

AYURVEDIC

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# RENAISSANCE

THE COMPLETE MAGAZINE ON NATURAL HEALTHCARE



CONCEPT OF NIDRA (SLEEP)

PREVENTION IN AYURVEDA

CLINICAL APPROACH TO THE STUDY OF TRIDOSHA THEORY

CONTRACEPTIVES IN AYURVEDA

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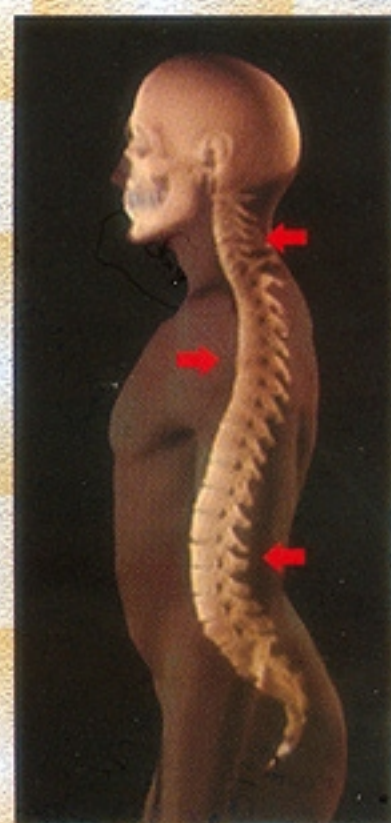
  
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*He who possesses good knowledge  
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of achieving the aims, just like a chariot  
of two wheels is capable of performing  
all its functions in the battle field*

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# PREVENTION IN AYURVEDA

\* Dr Deepak.S.Wali

\*\* Dr. Shivakumar.

\*\*\* Dr Mallika K. J.

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## Abstract

Every individual wish to be disease free, very few think to be Healthy. Prevention is better than cure is an old saying. But a question comes how to prevent ? The concept of prevention is mentioned in *Ayurveda* long back. A person desirable of health must Prevent Diseases before its manifestation. Understanding *Aptopadesha* properly and following it without fail is a measure tool of prevention.

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It's the era of modernization and machineries. The term Disease is very much common today. Everyone is cautious to know whether he is suffering from any Disease! But how many do ask a question to self that "Am I healthy?" What should be done to be healthy? How one can prevent the diseases? How my family will be healthy?

One should take care of his body by neglecting all other things because nothing exists, if you are not healthy<sup>1</sup>. Prevention is better than cure is an old saying. *Ayurveda* the science of life has given prime importance to the protection of the health of Healthy individual<sup>2</sup>. This can be achieved by means of preventing the diseases, Maintaining & Promoting health. *Swasthachatuska* of *Charaka* is totally dedicated for this purpose.

A person desirable of health must always Prevent the Diseases which are not there and also prevent the one which are not yet completely manifested by adopting proper measures<sup>3,4</sup>. The preventive measure (*Anagata Chikitsa*) is a vague term which includes all the possible measures which fulfill the aim of to be healthy :

The measure tool of prevention told in classics is to Understanding *Aptopadesha* properly and following it without fail<sup>5</sup>. Which emphasizes on 3 things *Samayoga* of *Jnana*, *Indriya-Artha* and *Kala*. Among which having proper knowledge plays important role as it leads to *Sukha* (Health) else it results in *Dukha* (Disease)<sup>6</sup>. Proper knowledge also lead to proper contact of *Indriya & Artha*. *Kala* is

considered as God which will ultimately decide Health.

Any sort of uneasiness to body and mind can be considered as a Disease. It may be as a result of Intrinsic (*Nija*) factors or extrinsic (*Agantuja*) factors. Disease also classified as *Adhyatmika*, *Adhidaivika*, *Adibhoutika*. Three main causes are explained for the disease formation i.e *Indriyarth Saanikarsha*, *Prajnyaparadha* and *Kala Parinama*, which may be too less, in excess or Improper. So to prevent Diseases and maintain health there is no other tool better than following *Aptopadesha*. Which says that *Swasthavrittapaalana* is the best way of prevention which is the key for health<sup>7</sup>. It is the primary prevention mentioned in classics.

