properties and functions of Ojus. White, Reddish Yellow, Sweet (Carka), Cooling, Unctuous, White, Stable, Permeating, Soft, Slimy (Susrutha).

Susrutha also states that Ojus is the seat of life-'Pranayatana'. Charaka while describing Agni, he relates it to balam and Ojus which is the fundamental basis for preservation and protection of the body against decay, degeneration and disease. Here on examining the properties of Ojus it is much related to Kapha in which the Snigdhaguna (unctuousness) plays the crucial role in health and disease. In this context on a deeper analysis the concept of Ojus has to be derived from the pitha as well due to the affinity of Snigdhaguna to Pitha. We can see two situations like the compartments comprehends infinite varieties of functions and structures in the system. The principle in common seen in the body elements ie Snigdhatha is basically maintained and protected by the Agni factor and the dhatusahaja Snigdhatha is derived to the extent of snigdha Somatmaka Ojus which is nothing other than bala itself. (Tadeva balamityuchyate). Para and apara Ojus are described by Charak and Chakrapani states that para Ojus is 8 drops. (ashtabindu) located in hrudaya and the apara Ojus (ardhanjali) is seated in ten dhananis connected with hrudays. Anyhow it is clear to know the importance of these principles in relation to vyadhikshamatva and in protecting and preserving the various system in the body.

In AIDS- Acute Immune Deficiency disease Syndrom, the various stages of disease progression and the symptoms produced have to be examined in the light of the depletion of Ojus in order to derive proper medication in those situations. Susrutha describes Ojovisramsa and Ojovyapath and Ojakshaya which are the three subsequent stages affecting the physiological properties of Ojus due to many reasons.

Symptoms of Ojovisramsa: Sandhivisleshana, Gatra sada, Dosha chaya, Kriya Sannirodha.
Symptoms of Ojovyapath: Sthabda-guru-gatrads, Vathasopha, Varnabheda, Glani, Tandra, Nidra
Symptoms of Ojakshaya: Moorcha, Mamsakshya, Moha, Pralapa, Marana
Causes: Kopa (psychological stress), Kshuth (hunger), Dhyana (anxiety), Soka (anguish), Srama (excretion)-Vagbhata Sutra 11/40, 41.
Charaka includes trauma (which can be due to physical as well as bootabhishanga) and unfavourable environmental factors for Ojokshya. Vagbhata explains the Symptoms of Ojokshya as - “bibhedi durbalo, abheekshna dhayayati, vyadhitendriya duschayo durmana suksho bhavet.”

In this context the importance of the triad of health ie aharam, midra and brahmacarya are to be noted. The unsafe and unresponsible sex practices lead to depletion of Sukladhatu and are likely to get affected by the pratuytpanna Karmaja disease like AIDS. Symptoms due to aniyamata sex practice-Brama(delirum), Klama(lassitude), Dourbalya(weakness), Dhatu Kshaya (balakshaya), Akalamrutyu.

The symptoms mentioned earlier relating to Ojukshaya also could be seen in various other diseases. Even Susrutha explains (abhinyasajwara) hataujasa jwara in which the symptoms as below are seen-Low temperature, Weak voice, Crack over tongue, Dryness of throat, Obstruction of malas, Heaviness of chest, Aversion to food, Change of Complexion, Difficulty in breathing and delirium.

The depletion of Sukla dhatu due to aniyamatha sex practice results in pratiloma Kshaya of dhatus producing progressive wt. Loss of immunity to opportunistic infections. Secondly the vyadhikshamata is deranged as well in anuloma kshaya also both affecting the serious depletion of snigdhatha as mentioned earlier creating balakshays and agnidshaya.

### Dhatukshaya Vikara

<table>
<thead>
<tr>
<th>Rasa</th>
<th>Arochaka, Mukhavairasya hrullasa, Agnimandya, Avipaka, Trupthi, angamarda, Margavrodha, Hrudroga, Pandu, Krusatha, Jwara, Glani, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rakthakshaya</td>
<td>Sirasaidhilya, Pandu, and the above symptoms.</td>
</tr>
<tr>
<td>Mamsa</td>
<td>Rukshata, Emaciation Dhamani saithilyatha</td>
</tr>
<tr>
<td>Meda</td>
<td>Sandhisputana, Sariratanutva, Suptata, Spleen involvement</td>
</tr>
<tr>
<td>Asthi</td>
<td>Astitoda, Saidhilya</td>
</tr>
<tr>
<td>Maja</td>
<td>Brama &amp; Timiradarsana</td>
</tr>
<tr>
<td>Sukra</td>
<td>Fear, Klibya etc.</td>
</tr>
</tbody>
</table>

Some of the above symptoms could be seen in some stages of AIDS Pathology. As a consequence of Kshaya the internal environment become highly prone to sorts of opportunistic infective microbes.

AIDS is defined as a disease indicative of a defective cell medicated immunity occurring in a person with no known cause for immuno deficiency other than the presence of human immuno deficiency virus (HIV). A case of AIDS in an adult is defined as a patient with no underlying cause of cellular immuno deficiency who presents with at least tow of major signs associated with at least one minor sign.

(a) Intermittent or continuous fever>1000F(37.70C)
(b) Involuntary weight loss >10% of body wt.
(c) Intermittent or continuous diarrhoea persisting for one month in the absence of other cause.

These symptoms are results of early inflammatory charges or ama/nirma Dhatukshaya/balakshaya (degenerative tissue changes) and loss of Vyadhi Kshamatva.

Minor symptoms: Persistent cough > One month, Generalised lymphadenopathy, Recurrent Herpes Loster, Chronic progressive and disseminated herps implex infection, Generalised pruritic dermatitis, Oro-pharageal candidiasis.

These symptoms are the result of infective and inflammatory changes affecting various system especially Respiratory (Pranavaha), Alimentary (Koshta) and Cardiovascular system (Hrudaya Rakta and Dhamanis)

**HIV action**

HIV causes qualitative and quantitative deficiency of T4 (CD4+) helper/ inducer lymphocytes which have the CD4 cellular receptor for HIV. The destruction of these lymphocytes leads in turn to suppress or compromise in the function of host cellular defence mechanism, not only to HIV but also to opportunistic infectious agents. The final outcome of HIV infection depends on the hosts immune reaction in the virus either through killing of the infected cells or through suppression of further HIV multiplication.

