

# Carrier Stage of Infection – A Prophylactic management through Ayurveda.

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## Introduction

It is evident that man has won many battles against infectious diseases, but microbes have shown the ability to hit back and infectious diseases may be entering a new era in the 21<sup>st</sup> century.

With the evident of antimicrobial agent, some medical leaders believed that infectious diseases would soon be eliminated and become historic interest only. In dead the hundreds of chemotherapeutic agents developed since world war II, most of which are potent and safe, include drugs effective not only against bacteria but also against viruses, fungi and parasites.

- Disease: Is a physiological or psychological dysfunction.
- Illness : is a subjective state of a person who feels aware of not being well.
- Sickness is a state social dysfunction i.e. a role that the individual assumes when ill. (sickness role)

The clinician sees people who are ill rather than the diseases which he must diagnose and treat. However it is possible to be victim of disease without feeling ill, and to be ill without the signs of physical impairment.

The carrier stage is the person will be the victim of disease but may not be ill. Its an effort for an Ayurvedacharya how he can understand that and treat.

## **Infection:**

The entry and development or multiplication of an infectious agent in the body of man or animals.

It also implies that the body responds in the same way to defend itself against the invader, either in the form of an immune response or disease.

The infection doesn't cause an illness always.

There are several levels of infection

- Colonization
- Subclinical or Inapparent
- Latent infection
- Manifest or clinical infection.

### **Acute infection vs. chronic infection**

- Acute Infection - An infection characterized by sudden onset, rapid progression, and often with severe symptoms
- Chronic Infection - An infection characterized by delayed onset and slow progression

### **Primary infection vs. secondary infection**

- Primary Infection - An infection that develops in an otherwise healthy individual
- Secondary Infection - An infection that develops in an individual who is already infected with a different pathogen

### **Localized infection vs. systemic infection**

- Localized Infection - An infection that is restricted to a specific location or region within the body of the host

- Systemic Infection - An infection that has spread to several regions or areas in the body of the host

### **Clinical infection vs. subclinical infection**

- Clinical Infection - An infection with obvious observable or detectable symptoms
- Subclinical Infection - An infection with few or no obvious symptoms

### **Opportunistic infection**

An infection caused by microorganisms that are commonly found in the host's environment. This term is often used to refer to infections caused by organisms in the normal flora.

### **The suffix “-emia”**

A suffix meaning “presence of an infectious agent”

Bacteremia = Presence of infectious bacteria

Viremia = Presence of infectious virus

Fungemia = Presence of infectious fungus

Septicemia = Presence of an infectious agent in the bloodstream

### **The suffix “-itis”**

A suffix meaning “inflammation of”

Examples:

Pharyngitis = Inflammation of the pharynx

Endocarditis = Inflammation of the heart chambers

Gastroenteritis = Inflammation of the gastrointestinal tract

## **The Normal Flora of Humans:**

### Types of Symbiosis

- **Mutualism** - A symbiotic relationship in which both species benefit
- **Commensalism** - A symbiotic relationship in which one species benefits, and the other species is neither helped nor harmed
- **Parasitism** - A symbiotic relationship in which one species benefits, and the other species is harmed Generally, the species that benefits (the parasite) is much smaller than the species that is harmed (the host)

### **Normal flora is present in**

- skin
- upper respiratory tract
- oral cavity
- intestine, especially large intestine
- vaginal tract

Very little normal flora in eyes & stomach

### **Notably absent in most all internal organs**

Absent in:

- lower respiratory tract
- muscle tissue
- blood & tissue fluid
- cerebrospinal fluid
- peritoneum
- pericardium
- meninges

### **Benefits of the normal flora**

- Nutrient production/processing  
eg Vitamin K production by *E. coli*
- Competition with pathogenic microbes
- Normal development of the immune system

## Concept of causation:

Up to the time of Louis Pasteur, various concepts of disease causation were in vogue.