*Swasthavritta* in short can be defined as a way of living or right conducts for Healthy. *Swa* : my own, *stha* : existence, *vrutta* : routine, *Swasthavrutta* means the routine to be followed for one's own existence. Which is explained under different headings. It can be considered as a general measure for the prevention and to healthy. As following it improperly results in diseases.

• ***Dincharya and Ratricharya*** : Which Explains about Daily regimen. Right from getting up early in morning till going to bed. Special emphasis given for Personal hygiene which ultimately helps to prevent all diseases & helps in maintaining personal as well as social health.

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### Ayurvedic Education – Need for integration with modern technology

Making the classics by-heart was an essential part of Ayurvedic education. In ancient India, knowledge was stored in the memory of scholars for thousands of years and retrieved whenever required. There has been a practice from the child hood to by-heart the whole text even without proper understanding of the meaning. It might be part of gaining knowledge and culture transfer through generations. When the classics were being taught systematically, pupils could recollect and recite the relevant verses according to the context. In those days, teachers ensured the perfect feeding of the whole text to the memory of the disciples. That tradition continued. This method of instruction reflected in the assessment of patients and diseases, diagnosis of cases and prescription of medicines, right from the bedside clinical classes to the examinations in Ayurvedic education. Each and every findings and answers related to the above were supported by appropriate classical references.

Nowadays, by-hearting of scientific verses has become old fashioned. Students have started to question the need of learning Ayurveda in Sanskrit verses. No doubt, proper understanding of a subject is better than learning by heart. In order to be an authority of the subject, one should cite the relevant classical verses along with deliberations. Ayurvedic classical references are considered as the final word in this respect.

Individual and joint efforts brought significant results in computerizing assessment of 'prakrthi, differential diagnosis, dosha predominance etc.

As a result, downloading a reference is a matter of seconds.

An extensive corporate task should be initiated to develop comprehensive and authentic software for an accurate diagnosis and treatment. This will prevent iatrogenic complications in Ayurvedic practice, keeping individual and intellectual efficiency and uniqueness unchallenged.

A man made brain could never be a perfect substitute. Classical references in time could trigger intellectual contributions. Therefore, a by-hearting of classical verses with proper understanding is necessary. Hence it should be promoted with the help of modern technology at all levels of Ayurvedic education.

**Thus comes the Renaissance.**

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# CONCEPT OF SLEEP (*NIDRA*)

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## Introduction:

About one third of our lives we spend asleep. Through the ages, sleep has occupied a special place in human concern. Ayurveda has also given more importance by considering it one among *Trayopasthambha*. Other *Samhitas* and *Upanishadas* were also detail described regarding *Nidra* utpatti type and its importance. Yet in modern era only for the last half century it becomes the most universal subject of human concern to examine its mysteries and mechanisms.

## Derivation:

*Nidra* is derived from the root "*Dra*" with a prefix '*Ni*'. The root "*Dra*" means undesired. Therefore *Nidra* is considered as a state in which there will be no desire. This is also a state of nature, which causes encapsulation to the consciousness of the person.

## Synonyms:

- *Shayanam, Svapah, Svapnam, Sambashah (Amarakosa)*
- *Sambasaha Suptih, Svapnam (Vaidyaka Sabdhasindhu)*
- *Susupti (Manduka Upanisad)*

## Nidra:

The mythological story tells that the evolution is set in when *Sristikarta Brahma* is in awakened state and the destruction (*Pralaya*) occurs when he goes to sleep. So sleep of *Brahma* is a destructive state for living beings but for living beings in the world including plants, the sleep is essential like food, water and air. So the scholars of Ayurveda has given importance to the sleep by considering it one among *Trayopasthambha* and discussed its role in maintenance of life (Ch. Su. 1/35).