**HIV ACTIVITY**

**1st phase -Extra cellular**
1. HIV binds via the viral envelope protein gp 120 to the CD4 receptor on the target host cell.
2. The virus fuses with the host cell membrane.

**2nd phase-Intra cellular**
3. The virus get internalised in an endosome.
4. The reverse transcriptase enzyme converts the viral RNA genome to double stranded DNA.
5. The DNA is transported to the host nucleus.
6. It is integrated into the host genome.
7. The HIV provirus remains unexpressedor hidden at this stage until the infected cell is activated by another infection.
8. Transcription of provirus DNA into viral RNA takes place.
9. New viral RNA and proteins are synthesised
10. The virions are assembled at the cell membrane and are released by budding.

**3rd phase- Extra cellular**
11. The host cell ruptures releasing virions.
12. The virions get attacked by immune system.
13. Survives to infect other cells.

**Clinical Stages and Manifestations In AIDS**
<table>
<thead>
<tr>
<th>STAGE AND CLINICAL FEATURES</th>
<th>MAIN SIGNS &amp; SYMPTOMS</th>
<th>TYPICAL DURATION</th>
<th>CD+CELL RANGE (Cells/mm³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acute symptomatic phase</td>
<td>Fever(ജവരം) Headache(ശിരശലം) Malaise(തന്തി) Lymphadenopathy(ലസികാ ഗനിവീകം) Cutaneous rash(ൊതാലിപറത് തടിൽ) Pharyngitis(താലപാകം)</td>
<td>3 to 14 days</td>
<td>1000-500</td>
</tr>
<tr>
<td>2. Chronic asymptomatic phase</td>
<td>Headache (ശിരശലം) lymphade nopathy(ലസികാ ഗനിവീകം)</td>
<td>10+years</td>
<td>750-500</td>
</tr>
<tr>
<td>3. Early symptomatic phase (Non-life threatening infections, chronic or intermittent symptoms.)</td>
<td>Fever(ജവരം) chronic diarrhoea(അതിസാരം) Fatigue(കീണം) Minor oral infections(ആസയപാകം) Headache(ശിരശലം) Anorexia(അരചി) Weight loss(എതിരം കണ്ടി) Vomiting(ചാഡർ) Opportunistic infections(ോരാഗസംകമണം)</td>
<td>05 year</td>
<td>500-100</td>
</tr>
<tr>
<td>4. Late symptomatic phase (increasingly severe symptoms, Life threatening infections)</td>
<td>Pneumonia(നയോമാണിയ) Respiratory problems(ശവാസോകാശവികാരം) Opportunistic infections(ോരാഗസംകമണം)</td>
<td>0-3 years</td>
<td>200-50</td>
</tr>
<tr>
<td>5. Advanced phase (Increasing hazard of death )</td>
<td>Various opportunistic diseases(ഒരാഗ സാമ്കമികത)</td>
<td>1-2 years</td>
<td>50-0</td>
</tr>
</tbody>
</table>

As mentioned earlier the balakshaya, dhatukshaya and rukshata in Dhatus are the cardinal symptoms of Ojakshaya. The degeneration of the Snighata the common principle responsible for the maintenance of the consistency of the dhatua infact leads to to
inflammatory and progressive changes in the systems. It is to be noted that Ojus which was is Snigdha Somatmaka in nature gets depleted in due course of time. Here Agni and Vayu take lead role in pathogenesis and in my opinion the virus must be agneya which produce inconsistency in the Snigdhattha of dhatus. On examining the various stages, the symptoms of primary infection following with the symptomatic phase have to be studied. During this stage the virus interact with the CD4 receptors resulting in reduction of CD4 receptors.

**Symptoms of Primary infection**: Oral and Oesophageal ulceration, Maculo-Papular rash. **Symptoms of asymptomatic phase**: Generalises lymphadenopathy. Irregular fever & head ache, Hypersensitivity reactions over skin, Weakness.

While analysing this stage it could be a ‘Pakavastha’ resulting the depletion of Rasa/rakta sahitha causing pathogenesis in lymph (Laseeka) and blood (Rakth).

**II nd stage**: Seems to be dormant in which the virus enters the cells and may not produce any marked symptoms. Any how headache, lymphadenopathy are seen. This could be a situation where dosha get dormant in tissue principle due to its weak activity (Leena dosha). Particular symptoms of this condition are leanliness, discolouration, lethargy etc and whatever signs get expressed will be indeterminate in nature.

**III rd phase** is characterised by severe Wt. Loss(Dhatukshaya) Asyapaka, Aruchi, Jwara, Atisaram, Chardi, etc. This shows a clear progressive degeneration affecting the snigdhata of other dhatus and watery elements become inconsistent picturising pithakapha vikaras. It stars affecting the other tissue compartments depending on the resistance produced in particular segments.

Certain symptoms seen due to Ojakshaya in Rajayaksham are found to be much similar in this stage like Atisara (diarrhoea), Aruchi (anorexia), Chardi (nausea), lassitude etc.

**IV Stage** is quite dangerous due to the proactive nature of virus with the impaired cellular resistance. The virus gets burst out and starts interacting with the other cells. This is the ideal period for opportunistic infections to develop. Since the immunity is very low below 100/litre, a battery of infections affecting respiratory system, gastrointestinal tract, nervous system, become common in this stage. Here the pakaavastha (inflammatory) and balakshaya become prominent due to the impairment of dhatus, Agni etc.

The functional empairment of various srotus like Pranavaha, Rasavaha, Mamsavaha Rakthavaha, Majavaha and its corresponding Agnis (enzymatic reaction) become increasingly chronic resulting in irreversible damage to the systems. Here the snigdhattha, usna and chalana the characteristics of the srotus get depleted. Sroto-Vaigunya-Kharatvam – Dhamani pratichayam, Agnimandya, Amasanchaya, Dhatu, Apachaya, etc. corresponds with the Ojokshaya in various stages of AIDS.
Laboratory Monitoring of HIV infection
( Dr. T.S. Vijaya Kumar, Dept. of Clinical Virology, Christian Medical College, Vellore)

The role of the laboratory in monitoring HIV infection includes
1. Diagnosis of HIV infection
2. Prognostic monitoring of the infected individual.