For eg:

- The supernatural theory of disease.
- The theory of humors
- The concept of contagion
- Miasmatic theory of disease
- The theory of spontaneous generation etc.

Discoveries in the microbiology marked a turning point in our etiological concepts.

### Germ theory of the disease

For long, man groping in darkness about the causation of disease.

In 1860 French bacteriologist Louis Pasteur demonstrated the presence of bacteria in air. He disproved the theory of "Spontaneous Generation".

In 1873, Pasteur advanced "Germ theory of disease".

In 1877, Robert Koch showed that anthrax was caused by bacteria.

Afterwards all attention was focused on microbes and their role in disease causation. The germ theory of disease causation came to forefront, supplementing the earlier theories of disease causation.

Medicine finally rags of dogma & superstition and put on the robes of scientific knowledge.

The concept of cause embodied in the germ theory of disease is generally referred to as a one-to-one relationship between causal agent and disease. The disease model accordingly is

### DISEASE AGENT – MAN – DISEASE



The germ theory of disease, though it was a revolutionary concept, led many epidemiologists to take one sided view of disease causation. That is, they could not think beyond the germ theory of disease.

It is now recognized that a disease is rarely caused by a single agent alone, but rather depends upon a no. of factors which contribute to its occurrence.

**Epidemiological TRIAD:**

The germ theory of disease has many limitations. For eg: It is well known, that not every one exposed to tuberculosis develops tuberculosis. The same exposure, however, in an undernourished or susceptible person may result in clinical disease.

There are other factors relating to the host and environment which are equally important to determine whether or not disease will occur in the exposed host. This demanded broader concept of disease causation that synthesized the basic factor of agent, host and environment.

### Ayurvedic concepts:

देहधातु प्रत्यनीक भूतानि द्रव्याणि देह धातुभिः विरोधमापद्यन्ते ।

देहधातु प्रत्यनीकभूतानि इति देहधातूनां रसादीनाम् ॥

The agents which are against the dehadhatus, if they enter the body they will be opposed by the dehadhatus.

This quotation of charaka samhita helps to explain the antigen antibody reaction which happens in the body when a foreign body enters.

The antigen antibody reaction is nothing but which results in the symptoms of infection.

विकाराणां विघातस्य उत्पत्ति प्रतिबन्धस्य भावः विघातभावः

विकाराणां विघातस्य अभावो विकारजननं इति ॥

तयोः प्रतिविशेषः विकारविघातभावाभावप्रतिविशेषः ।

प्रतिविशेषः – विकारजननम्, चिरेण जननम्, अणुविकारजननम्

The factor which opposes the onset or production of the disease is called as VIKAAARAVIGHAATA BHAVA. When that factor is absent i.e. vikaara vighaata bhaava abhaava, the disease get produced.

Then the vikaara vighata bhava is immunity and its abhava is immunodeficiency. The disease occurs in that state is nothing but the infectious disease.

उपसर्गजा व्याधयः –

उपसर्गजा इति उपसृज्यन्त इति उपसर्गाः, पीडितजनसमीपोत्पन्नाः ज्वरादयः ॥

संसर्गजाः देवद्रोहकजनसंपर्कजा इत्यर्थः ।

उपसर्गजसंसर्गजयोरयं विशेषः – उपसर्गजा ज्वरादिरोगपीडित जनसंपर्काद्भवन्ति, संसर्गजा देवादिद्रोहकजनसंपर्काद्भवन्ति ॥

The Jvaraadi diseases which occurs due to the specific reason of relation with the another diseased person are UPASARGAJA VYADHIS.

None other than the infectious diseases can spread like this.

The person also can get the disease due to the relation with an asymptomatic person but who has done devadroha. That is SAMSARGAJA VYADHI.

प्रसङ्गात् गात्रसंस्पर्शात् निःश्वासात् सहभोजनात् ।

सहशय्यासनात् चापि वस्त्रमाल्यानुलेपनात् ॥

कुष्ठं ज्वरं शोफश्च नेत्राभिष्यन्द एव च ।

औपसर्गिक रोगाः संक्रामन्ति नरान्नरम् ॥

Kushta, jvara shopha etc are the AUPASARGIKA ROGAS which gets spread from person to person due to different modes of relationship between the persons.