Sleep is mentioned as one among the thirteen *Adharaneeya Vegas*. (Ch. Su. 7/4, A.H.Su.4/1).

The happiness, nourishment, strength, virility, knowledge and life depends on the proper or adequate sleep (Ch.Su. 21/36).

Charaka has called the Sleep as *Bhuta Dhatri* which occurred by nature of Night, that nourishes all the living beings. Sushruta has mentioned it as a *Svabhavika Roga* (Ch.Su. 21/58-59, Su. Su.24/7).

The timely taken sleep is an indicator of good health because it brings the normalcy in body tissues and relaxes the person (*K.S.Khi* 4/7). Like *Aahara* the adequate sleep is essential for maintenance of the body (Ch.Su. 21/51).

Sushruta called *Nidra* as *Vaishnavimaya* on a metaphoric language which is a physiological process and provides nourishment to the living body and maintains the health (*Su.Sha.4/33*).

*Yogaratanakara* has mentioned 4 natural instincts or basic needs for the human being. These are desire to take food, water, sleep and sexual pleasure (*Y.R. Pu.kh./64*).

*Bhavaprakasha* has described importance of sleep in fetal life. He has emphasized that the fetus in the womb enjoys better rest and comfort when the mother sleeps during pregnancy (B.P. Vol-1, Chapter III. Sloka No.- 317).

## Definition of Nidra :

*Nidra* cannot be explained in a concise form. From the time immemorial it is a question in every mind that what is sleep, how it occurs and what is its role in health. Though there are various views regarding sleep but all considered it as one of the essential function for the living beings.

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### Different opinions are as follows:

- (i) Sleep is the mental operation having the cognition of absence for its grasp.  
The commentator Vyasa made it clear that the sleep is a state of unconsciousness, but the consciousness remains about his own unconsciousness (Vyasa on Patanjali Yogasutra Samadhi Pada – 10).
- (ii) According to *Manduka Upanishad* Nidra is a condition in which “Atma” does not have any desire for any thing and it is called “Susupti” and also does not dream anything (*Manduka Upanishad*)
- (iii) *Chhandogya Upanishad* said the state in which the mind is unaware about surroundings and does not see any dreams is called Supta or Nidra (*Chha.Up. 8-6-3*)
- (iv) Sleep is nothing but the temporarily loses the contact with *Jnanendriya* and *Karmendriya* which is termed as Nidra (*Su.Su. 15/40*).
- (v) Nidra is the state of life where *Jnanendriya* and *Karmendriya* are not doing their functions (S.S.M).
- (vi) Nidra is the state where mind and intellects are at rest (S.K.).
- (vii) Nidra is the phenomenon which occurs usually with *Samyoga of Ratri (Vachaspathyam)*.
- (viii) *Sharngadhara* mentions that Nidra is a state where predominance of *Kapha* and *Tamas* is seen (*Sa. Pu.Kh.6/4*).
- (ix) *Adhamalla* defines Nidra as the state in which the *Tamoguna* combines with *Kapha*. He further says *Mohavastha* of *Indriya* and *Mana* is called as Nidra.
- (x) *Dalhana* states that Nidra is the state of combination of mind and intellectual in which the person feels happy (*Dalhana on Su.Su.1<sup>st</sup> Chapter*).

### Nidra Utpatti:

Since the dawn of the civilization the thinkers of various countries in the world have tried to study the sleep, its nature and causes which is a mysterious thing. But in India our ancient Acharyas had clear

idea regarding the physiology of sleep but explained in different manners. So these different explanations regarding the phenomenon of Nidra may be classified under 3 groups.