DIAGNOSIS OF HIV INFECTION
1. DIRECT METHODS

Culture
Virus isolation and identification can be done for HIV. However, the requirement of P3 facility precludes this method from being practiced on a routine basis.

Antigen Detection
P24 antigen assay can also be performed and it has the added advantage of reducing the window period. But, the poor specificity of the test is a major disadvantage and hence is not used routinely.

Genome detection
Various methods for the detection of viral RNA in plasma and proviral DNA in peripheral Blood Mononuclear Cells (PBMC) are available with reliable specificity, sensitivity, and consistency in performance. The most commonly employed methods are based on amplification of specific targets in the viral genome to detectable levels using the principle of Polymerase chain reaction (PCR). Reverse transcriptase (RT) PCR is commonly employed to detect HIV RNA qualitatively and Quantitatively. Proviral DNA is detected by PCR. Quantitative RT PCR for plasma HIV-RNA has its application in monitoring the progress of an infected individual and to evaluate response to antiviral therapy. Both of the above techniques are not used routinely for diagnostic purposes except in unusual situations such as:

- Confirming the infection status of an infant born to an infected mother
- Early detection of infection in special situations.
- Detection of infection in the serological widow period of an index case or blood/organ donor.
- Sequencing the RT and Protease gene for drug resistance monitoring.
- Identifying infected but persistently sero-negative persons
- Sub-typing of HIV.

Molecular methods employed in our laboratory (table-1) have revealed that subtype "C" is the most predominant in our country, with a few isolated exceptions from certain areas.

<table>
<thead>
<tr>
<th>STATE</th>
<th>SUBTYPES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>A</td>
</tr>
</tbody>
</table>

TABLE—1
DISTRIBUTION OF HIV-1 SUBTYPES BY STATE
2. SERODIAGNOSIS

Serodiagnosis is the mainstay of laboratory diagnosis of HIV infection. The standard serologic test consist of a screening Enzyme Immuno Assay (EIA) followed by a confirmatory western blot/Immunoblot.

SCREENING TESTS (EIA/rapid test)

EIA

The sensitivity and specificity of the EIA depends upon the nature of the antigen coated onto the solid phase. The antigens may be prepared by lysis of whole virus or be recombinant and/or synthetic peptides. Based on the antigen used and the class of antibody/antigen detected HIV EIA can be classified into five generations as shown below:

<table>
<thead>
<tr>
<th>Generation</th>
<th>Antigen used</th>
<th>Antibody/Antigen detected</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>First generation</td>
<td>Virus lysate</td>
<td>IgG</td>
<td>High rates of false positivity</td>
</tr>
<tr>
<td>Second generation</td>
<td>Recombinant protein/synthetic peptides</td>
<td>IgG</td>
<td>Specificity improved</td>
</tr>
<tr>
<td>Third generation</td>
<td>Recombinant protein/synthetic peptides</td>
<td>IgG and IgM</td>
<td>Reduces the window period by a week as it detects IgM</td>
</tr>
<tr>
<td>Third generation plus</td>
<td>Recombinant protein/synthetic peptides</td>
<td>IgG and IgM Detects antibody against “O” group as well</td>
<td>Reduces the window period as it detects IgM</td>
</tr>
<tr>
<td>Fourth generation</td>
<td>Recombinant protein/synthetic peptides and antibody to p24</td>
<td>IgG, IgM and p24 antigen</td>
<td>Reduces the window period by further I weeks it detects p24 antigen</td>
</tr>
</tbody>
</table>

Rapid tests

EIA requires expensive equipment such as ELISA washer and ELISA reader, which may not be affordable for small labs. The technician has to be trained to be accurate in performing the test and capable of interpreting it the correct way. The test procedure takes
2-3 hours. At times, one may not have the luxury of time of await the EIA results. In our institution all pregnant women are screened for HIV as part of the antenatal check up, and appropriate prophylactic measures undertaken for infected individuals. On occasions women who have not been through the prenatal screening may come for delivery. In such situation, or with a prospective cadaver-organ-donor, the HIV-test results are required ASAP. Rapid tests fit the bill perfectly. As the name implies they are rapid and the results are available within 5-15 minutes. The test can be easily done and interpreted. No expensive equipment is needed( a refrigerator to store the devices is enough). Thus rapid tests are widely used in smaller labs, primary health centers and in situations of emergency. Evaluation carried out in our lab found that these kits available in the Indian market had the desired sensitivity and specificity ( Table 2)
TABLE 2
COMPARISON OF THE THREE HIV RAPID TESTS WITH FINAL RESULTS

<table>
<thead>
<tr>
<th>Rapid test</th>
<th>Result</th>
<th>No. of true positive</th>
<th>No. of true Negatives</th>
<th>Sensitivity %</th>
<th>Specificity %</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRI-DOT</td>
<td>Positive</td>
<td>194</td>
<td>13</td>
<td>99.9</td>
<td>99.9</td>
</tr>
<tr>
<td>(n=9312)</td>
<td>Negative</td>
<td>1</td>
<td>9097</td>
<td>(96.7-100)</td>
<td>(99.7-99.9)</td>
</tr>
<tr>
<td>HIV SPOT</td>
<td>Positive</td>
<td>54</td>
<td>07</td>
<td>98.2</td>
<td>99.7</td>
</tr>
<tr>
<td>(n=2390)</td>
<td>Negative</td>
<td>01</td>
<td>2325</td>
<td>(89.0-99.9)</td>
<td>(99.4-99.9)</td>
</tr>
<tr>
<td>CAPILLUS(n=6655)</td>
<td>Positive</td>
<td>104</td>
<td>75</td>
<td>99.0</td>
<td>98.9</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>01</td>
<td>6475</td>
<td>(94.0-00.0)</td>
<td>(98.6-99.1)</td>
</tr>
</tbody>
</table>

Values in parentheses are 95% confidence interval.

With HIV-2 being prevalent in India it is imperative that the rapid tests should be capable of detection HIV-2 as well as dual infections. From our lab experience we found that the kits mentioned below (Table -3) were able to detect HIV-2 infection.