Its nothing but the explanation of the spread of infection.

## Stages

1. Entry of Pathogen - Portal of Entry
2. Colonization - Usually at the site of entry
3. Incubation Period - Asymptomatic period

Between the initial contact with the microbe and the appearance of the first symptoms

4. Prodromal Symptoms - Initial Symptoms
5. Invasive period
  - Increasing Severity of Symptoms
  - Fever
  - Inflammation and Swelling
  - Tissue Damage
  - Infection May Spread to Other Sites
  - Acme (Fastigium) Decline of infection
6. Decline of infection
7. Convalescence.

## **Carrier stage:**

In some disease due to inadequate treatment or immune response, the disease agent is not completely eliminated, leading to a carrier stage.

A carrier is defined as **“an infected person or animal that harbors a specific infectious agent in the absence of discernible clinical disease and serve as potential source of infection for others.”**

As a rule carriers are less infectious than cases, but epidemiologically they are more dangerous than cases because they escape recognition and they continuing as they do to live a normal life among the population or community, they readily infect the susceptible individuals over a wider area and a longer period of time under favorable conditions.

### **The elements in a carrier state are:**

1. The presence of the disease agent in the body.
2. The absence of recognizable signs and symptoms of disease.
3. The shedding of the disease agent in the discharges or excretions thus acting as source of infection for others.

### **Carriers may be classified as below:**

#### **A. Type**

##### **1. Incubatory**

Incubatory carriers are those who shed the infectious agent during the incubation period of the disease.

##### **2. Convalescent**

Convalescent carriers are those who continue to shed the disease agent during the period of convalescence

##### **3. Healthy**

Healthy carriers emerge from the subclinical cases. They are the victim of subclinical infection who has developed carrier state without suffering overt disease.

B. Duration

1. Temporary
2. Chronic

C. Portal of exit

1. Urinary
2. Intestinal
3. Respiratory
4. Others

## Ayurvedic concepts:

### Incubatory carrier

कृत्स्नेऽर्धेऽवयवे वापि यत्राङ्गे कुपितो भृशम् ।

दोषो विकारं नभसि मेघवत्तत्र वर्षति ॥

नात्यर्थं कुपितश्चापि लीनो मार्गेषु तिष्ठति ।

निष्प्रत्यनीकः कालेन हेतुमासाद्य कुप्यति ॥

The kupita dosha (the first three stages of infection) may be locally or systemically gets sthanasashraya produces the disease (apparent infection). If the doshas are not much Kupita(not so virulent) they will stay as kupita itself and wait for the proper time to give rise the symptoms. Until they give rise the symptoms if it is spreading disease it is nothing but the incubatory carrier.

कुपितानां हि दोषाणां शरीरे परिधावताम् ।

यत्र सङ्ग खवैगुण्यात् व्याधिः तत्र उपजायते ॥

Kupita doshas are moving all over the body ( prasara avastha). And once Khavigunya occurs at the place of Khavaigunya vyadhi develops. Till the vyadhi develops the stage is nothing but the Carrier stage if the vyadhi is of spreading nature.

अधिज्ञेते यथा भूमिं बीजं काले च रोहति ।

अधिज्ञेते यथा धातुं दोषः काले च कुप्यति ॥

प्रत्यनीकस्य काल प्रकृत्यादेः दोषविरुद्धस्य बलक्षयः, तेन दोषवृद्ध्या यदा प्रत्यनीकस्य क्षयो भवति तदा ज्वरयति इति अर्थः ॥

The kupita Dosha is placed in the Dhatu and gets turn into a disease when the Kala comes just like a seed inside the ground gets sprouted when the proper time comes. That is when pratyaneeka bala (immunity) kshaya occurs disease gets manifested.