#### i) Upanishad concept

##### ii) Yogic concept

##### iii) Ayurvedic concept

#### i) Upanishad concept

- a) It was imagined by these ancient seers that Atma moves from Hridaya through the Nadis and get lodged inside the Puritata which is a membranous sac around the Hridaya, then the sleep follows (*Chha. Up. 8/6/3 & 6/8/1*).
- b) Nidra occurs when Atma goes to rest in the space inside the Hridaya (*Br. Ar. Up. 2/1/17-19*)

#### ii) Yogic concept

- a) The yogic philosophers in India have given explanations regarding sleep and also explained the samadhi state which resembles with sleep but is entirely different. They studied the ‘Yoga nidra’ a yogic phenomena pertaining to various states associated with Atma. They have termed these states as-

*Jagratavastha* – waking consciousness

*Svapnavastha* – Dreaming

*Susuptavastha* – Dreamless sleep

*Turiyavastha* – Conscious dreamless sleep

- b) Maharshi Patanjali states sleep is a state in which all activities, thoughts and feelings come to an end. In sleep the senses of perception rests in mind causing cessation of their functions as mind is also at rest.

#### iii) Ayurvedic concept:

Several concepts have been put forward by our ancient Ayurvedic Acharyas in their texts to explain the phenomenon of Nidra which can be studied under following headings.

#### a) Tamoguna theory

1. Sushruta explains Utpatti of nidra by giving importance to Hridaya which is considered as Chetana Sthana. When Chetana Sthana Hridaya is over come or enveloped by Tamas, the person goes to sleep (*Su.Sha. 4/34*).



• **Rutucharya** :- Explains in detail about seasonal regimen which helps in preventing the seasonal diseases. By following *Rutucharya* one can face seasonal changes easily and sustain health.

• **Padamshika Karma** : Is nothing but leaving unwholesome & adapting wholesome diet and regimen stepwise. Especially helpful during the time between two seasons. By which person gets adjusted to the forthcoming season easily and will not face any sort of uneasiness & also helps in Prevention of seasonal diseases.

• **Rutunusara Shodhana** : Also importance is given for Sanchit Dosha Nirharana in respective Ritus helps in maintenance of health & Prevention of seasonal diseases.

• **Sadvritta** :- Right conduct of life which briefs about Code of general ethics, Code of diet, natural urges, Relation with women, Self control, Social behavior along with instruction for Studying & worshipping. Following *Sadvritta* leads to Social health, hygiene alongwith Physical, Mental, Social & Spiritual wellbeing. It also helps in Prevention of communicable diseases and epidemics.

• **Ahara, Nidra & Brahmcharya** are considered as 3 pillars of body. Following them properly will help in maintenance of health and prevent the diseases.

• **Adharniya vega** : With holding the urges leads to Diseases. One, who wishes that he should not suffer from disease, must not suppress *Adharniya Vega* (Urges not to suppress) Like Mala, Mutra etc.

• **Dharaniya vega** : The urges which are told to suppress like anger etc which may *Kayika, Vachika & Mansika Vegas* (urge) must be suppressed.

• **Rasayana** : Nitya Rasayana Prayoga is done to boost the immunity, to maintain , protect Health and prevent various diseases.

**General rule for right conducts for Healthy<sup>8</sup> :** One Should always practice all the tastes (*Rasa*) and one should always indulge in things which are opposite to his body constitution (*Prakruti*) taking in consideration *Desha, Kala and Atma*. This we

can also consider under primordial prevention where one should take in account the risk factors.

Apart from general measures for prevention Specific Measures are also been explained in various contexts. Considering the different factors, adopting suitable measures not only helps in preventing the diseases but also helps in preventing any sort of complications and also helps to improve the quality of life.