TABLE -3
EVALUATION OF TWO RAPID HIV SCREENING TESTS FOR THE DETECTION OF HIV-2 ANTIBODY ON NPCR CONFIRMED SAMPLES

<table>
<thead>
<tr>
<th>NPCR positivity</th>
<th>No. of samples tested</th>
<th>TRIDOT</th>
<th>CAPILLUS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Positive</td>
<td>Negative</td>
</tr>
<tr>
<td>Pos of HIV-2</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Pos. for HIV-1 &amp; HIV-2</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>

The kit discriminates between HIV-1 and HIV-2
Positive for both HIV-1and HIV-2

CONFIRMATORY TESTS (WESTERN BLOT/IMMUNOBLOT)

Confirmatory assays such as Western Blots/immunoblots or Line Immuno Assays are recommended for all specimens found reactive in the screening EIA or rapid test. The distinction between the above is that the antigens in the western blot strip are viral lysates electrophoretically separated and transblotted onto a membrane support. Being lysates of virus isolates these tend to have cellular components as contaminants, thereby reducing the specificity. Unlike Western Blots (WB), Line Immuno Assays (LIA) use chosen recombinant or synthetic antigens, mechanically applied on the support membrane and are highly specific.

All samples found reactive by the screening tests must be confirmed by WB/LIA. It cannot be emphasized enough that THE WESTERN BLOT MUST USED ONLY AS A CONFIRMATORY TEST for samples found reactive in the screening test. WESTERN BLOT SHOULD NEVER BE USED AS SCREENING TEST. The algorithm to be followed
for HIV testing as recommended by WHO/NACO and as followed on our laboratory is
given below.

**MONITORING OF HIV-INFECTED PATIENT.**

1. Laboratory testing for clinical management of HIV infection

   This includes detection or measurement of virological markers and surrogate
   immunological makers. Monitoring parameters include
   
   1.1. Total (TC) and Differential Count (DC) of WBC;
   1.2. Immunophenotyping of lymphocytes (CD4/CD8)
   1.3. Virus load ie. Plasma HIV-RNA or quantitative p 24 assay etc.

**TC & DC.** CMC observed values of TC and DC estimations (Table-4) revealed that
the clinical categories as individual groups were significantly different from health
individuals. The usefulness of the WHO classification of <1000-2000 and 2000
lymphocytes to discriminate between the clinical groups was compared. The cut-off of
2000 cells had a sensitivity of 45.5% and a specificity of 65.2%. while for the cut -off 1000
cells the sensitivity was a very low 18.2% with a specificity of 90.9%. thus it can be said
that meaningful inferences are best drawn in longitudinal follow-up of individuals for
changes in DC relative to other findings.

### TABLE-4

**MEAN TOTAL AND LYMPHOCYTE COUNT IN HEALTHY AND HIV INFECTED INDIVIDUALS.**

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>TC/1</th>
<th>LYMPHOCYTE %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy south Indians</td>
<td>200</td>
<td>7874.5</td>
<td>2441.2</td>
</tr>
<tr>
<td>HIV Infected individuals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDC A</td>
<td>46</td>
<td>7863</td>
<td>2350</td>
</tr>
<tr>
<td>CDC B</td>
<td>11</td>
<td>6750</td>
<td>1917.5</td>
</tr>
<tr>
<td>CDC C</td>
<td>22</td>
<td>6163</td>
<td>1888.1</td>
</tr>
</tbody>
</table>

CD4/CD8. The standard method employed for lymphocyte phenotyping is the flow
Cytometry. Analysis of the data from our laboratory on HIV-infected and uninfected
individuals indicated a need to devise a T lymphopenis categorization for our population
similar to what is recommended by the CDC(USA), to decide on treatment of HIV and
prophylaxis of Opportunistic infections(01). The proposed stratification is given in the
following table (table-5)

### TABLE-5

**CMC-PROPOSED CRITERIA FOR STRATIFICATION OF HIV-INFECTED SOUTH INDIAN BY FLOW CYTOMETRY**

<table>
<thead>
<tr>
<th>Category</th>
<th>CDC Cut-Off</th>
<th>CMC Cut-Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>
Flow cytometry is the standard method for measuring changes in lymphocyte phenotypes. However, in resource poor settings like in India, the instrument, maintenance and consumable make it difficult to be made widely available. The introduction of EIA technology-based-assay for such measurements would help make the facility more widely available. The capcellia (Bio-Rad) is one such commercial assay, which has made entry into the Indian Market. We evaluated this technique and the findings on uninfected and HIV-infected individuals are shown in table-6. The details of its performance in comparison with flow cytometry and as well as how it relates to viral load are shown in tables 7&8, respectively. It can said that where flow cytometry cannot be used, this EIA based technique may be an alternate approach, provided all interpretations of charges on T lymphocyte counts are made after establishing the counts in a normal HIV-uninfected population.

**TABLE-6**
MEAN CD4+, C8+CELL COUNTS AND THE RATIO OBSERVED IN SOUTH INDIAN ADULTS AND HIV INFECTED INDIVIDUALS BY THE CAPCELLIA METHOD

<table>
<thead>
<tr>
<th>Category</th>
<th>CDC</th>
<th>CMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&gt;500</td>
<td>&gt;300</td>
</tr>
<tr>
<td>2</td>
<td>201-500</td>
<td>81-300</td>
</tr>
<tr>
<td>3</td>
<td>&lt;200</td>
<td>&lt;80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Normal (n=44)</th>
<th>HIV-infected (n=50)</th>
<th>Normal vs. HIV-asymptomatic (n=25)</th>
<th>Normal vs HIV-symptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean CD4+ Counts</td>
<td>1048</td>
<td>746</td>
<td>424</td>
</tr>
<tr>
<td>Mean CD8 Counts</td>
<td>595</td>
<td>889</td>
<td>733</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.9</td>
<td>1.02</td>
<td>0.79</td>
</tr>
<tr>
<td>-------</td>
<td>-----</td>
<td>------</td>
<td>------</td>
</tr>
</tbody>
</table>

**TABLE 7**

**COMPARISON OF FLOW CYTOMETRY AND CAPCELLIA**

<table>
<thead>
<tr>
<th>Comparison (n=5)</th>
<th>r value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD4 Flow Vs Capcellia</td>
<td>0.70</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CD8 Flow Vs Capcellia</td>
<td>0.47</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Ratio Flow Vs Capcellia</td>
<td>0.59</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**TABLE -8**