Untill the pratyneeka bala is strong enough the Kupita dosha which is dhatugata is nothing but in the incubatory carrier stage.

Out of Six Vaydhi Kriyakalas till the stage of sthanasamshraya one may not be able to identify the disease proper. In the Sthanasamshraya avastha the disease poorvaropas will manifest which helps to diagnose the disease as early as possible. But in first three stages that till the stage of **prasara** only prakupita dosha lakshanas can be identified not the vyadhi proper.

So

- dosha prakopa has taken place ( first 3 stages of infection)
- vyadhi lakshanas are not seen ( as in carrier stage)
- if it is a infectious origin

Why not it is a incubatory carrier?

So **prasaravastha** can be considered as incubatory carrier.

### **convalescent carrier.**

**Punaravartaka Jvara :**

असंजातबलो यस्तु ज्वरमुक्तो निषेवते । वर्ज्यमेतन्नरस्तस्य पुनरावर्तते ज्वरः ॥

दुर्हृतेषु च दोषेषु यस्य वा विनिवर्तते । स्वल्पेनाप्यपचारेण तस्य व्यावर्तते पुनः ॥

This punaravartaka jvara directly doesn't give the clue of carrier stage, but we can understand by other means.

An infectious disease in its post treatment stage if it can re-occur just because of some improper habits. From where does the infectious agent came? It is just because, infectious agent was in the body but its virulence was reduced, and by the time because of improper habits, hosts' immunity also got reduced the disease re manifested. If the disease is not re manifested and if the condition is of contagious one its nothing but convalescent carrier.



## Healthy carrier.

Acc. To Ayurveda is a healthy carrier is healthy person?

Yes ,, because

A healthy carrier has never suffered from the disease, presently also not suffering, never going to suffer in future.

सुष्टु निर्विकारत्वेन अवतिष्ठत इति स्वस्थः, तस्य भावः स्वास्थ्यम् ;

उद्वेजक धातुवैषम्यविरहित धातु साम्यमित्यर्थः ॥

चक्रपाणि, च सू 5/13.

Being without the affection of any disease is svasthya. It is nothing but the dhatu-samya i.e. absence of udvejaka dhatuvaishmya ( apparent dhatuvaishmya).

रोगस्तु दोषवैषम्यं दोषसाम्यं अरोगता ॥

उपसर्गजा व्याधयः –

उपसर्गजा इति उपसृज्यन्त इति उपसर्गाः, पीडितजनसमीपोत्पन्नाः ज्वरादयः

संसर्गजाः देवद्रोहकजनसंपर्कजा इत्यर्थः

उपसर्गजसंसर्गजयोरयं विशेषः – उपसर्गजा ज्वरादिरोगपीडित जनसंपर्काद्भवन्ति, संसर्गजा देवादिद्रोहकजनसंपर्काद्भवन्ति

The person also can get the disease due to the relation with an asymptomatic person but who has done devadroha. That is SAMSARGAJA VYADHI. Who has done devadroha he is spreading the disease, but he is asymptomatic. Relatively he is svastha. So he may be healthy carrier or if he attains the disease in the future he is an incubatory carrier.

## **A carrier is**

- Prasaravastha of the disease.
- Kupita Doshā – dhaatugatatva.
- May be a dosha vriddhi stage.
- May be punaravrtaka jvara stage.
- May be svastha.
- May be samsargaja vyadhi.
- May be aupasrgika vyadhi.
- Remains in the stage for many days to years or for life time.
- A simple reason may lead to the active stage of the disease.