Social health :	Related to women & health of new born:
<ul style="list-style-type: none"> <li>▪ <i>Sadvruttapalana</i>,</li> <li>▪ <i>Graha Nirmanavidhi</i>,</li> <li>▪ Contraceptive measures and Gramyadhama is explained in detail which help in Population control and also help in prevention of STD.</li> <li>▪ Various procedures for <i>Bhoomi, Jala, Vayu shuddhi</i> are told &amp;</li> <li>▪ Social Behavior helps in prevention of communicable diseases</li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>R a j a s w a l a Paricharya</i></li> <li>▪ <i>Garbhini Paricharya</i></li> <li>▪ <i>Sutika Paricharya</i></li> <li>▪ <i>Sutikagraha</i></li> <li>▪ <i>Nabhinalichedana</i></li> <li>▪ <i>Sanskaras</i></li> <li>▪ <i>Shishu Paricharya</i></li> <li>▪ <i>Rakshakarma</i></li> <li>▪ <i>Visankramana</i></li> </ul>

All measures told in social health helps in prevention of various communicable & non-communicable diseases, also maintains social health. Various measures are also been explained for women, pregnant lady and the new born which serves the purpose all prevention and health.

During Disease Manifestation	During & after Treatment
<ul style="list-style-type: none"> <li>▪ <i>Kriyakala</i> : chance for prevention / treatment</li> <li>▪ <i>Pathyapathya</i></li> <li>▪ <i>Nidana Parivarjana</i></li> <li>▪ <i>Padanshika karma</i></li> <li>▪ <i>Langhana</i></li> <li>▪ <i>Upashaya</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Pathyapathya</i></li> <li>▪ <i>Rasayana</i></li> <li>▪ <i>Shamana</i> : Selection of drug &amp; Treatment is done carefully</li> <li>▪ <i>Shodhana</i> :Precautions are followed.</li> <li>▪ <i>Shastra</i> : <i>Shastra Payana</i> etc</li> <li>▪ <i>Rugna Paricharya</i></li> <li>▪ <i>Rugnagara (Vranita)</i></li> </ul>

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# A CLINICAL APPROACH TO THE STUDY OF TRIDOSHA THEORY AND ITS APPLICATION IN MODERN THERAPEUTICS WITH SPECIAL REFERENCE TO THE EFFECT ON SOME NANATMAJA DISEASES.

\* SUJEET KUMAR

\*\* B.K. DWIVEDY

\*\*\* N.P.RAI

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## Abstract: -

The study was carried out to assess effect of *Vata*, *Pitta* and *Kapha* on human physiology. In the present clinical study, total 60 patients of *Nanatmaja vikaras* (20 patients for *Nanatmaja Vata vikara*, 20 patients for *Nanatmaja Pitta vikara* and 20 patients for *Nanatmaja Kapha vikara*) were recruited in three experimental groups. Each group was treated with an established treatment of modern medicine; symptomatically viz. patients of *Nanatmaja Vata vikara* were treated by Antianxiety drugs, patients of *Nanatmaja Pitta vikara* were treated by lactulose and patients of *Nanatmaja Kapha vikara*, received Anabolic steroids. All 60 patients were interviewed and examined before and after treatment. After treatment the patients were again interviewed and examined and all the changes compared with the initial status (pre treatment) used for data making in the present study. The intragroup comparison for objective and subjective parameters was done using paired 't' test and  $\chi^2$  test respectively. Here it was found that respiratory rate and pulse rate were increased to some extent in *Nanatmaja vikara* of all *dosha*. In case of subjective parameters different results were observed.

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**Keywords: -** *Nanatmaja vikara*, *Tridosha* theory, Blood pressure, *Aswapna*, *Haridrata*, *Balasaka*.

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## INTRODUCTION:-

*Tridosha* as said to be responsible for maintenance of homeostasis in the body and health is nothing but a state of equilibrium of *Vata*, *Pitta* and *Kapha*<sup>1</sup>. All diseases occur due to disturbance in the equilibrium between these three *DOSHAS*<sup>2</sup>. The present study is devoted to the study of *Tridosha*, applicable in modern science. As we know for same disease the way of defining disease differs in ancient and modern science, because they are based on different basic principles. *Tridosha* theory is one among these basic principles of Ayurveda. In present time, we are almost dependant on some tools and techniques which are gifted by modern science during clinical examination viz Manometer, Thermometer etc. Here it is our aim to know the effect of *Tridosha* on our body by using modern biomedical tools and techniques.