**COMPARISON OF VIRAL LOAD WITH CD4+ CELLS ESTIMATED BY CAPCELLIA AND FLOW CYTOMETRY**

<table>
<thead>
<tr>
<th>Comparison (n=51)</th>
<th>r value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD4 Flow Vs Viral Load</td>
<td>-0.61</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CD4 Capcellia Vs Viral Load</td>
<td>-0.63</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**HIV Viral Load**

The HIV viral load may be determined by quantifying the viral RNA or p24 antigen. The most commonly used method is RT-PCR amplification of Plasma HIV RNA and quantifying it. Commercial kits for quantifying p24 antigen are also available. However, the correlation between the clinical picture and p24 antigen load is not well documented and hence p24 antigen load is not being on a regular basis. The immunological marker CD4/CD8 count and ration correlate well with the clinical picture along with the HIV plasma viral load. This well-documented trend has been observed in our laboratory also. Response to antiretroviral therapy can also be well monitored by using these markers, as can be seen from our data presented in table-9. Our institutional policy towards antiretroviral therapy is to commence treatment immediately in a symptomatic individual if the clinical picture is suggestive of immunodeficiency, irrespective of CD4 counts and viral load. Treatment may also be initiated if the CD4 count <200 cells/mm3 or if the viral load >55,000. In situations where the individual is asymptomatic, though CD4 counts and viral load may be marginal to cut-off values, the decision to initiate therapy is predicated upon the motivation and affordability of the patient.
### TABLE-9
THE CD4+CELL COUNTS (CAPCELLIA) AND THE VIRAL LOADS OF SEVEN HIV INFECTED INDIVIDUALS BEFORE AND AFTER TREATMENT (<3 MONTHS) WITH ANTIRETROVIRAL DRUGS

<table>
<thead>
<tr>
<th>Sample-ID</th>
<th>Pre-Treatment Values</th>
<th>*Post-treatment values</th>
<th>Interval between Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CD4 cells/1</td>
<td>Viral Load RNA copies/ml</td>
<td>CD4 Cells/1</td>
</tr>
<tr>
<td>HMA 97/99</td>
<td>354</td>
<td>411275</td>
<td>248</td>
</tr>
<tr>
<td>HMA 46/00</td>
<td>82</td>
<td>394416</td>
<td>400</td>
</tr>
<tr>
<td>HMA 61/00</td>
<td>280</td>
<td>35879</td>
<td>497</td>
</tr>
<tr>
<td>HMA 67/99</td>
<td>199</td>
<td>23266</td>
<td>388</td>
</tr>
<tr>
<td>HMA136/99</td>
<td>&lt;30</td>
<td>90213</td>
<td>&gt;1445</td>
</tr>
<tr>
<td>HMA 01/99</td>
<td>259</td>
<td>19432</td>
<td>746</td>
</tr>
<tr>
<td>HMA24/99</td>
<td>&lt;30</td>
<td>162901</td>
<td>354</td>
</tr>
</tbody>
</table>

1. Dual or triple antiretroviral drugs
Pathogenesis of HIV
Dr. Chitra Valsan
Department of Microbiology, Amala Cancer Hospital, Amala Nagar, Trichur

The threat posed by AIDS has triggered an unprecedented effort, by research scientists and governments alike to understand and conquer this disease. Indeed HIV now sets the pace in virus research.

The Virus:
Both HIV 1&2 belong to the family Retroviridae, subfamily lentivirinae and genus Lentivirus. Structure of the HIV is given below.

- gp 120 Receptor binding ligant
- gp 41-Helps in viral entry by membrane fusion
- Reverse Transcriptase-RNA dependent polymerase
- RNA
- p24 -Nucleocapsid
- P17 -matrix protein

CD4+ T cells and macrophages are the main targets of the virus.

The virus binds via gp 120 to CD4 receptor molecule on the host cells. Inside the host cell with the help of the Reverse transcriptase enzyme ds DNA is produced from SSRNA which remains integrated as previous in the host cell DNA thus resulting in latent infection which can be activated by appropriate stimuli.

HIV co-receptors
CD4 molecule alone is not sufficient to let the virus into the T cells. Several co-receptors were discovered which are chemokine receptors Eg., CCR5, CXCR4 etc.
Course of Infection

During the phase of asymptomatic infection the body continues to replace all the T cells that are being killed and gradually this requirement wear out the body's ability to produce these cells. Ultimately CD4+ T cell count drops below a level that is compatible with effective immune function, the disease progresses rapidly culminating in death.

**Immune deficiency in HIV infection:**
CD4+ T cell depletion is the hallmark and central to pathogenesis.

**Mechanisms of CD4+ T cell depletion:**
- Direct HIV mediated cytopathic effects.
  - Cell fusion resulting in syncytium formation
  - Accumulation of unintegrated viral DNA and gp 120 which are cytotoxic to host cells
- HIV specific immune responses:
  - These include both cell mediated and humoral immune responses.

**Humoral:**
HIV specific antibodies appear by 3-6 weeks. But can neutralise laboratory adapted strains only, not the primary isolates. HIV-1 primary isolates have no high immunogenic shared principal neutralizing domain. Resistance to neutralization may be attributed to mutations in the variable regions of gp 120. Thus antibodies are not critical in limiting the infection. ADCC by NK cells and macrophages also has been shown.

**Cell mediated immune responses:**
CMI correlates well with clinical progression. CD4 level is used for monitoring progression of disease, to make decision or therapy, for prophylaxis against opportunistic infection. Tuberculosis occurs with counts below 500/mm3 whereas at still low counts diarrhoea, oral candidian's etc, occurs.

CTL response (cytotoxic T lymphocyte response) is seen against structural as well as regulatory genes. It has got a major role in down regulation of viremia. Strong CTL response is seen in long term nonprogressors and also in those who are exposed but -uninfected. CTL response is unable to sustain control over viral replication because of high mutation frequency (CTL escape phenomenon) and clonal exhaustion.

Other mechanisms of CD4+ T cell depletion which have been suggested are:
- Auto immune mechanisms - T cell and B cell dysregulation, molecular mimicry
- T cell anergy
- Apoptosis
- TH1 TH2 switch
- Super antigen theory

Heterogeneity of HIV strains: - HIV reverse transcriptase is highly error prone resulting in high mutation rates which results in Quasispecies that differ in biological, serological and molecular characteristics.
Conclusion

What is clear is that the presence of HIV is necessary for the development of AIDS and that it is vital that the world wide spread of HIV infection is halted and reversed. Work on developing anti-HIV vaccines is continuing but because of the complex biology of the virus, is proving to be formidably difficult. A better understanding of the pathogenesis of AIDS and in particular, the role of the immune system in the early stages of the disease is vital to permit the development of more appropriate therapies for AIDS.
Clinical Note on Successful Treatment of HIV Carriers with Homeopathic Medicines
Dr. Thobias P. Maliekal, Amala Cancer Research Centre, Amala Nagar, Thrissur.