## साध्यासाध्यता:

शेषत्वात् आयुषो याप्यं असाध्यं पथ्यसेवया ।

लब्धाल्पं सुखं अल्पेन हेतुना आशु प्रवर्तकम् ॥

गम्भीरं बहुधातुस्थं मर्मसन्धिसमाश्रितम् ।

नित्यानुशायिनं रोगं दीर्घकालं अवस्थितम् ॥

**The carrier stage is yapya because,**

- Gets aggravated by simple reasons
- One need to follow always pathya
- Its organism never gets out of the body so like gambheera dhatustha
- Nityaanushayi roga
- Deergha kaala avasthita roga

## Management

Infection involves the complicated interactions of parasite and the host and inevitably affects both. In most cases, a pathogenic process consisting of several steps is required for the development of infections since the competent host has a complex series of barricades in place to prevent infections.

The successful parasite must use specific strategies at each of these steps. The specific strategies used by the bacteria, virus and parasites have some remarkable conceptual similarities, but the strategic details are unique not only for the each class of organism but also for the unique species within the class.

### Prophylaxis:

Prevention of the disease or preventive treatment.

So in Ayurveda it goes as

- **Vikaara anutpattikara chikitsa**
- **Svasthanya svaasthya rakshana**

So for the physician in the treatment of infectious disease, there are two ways to treat.

1. **Either killing or inhibiting the infectious agent.**
2. **Or strengthening the barricades.**

### 1. Killing the infectious agent ( antimicrobial agents ):

Physician should have the substances which suppress the growth or kill the microorganisms but have no or minimal effect on the recipient / host.

Here the principle of the treatment is just to kill the infective agent which caused the disease. And the treatment doesn't have any role in the immunity of the host. So the same organism if again infects or some other organism infects the body cannot defend itself. Again the same or new antimicrobial agent is required.

Each and every species of infective agent has its own strategy to fight against the barricade. So the antimicrobial agent which is given to fight against a particular species

may not work against the other one. And a microorganism in its second or successive entries to the body may not be sensitive to the same antimicrobial agent; it may require some other antimicrobial agent.

As an Ayurvedic Physician if we go in the same modern lines it needs multiple researches to find out organism specific anti microbial agents. And it looks to be foolish if we try to find an Ayurvedic antibiotic as there is no guaranty that the organism cannot become non sensitive when the highly researched antimicrobial agents of the allied science can fail.

The organism which is present today causing the severe disease like H1N1 was not present in yesterdays. Even though it was present it was having some other gene type. The same medicine which was given at that time is not working this time. So you find out one organism specific Ayurvedic antibiotic which is highly sensitive today may become non-sensitive tomorrow.

And by this antimicrobial treatment or treatment of killing the infective agent doesn't give you the ability to fight back against the same organism next time and you need the treatment again.

### **Antibiotic resistance:**

Antibiotics typically retard bacterial proliferation by entering the microbes and interfering with the production of components needed to form new bacterial cells. However, the use (and misuse) of antimicrobial agents encourages the evolution of bacteria toward resistance. Four major mechanisms mediate bacterial resistance to antibiotics:

- 1) bacteria may produce enzymes that degrade antibiotics or that chemically modify and inactivate the drugs;
- 2) bacteria may alter or replace molecules that are normally bound by an antibiotic – changes that essentially eliminate the drug's targets in bacterial cells;
- 3) bacteria can eliminate entry ports for the drugs by altering permeability; or
- 4) bacteria may manufacture pumps that export antibiotics before the medicines have a chance to find their intracellular targets.

Is it a **SHUDDHA CHIKITSA** ?

SHUDDHA CHIKITSA is one treatment which doesn't lead to another disease after treating the primary disease.

The antimicrobial treatment or the treatment of killing the infectious agent doesn't give you the surety that it doesn't kill the normal flora of the body. And the loss of normal flora may lead to another disease.

So this is the treatment but not the proper and ultimate treatment or SHUDDHA CHIKITSA.

Even though it is not the shuddha chikitsa it doesn't mean it is of waste. It has its own importance like if an terrorist inside the city creating the problem to the others you have to kill him. If your defense force is not able to kill him then you need from outside like from some other country. Antibiotics have their role but if you consider that as the ultimate then it becomes foolishness.