Homoeopathic treatment of HIV carriers was started in our department to find out what this system can, if possible, do for such patients. For our convenience only three main symptoms were taken for special consideration namely recurring fever, diarrhoea and emaciation. To bring the patients to normal healthy condition we required only about fifteen common medicines like Aconitum, Arsenicum, Mercuriuе, Sulphur, Nux, Tuberculinum etc. the patients were advise to switch on to a vegetarian diet and to maintain good moral standard. In a period of five years ninety two patients registered for treatment with their HIV status established by proper tests. A good number of them discontinued as they were employed in other parts of the country and six of them died of full blown AIDS. Any how about one third of the patients continued treatment promptly.

It was interesting to find that the patients who made regular visits for advice and medicines made steady progress to normal healthy condition. They had great relief when fever and diarrhoea disappeared and body put on weight. This experience gave them much confidence in the efficacy of homoeopathic medicine and prompted them to stick to the treatment.

Encouraging was the result when the lymphocyte enumeration of some patients was done by flow eytomery. It was observed that some of the tested patients had only to reduce their CD 8 cells by five percent and some had to raise their CD 4 cells by one percent to reach normal condition.

It can be safely concluded, therefore, that homeopathy also can do much against this pademic disease and the potentialities of homoeopathic medicines have to be exploited to the fullest extent for the benefit of humanity.
Life styles and environment are among the major causative factors of many diseases and play an important role in deciding the prevention, progress, cure and prognosis of many diseases. Now a days we are hearing much about diseases where life style play a decisive role like Diabetes, Hypertension and cardiac diseases. Most of the people aware that habits like food, stress and strain in daily life, lack of exercise, as the major culprits in these cases, or these are the only highlighted factors.

The basics of life styles of each individual is complex. Socio economic statues, occupation education, family background, upbringing, tastes and inclinations, circumstances, friends, mental health including thinking process and spiritualism are some major deciding factors. Which formulate the life styles of each individual.

Any Aberration, or negative trends in these aspects will be fatal in outcome either in the form of diseases or other maladies. Life syules can be broadly classified into (a) Positive and (b) Negative. Both generally work in a chain like manner.

### Life styles:

<table>
<thead>
<tr>
<th>Positive Life</th>
<th>Negative Life Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Factors</td>
<td>Negative Factors</td>
</tr>
<tr>
<td>Positive Thinking</td>
<td>Negative Thinking</td>
</tr>
<tr>
<td>Positive Habits</td>
<td>Negative Habits</td>
</tr>
<tr>
<td>Better Health</td>
<td>Bad Quality Life</td>
</tr>
<tr>
<td>Better Quality of Life</td>
<td>Diseases-&gt;Death</td>
</tr>
</tbody>
</table>

(E.g.: Bad company leads to alcholism, drug addiction etc. which in turn may lead to extra or pre marital sexual contacts and other un natural sexual offences).

Sex like Hunger and thirs is a primary instinct of any living being. Safe, positive, healthy sexual life style play a dominant role in prevention and controlling many fatal diseases. Hygiene as part of an individual's life style also plays an important role.

**Common Viral infections found in blood donors are :**

14. Human Immuno deficiency Virus (HIV-I and HIV II)
15. Hepatitis C. (H.C.V)
16. Hepatitis B. (H.B.V.)
All donors are screened for markers of these diseases. Positive (Reactive) Blood units are discarded and only safe blood is issued for transfusion.

DATA:
NUMBER OF UNITS FOUND POSITIVE DURING THE YEAR 2001
I.M.A. BLOOD BANK, ERNAKULAM.

<table>
<thead>
<tr>
<th>MONTH</th>
<th>T. Collection</th>
<th>HIV</th>
<th>Hbs Ag</th>
<th>HCV</th>
<th>HBC(Core)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>JANUARY</td>
<td>1729</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>69</td>
<td>5.37</td>
</tr>
<tr>
<td>FEBRUARY</td>
<td>1576</td>
<td>2</td>
<td>4</td>
<td>14</td>
<td>60</td>
<td>5.07</td>
</tr>
<tr>
<td>MARCH</td>
<td>1356</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>57</td>
<td>5.37</td>
</tr>
<tr>
<td>APRIL</td>
<td>1425</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>65</td>
<td>5.26</td>
</tr>
<tr>
<td>MAY</td>
<td>1743</td>
<td>1</td>
<td>10</td>
<td>7</td>
<td>68</td>
<td>4.93</td>
</tr>
<tr>
<td>JUNE</td>
<td>1943</td>
<td>4</td>
<td>10</td>
<td>5</td>
<td>107</td>
<td>6.48</td>
</tr>
<tr>
<td>JULY</td>
<td>2094</td>
<td>2</td>
<td>11</td>
<td>7</td>
<td>87</td>
<td>5.1</td>
</tr>
<tr>
<td>AUGUST</td>
<td>1838</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>78</td>
<td>4.95</td>
</tr>
<tr>
<td>SEPTEMBER</td>
<td>1702</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>51</td>
<td>3.52</td>
</tr>
<tr>
<td>OCTOBER</td>
<td>1528</td>
<td>1</td>
<td>7</td>
<td>6</td>
<td>61</td>
<td>4.91</td>
</tr>
<tr>
<td>NOVEMBER</td>
<td>1645</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>56</td>
<td>4.13</td>
</tr>
<tr>
<td>DECEMBER</td>
<td>1510</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>49</td>
<td>3.97</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20089</td>
<td>34</td>
<td>75</td>
<td>72</td>
<td>808</td>
<td>4.92</td>
</tr>
</tbody>
</table>

The points to be noted are.
7. All the donors were found fit for donation of blood after pre donation check up.
8. Most of them are in the age group of 20 to 35
9. 98% of them are males
10. 18% of them are Voluntary donors.

Most of deaths caused by unsafe blood transfusion are due to the diseases caused by transmission of virus bacteria or protozoa. The agents responsible share the following characteristics.
a) Prolonged persistence in the blood steam.
b) Giving rises to carrier or latent stages.
c) Causation of diseases in the long incubation periods.
d) The ability to cause a symptomatic infections.
e) Stability in stored blood and plasma factors.
N.B.: Ideally blood for transfusion should be tested for the presence of all infecting agents.

The chance of becoming a carrier of a particular agent varies widely in different populations and risk of transmitting the agent concerned can be reduced by appropriate screening and selection of donors through pre donation counselling and checkup.

Thorough serological screening, will ensure issue of safe blood to recipients.

1. HUMAN IMMUNO DEFICIENCY VIRUS (HIV)

The Virus, which is the causative agent of AIDS (Acquired Immuno Deficiency Syndrome). They are of two types HIV-I and HIV-II. In India the most prevalent is HIV-I.

Course of Infection:-

For the first few days after infection no markers of HIV can be detected in Blood. Viraemia follows for a period of several weeks. During this period one third of patients may develop acute flu like syndrome. Two to four months after infection antibodies appear in blood. This period between infection and development of Anti HIV is window period.

Transmission:

6. Sexual intercourse with infected persons either Homosexual and Hetero Sexual (Most Common)
7. Transfusion of infected blood or blood products.
8. Contact with blood or body fluids (like a semen) with contaminated needles, syringes or knives. E.g. tattooing, intravenous drug abuses.
9. Vertical transmission (from infected mother to child).
   a) In the uterus
   b) During birth or breast feeding.
10. Tissue or organ donation.

N.B.: Innocent house wives are the most vulnerable, exposed to infected husbands, with the added danger of transmission to child.

6. HEPATITIS B VIRUS (HBV)

Hepatitis B is a disease of the liver caused by virus infection, producing inflammation and destruction of liver cells impairing liver function. It has been found to be the second most carcinogen next to tobacco. In our country eight in every ten cases of liver cancer is due to HBV infection. The milder infection, greater the risk of developing the chronic carrier state. These causes are able to infect others and present a public health risk. Cirrhosis liver is another consequence.

Modes of transmission:

It is almost identical with HIV infection except:-

a) It is highly infectious, hundred times more than HIV.

b) It is extremely resistant to advers conditions outside the body, while HIV is fragile outside the body even in room temperature. (e.g. it can survive for months on contaminated medical and dental equipments.)
c) Unlike HIV vertical transmission to child is rare unless in case of invasive procedures. But perinatal transmission can occur in case of contact with mothers blood.

d) Unlike HIV, HBV can be transmitted. From infected persons to others, by bodily contact, sharing same shaving kits and tooth brushes etc. especially in high Endemecity areas. So HIV is more dangerous from public health point of view than HIV. Only relief in scenario is that a vaccine has been developed to prevent HBV infection.
III) HEPATITIS C VIRUS :- (HCV)

HCV is the most common cause of Hepatitis along with HBV in post transfusion scenario. From the data it can be seen that it is almost as prevalent as HBV in lolld donors. 50% of HCV infection is reported to progress to chronic infection of which 20% may progress to cirrhosis and Hepato Cellular Carcinoma.

Modes of transmission:-

Heterosexual transmission doesn't seem to be as significant for HCV as it is for HBV and HIV. Transmission through blood is more than body fluids. Needle sticks (Drug abuses especially IV drug abuses) Tattooing, scared shaving kits tooth brushes etc. Body contacts especially during play by children are other culprits vertical transmission is also possible.

In conclusion:-

Once again it is being pointed out that healthy positive life styles contribute significantly in the effective control and prevention of many diseases including those described above.
Sidha/Ayurvedic Therapy for Management of HIV Infection  
Dr. Sunil Kumar, Vedic Remedies, Bangalore.

INTRODUCTION

We are a group of Ayurveda, Sidha, Allopathic doctors along with a clinician amongst others operation for several years. We now have formed a firm under the name of Vedic Remedies with a goal to alleviation the suffering of HIV infected individuals. Getting here has not been easy as we to face difficulties, be it.

8. Raw material sourcing.
9. Standardizing the finished products & dosage
10. Changing the mindset of the patients.
11. Managing the opportunistic infections.
12. Clinical tests.
13. Getting the patients and to top it all funds &lack of information.

Our aim has been to give our observational study a scientific angle while maintaining the traditional procedures with as much evidence based so as to approach the model program lay down by the scientific community. It is our desire to work towards integrating the various forms of therapies available today, for a common cause.

ABOUT THE THERAPY

It is known fact that there is no cure today except to clinically manage the infection. Our focus of this group has been to improve and strengthen the immunity of the HIV infected individuals through our traditional therapies. We have worked on various combinations like herbs, herbo-minerals, Unani to arrive at a treatment regime that will contain the opportunistic infection. We have taken the help of patients who have undergone the therapy to help us in counseling the new patients.

We have been observing various patients for several years after a 3-month treatment regime to follow clinical parameter like CD4/CD8 & viral load.

TYPICAL SYMPTOMS ENCOUNTERED

Include - Candidasis
- Skin pigmentation
- Herpes zoster etc ........

7 PRE TREATMENT INFESTIGATION

a) Elisa
b) Western blot
c) CD4/CD8
d) Viral load

Viral culture has been done as part of post treatment, after viral loads drop to the required levels, Initially for about 15 patients. Blood samples drawn through M/s Ranbaxy Labs, Mumbai were sent to M/s speciality Labs, Santa Monica, USA and M/s National Aids Research institute, Pune.
We have been noting the clinical results of certain patients over various periods of time, some of them up to date, the aim being to study the long-term benefits of this short therapy and also to determine if additional therapy is required in between.

**POST TREATMENT OBSERVATION**

13. Perceptible weight gain  
14. Decline in the viral loads  
15. Improvement in the immunity levels  
16. Symptom free and a better quality of life.

**HIGHLIGHT OF THE TREATMENT :**

2. Short duration therapy (4 months)  
3. No side effects observed  
4. No post treatment required  
5. HIV I and HIV II infection been handled.  
6. Opportunistic infection contained without any other form of interventions.

We are now confident to undertake a larger group to study with any NGO or an organisation with an objective to:

1. To have an integrated approach to carry out studies on a common platform.  
2. Multicenter studies following model procedures.  
3. Give a scientific approach to our traditional remedies  
4. Reach these forms of therapies to a larger section of the society at affordable prices.