The condition of carrier stage can be correlated to a terrorist inside the city and currently not creating any problem but able to spread the terrorism within the city and nationwide. At that time as he is not active you may not kill him but take him to the custody, study about the his terrorism and develop the anti terrorism power.

The same thing body has to do in the carrier stage and the medicines should support the body to develop the antiterrorism power.

## 2. Strengthening the barricades.

What are **series of barricades**?

It is nothing but the immune system or defense mechanism of our body. Whenever any infectious agent enters the body it may not end with only producing the disease. Whether it produces the disease or not, it totally depends upon the immunity of the body. If your bodies barricades are not stronger the infectious agent crosses each barricades and finally will produces the disease.

The carrier stage is the stage of the disease where you have still scope to strengthen your barricades.

So do whatever it requires to strengthen the barricades.

Many specific host factors influence the likelihood of acquiring the infectious disease.

- Age
- Immunization
- History
- Prior illness
- Level of nutrition
- Pregnancy status
- Co-existing illness
- Emotional status.

All these have some impact on the risk of the infection after exposure to a potential pathogen.

- **Age:** Baala and Vriddha are however considered as having less immunity, and for them specific charyas has said in the samhitas. Many of the shodasha samskaras do boost the immunity and for whom all these are followed immunity may be better and but at the time of infection in carrier stage in baala and vriddha a bit more attention may be required so that spread from them may be easier and that may turn to active phase bit quicker than adults.

- **Immunization** : If the typical immunization schedule as per govt rules is followed many of the infective diseases can be prevented and immunity can be maintained in optimal level.
- **Prior illness and co-existing illness:** they certainly reduce the immunity level of the body; so proper treatment of those disorders is must and much helpful to strengthen barricades.
- **Nutrition:**
  - Adequate nutrition is vital for a healthy immune system
  - Nutrient deficiencies and excesses can harm the immune system
- **Pregnancy status:** its very vital to scan for any transmissible infections in pregnant lady to have precautions of spreading to the fetus.
- **Mental Status:** Has very vital role in the immunity. A altered status person is prone to infections and already infected person also will get altered mental status. So the role of satvavajaya chikitsa in infectious diseases like HIV and Hepatitis-B as counseling etc helps to prevent the spread of disease and also to prevent patients making suicide attempts.



## **Ayurvedic ways of strengthening the barricades.**

- Dinacharya
- Rutucharya
- Rasayana and Vajeekarana prayoga
- Satvavajaya
- Nitya ksheera ghruta maamsarasashana
- Sadvrutta and achararasayana
- Yoga and Praanayama

### **Rasayana :**

We can go with the naimittika rasayanas by seeing the involved srotas. If the patient is in carrier stage of some Pranavaha Sroto Vikara then go with the rasayana which helps in that. Similarly others. For that we need to know the srotas Specific or disease specific rasayanas.

### **Naimittika rasayana therapy pharmacological and biochemical mechanics**

- Nourishes and maintains the cell life nutraceutical action.
- Encouraging the growth of new cells.
- Preventing recurrent infection, expelling the damaged cells.
- Eliminate the toxic metabolites and pollutants.
- Keep the balance between mind and body.

### **Purpose of Naimittika rasayana therapy:**

- Bringing back to balance one or more panchabhootas, which get put out of balance from improper diet and digestion, agnimandaya, ama etc.

- Promotes physical, mental and subtle levels of our existence.
- Not aimed to kill pathogens but to increase the body's resistance.
- To assist the body's own healing energies.
- To activate the immune system to work the way nature intended to do.