We have for the last two years entered into an understanding with Dr. C.N Devanayagan's, Health India Foundation an NGO based in Chennai, with whom a pilot study has been undertaken. They have also been following up our various patients during this time.

We hope that like minded organizations such as theirs will come forward to start a movement to bring recognition to our indigenous therapies and work towards an alternative, which is less expensive.

This conference has enriched our knowledge on various research works and studies being carried out by various groups, the clinical aspects and insight into evidence based scientific study. I thank M/s Amala Ayurveda Hospital & Research Centre and CHAI for organizing this program & making this conference very educative.
In India for the first time Ayurveda Department was started under the Red Cross on 26th November 2001 as a part of the Bel Air Hospital by the enthusiastic efforts of the Administrator Rev. Fr. K.Tomy. This was a T.B. Sanatorium established and run by Dr. Brillimoria in 1912 onwards. Afterwards it became an establishment for treating HIV/AIDS in patients. Now there are about 200 in patients in this hospital.

The first case I treated at this hospital was a woman aged 35 with several diarrhoea and vomiting of more than two weeks durations. She was admitted in the Allopathy section. There was severe vomiting and loose stools. She was in a sinking stage with slow, feeble pulse. They couldn't give any medicine orally or couldn't administer intravenous injections (patients was not responding to it). She had not taken any food for more than 10 days. At this stage, the authorities informed me and asked to examine and gave any medicines. At 9 p.m we examined the patient and gave some Ayurvedic medicines. Within half an hour she responded to our medicines. The number of stools and vomiting became less. The next morning, the condition of the patient was improved far than our exceptions. There was no loose stools or any vomiting she ate fruits and toast. The relatives and others felt very good about Ayurvedic medicine and appreciated me. This case proved the efficacy of Ayurvedic medicine even in the last stages of this disease. This was a new experience to the authorities. As a result of this, the Administrator Rev. Fr. K. Tomy send me to the National Ayurvedic Seminar in Kerala instead of Matron sister Rosella.

Many patients came forward to treat by Dr. Raghavan, they were disappointed by taking different allopathic medicines. Most of them were very poor and couldn't buy the costly Ayurvedic medicines and follow the treatment.

There was another patient also in the last stages of the disease and we gave our medicines and his life was extended to another six months. Two years ago when I worked at Vikroli (Mumbai), I treated few cases in OPD. Among them was one young lady in her thirties with ELISA positive and there was no exhaustion diseases took out medicine for three months. After three months medication serological test (ELISA) became negative. I couldn't follow the case no more.

With the help of fundamental Ayurvedic medicines in the beginning stages, we can do much. For the annihilation of this dreaded evil, from the earth, co-operation of other systems of medicines like Allopathy, Siddha, Homoeopathy etc. are also needed.
Sneha Bhavan is a Rehabilitation centre for Chemically dependent women run by the Salesian Sisters of Huwahati province. It was inaugurated on 12th August 1994 in a rented building in Imphal in Manipur and presently we are staying in our own building adjacent to Little Flower School.

During these past eight years we discovered that 90% of the injecting drug users are HIV positive. Already 42 of our patients have gone to the next world. Whenever the parents or the relatives come to know that their ward is sick, at once there is a great fear and they ask 'Is it AIDS?' Four years back we had the sad story of a girl, who ran away from home because her name was given to the teroist to eliminate her. She was with us for more than tow years, during which on one came to see her. As she was very sick, I informed ger people, and they came to see her. She was angre and asked 'why did you come now? Her repeated pleading was 'Don't send me home........ let me die here.... and in fact hours were beautiful. Surrounded by all of us, she was singing the praises of God till the last. She left this world serenely to enjoy the happiness in the next world. This was just beginning only. Many more will come and many more will go and we have to help them to go as a human being till the last. Every one is my brother and sister who need our care and our love. They may not need medicine, they do not expect cure, but our healing presence of touch warmth and love.

Soon after, as people came to know about Sneha Bhavan, they started to send Windows to us. We cared for them. Though few of them died while the others got better and started to join in the training in Knitting, Tailorig or Weaving. There was the case of a widow who came with her little daughter. We did not think that either of them would survive even a month. Now it is already three years they are still alive. The mother has gone back to the family to take care of her two elder children as she works on Knitting machine and earn her living. While the daughter is with us studying in class IV in our school. Recently few months back she became weak and did the CD/4 count. It had gone down to 199 so we started to give the medicine. Besides she was suffering from TB of stomach. The cost of all the medicine including Retroviral drugs is Rs.2500 per month.

There are many more mothers and children alike, hope for a solution and none of them can afford to but allopathic retroviral medicine. Thanks to the Ayurveda and Herbal medicine which will help in treating the opportunistic infection so that a few more years could be added to their life. Thus children will have their parents and parents will have children.
NEEM TREE FOR HIV-AID
Dr. V. Velayudhan, D. Sc.(Colombo), RSMP, RHMP
Specialist in Siddha Herbals and Homeopathy,
42, Main Road, Handhigram-624 302,Dindigul, Tamil Nadu, ph:0451-452027

We all the Indian Traditional Medical Practitioners well known about the Neem tree (AZAKIRACHA INDICA). The neem leaves are natural antiseptic and useful in eradicating the worm troubles related skin problems. Likewise chicken- pox measles and herpes skin problems of virus infections is curable by Neem leaves. The bark of Neem tree is useful to nervous system and the skin.

In Siddha medicine the “Kaya Kalpam” is a superior medicine for rejuvenation of the human immunity. The Central Council for Research in Ayurveda and Siddha has published a book in the name of “Siddhar Kaya Kalpam medicine can be prepared from the well matured Neem tree.

I have written an article about the “Vembu Kalpam” in Tamil which was published in the Souvenir of National conference on AIDS 1993 organised by IMPCOPS-Madras.

The well-matured tree can be identified only by experienced practitioners. The inner part of the bark of such tree is useful to eliminate like HIV Infections without serious side effects. My opinion is that the well matured Neem bark is generally antiveral and preventing the destruction of white blood cells and also gradually boosts the human body defence.

I wish to express may best wishes and blessings to the National Seminar on the use of Traditional Medicines in HIV-AIDS at Amala Hospital Thrissur on September 2002.