**Srotas specific rasayanas :**

- Rasavaha srotas – Lakshmi vilasa rasa, Gandaka Rasayana, Pippali Rasayana, Trilokya chintamani, Shiva gutika.
- Raktavaha srotas - Guduchyadi modaka, Kooshmanda amalaka rasa, loha rasayana, dhatri-loha, arogyavardhini rasa.
- Maamsa vaha srotas – pippali rasayana, sooranamodaka, vyaghrihareetaki, bhallataka rasayana.
- Medovaha srotas – siddha makaradwaja, shilajatu rasayana, swarna vanga, vasantakusumakara.
- Asthivaha srotas – tiktaghrita, ksheera, pravala, gandhataila.
- Majjavaha srotas – lashuna rasayana, brahma rasayana.
- Shukravaha srotas – shatavari, vidarikanda, ashvagandha, vidaryadi lehyam.
- Pranavaha srotas – agastya haritaki, vyaghri haritaki, chyavanaprasha, pippali rasayana, nagabala rasayana.
- Annavaha srotas – chitraka hareetaki, kooshmaanda rasayana, pippali rasayana.
- Udakavaha srotas – keshara paka, pooranachandrodaya rasa, pooga kanda.
- Pureesha vaha – vidanga rasayana, hareetaki rasayana, bilwadi lehyam, triphala rasayana.
- Mutravaha srotas – shilajatu yoga, pashanabhedadi yoga, gokshura, siddha makaradwaja.

**The plants which are said to be immune enhancers.**

- Amalaki
- Ashwagandha
- Yashtimadhu
- Pippali
- Atibala
- Tulasi
- Punarnava
- Guduchi
- Haridra
- Musta
- Hareetaki
- Gokshura
- Mandookaparni

When we can get the incubatory carrier we can also go with the treatment said for the prasaravastha.. Its nothing but the Doshapratyaneeka Chikitsa. Which dosha is involved ac to that one can go with the particular treatment.

if he is a convalescent carrier one can go for treatments like jvaramukte virechanam etc. where one can increase the immunity and reduce the re-occurrence and spread.

If he is the healthy carrier one can go for

अजातानाम् विकाराणाम् अनुत्पत्तिकर चिकित्सा-

षष्टिकान् शालि मुद्गांश्च सैन्धवामलके यवान् ।

आन्तरिक्षं पयः सर्पिः जाङ्गलं मधु च अभ्यसेत् ॥

## Research works :

1. To evaluate the efficacy of rasayana in the management of HIV/AIDS a controlled clinical study by Dr. Abdul Khader Patel.

### Group A – test group

- Hareetakyadi churna
- Ashvagandhadi lehya
- Churna of indigenous drugs.

Results: Among 12 pts 10 got increases in the CD4+ cell count than the previous values.

### Group B – control group

- Hareetakyadi churna
- Placebo capsules.

Results: In this group except 3, all 9 pts had decline in the CD4+ cell count.

**Our rasayana drugs proved to have an effect on improving once immune as well as health status.**

2. Managemnet of Shaakashrita kamala w.s.r.to viral hepatitis-B. By Dr.Sameer N Naik

### Materials and methods:

20 patients of Hepatitis-B were given with

- Trikatu churna
- Moorchita ghruta
- Trivrit lehya
- Swarasa prepared of – KNABB for 30 days excluding virechana.
- 3 months follow up period.

**Results: the sero conversion was observed in all 20 patients.**

## Conclusion:

- Since the world war II, it is just the era of antimicrobials, but day by day misuse of those antimicrobials is increasing than the use.
- In developed countries like USA, UK it needs many investigations including sensitive tests to prescribe an antibiotic even though those are originate from their land but in India its just like buying a coke.
- I am not against prescribing the antibiotics but the genuine prescription is required at least by Ayurvedic physicians why because modern world is blaming Ayurvedic physicians for antibiotic resistance, as improper prescriptions.
- Understanding of carrier stage is found bit difficult but I have tried my best to correlate to those of prasaravastha, or svastha, or punaravartaka jvara, etc.
- As an Ayurvedic physician we need to focus on second aspect of the treatment as STRENGTHENING THE BARRICADES rather than killing the microbes.
- To kill the microbes it requires plenty of research as in modern science, but you will not be sure of its success.
- So strengthen your defense academy rather than only studying and killing the terrorists.



***“The germ is nothing; the terrain is everything”- Louis Pasteur***