### *Nanatmaja vikara*:<sup>3,4</sup>

The endogenous diseases of specific type (*Nanatmaja* = *Na* + *anatmaja* = *atmaja*) are

caused specifically by only one of the three *dosha*, without being combined with any other *dosha*. After careful study we found that these 80 types of *Vata vikaras*, 40 types of *Pitta vikaras* and 20 types of *Kapha vikaras* are actually symptoms / complaints of a patient and not really of diseases so they provide a way of quick diagnosis. The ratio of *Vata*, *Pitta*, *Kapha* is 4:2:1 in case of *Nanatmaja vikaras* respectively. One unit of *Vata* can produce 4 *vikaras* due to *Asu* and *Chal guna*, one unit *Pitta* can produce 2 *vikaras* due to its *Tikshna* and *sar guna*. The *Manda* and *Sthir guna*, of *Kapha* produces only one *vikara*.

## METHOD OF STUDY:

60 patients were selected for this study and interviewed and examined using a specific Proforma to obtain information about the disease and clinical features. Finally collected data were used for observation of this study.

---

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All 60 patients were divided into three groups each containing 20 patients of a *Nanatmaja vikara*.

All the three groups were treated by using established treatment mentioned in modern medicine viz.

- 1) ***Aswapna (Nanatmaja Vata vikara):-***  
Sleep onset insomnia is often Psychophysiological<sup>5</sup>. An anxious preoccupation with the perceived inability to sleep adequately. Hence the patients of this group were treated with antianxiety drugs<sup>6</sup>.
- 2) ***Haridratwa (Nanatmaja Pitta vikara):-***  
Patients of this group were treated with lactulose<sup>7</sup>.
- 3) ***Balasaka (Nanatmaja Kapha vikara):-***  
Patients of this group were treated with anabolic steroids<sup>8</sup>  
Only those patients were recruited for studies who improved / cured after treatment. So changes in clinical features observed were used for data making in this study

#### SELECTION OF PATIENTS: -

##### a) Inclusion criteria: -

- i) Age: - All age groups
- ii) Sex: - Patient of both sexes
- iii) Patients Category:

All the 60 patients were selected randomly from *Kayachikitsa* OPD, IMS, BHU. For this study samples were divided in three groups—

(a) The Group I consisted of 20 patients of *Aswapna Nanatmaja vikara*, of *Vata*.

(b) The Group II consisted of 20 patients of *Haridratwa Nanatmaja vikara* of *Pitta*.

(C) The Group III Consisted of 20 Patients of *Balasaka Nanatmaja vikara*<sup>11</sup> of *Kapha*.

Only *Nanatmaja vikara* of different *dosha* were considered for this study.

Only one *Nanatmaja vikara* of one *dosha* was subjected to study.

##### iv) Habitat: -

All patients were selected from *Sadharan desa*.

*Nanatmaja vikara* may be *dosha vrridhi* / *dosha kshaya avastha*.

##### b) Exclusion criteria :-

- 1) We have not considered influence of diet in this study.
- 2) Season in which Patient improved / cured not considered in present study.
- 3) Degree of *dosha prakopa* or *dosha kshaya* was not considered in present study.
- 4) Patients suffering from chronic diseases were not included for study of *Kapha dosha*.
- 5) For *Haridratwa*, Patients suffering with obstructive jaundice were excluded from this study.

##### PARAMETER'S FOR ASSESSMENT:-

The assessment of the effect of established treatment mentioned in modern medicine, on these *Nanatmaja vikara* was based on following objective and subjective parameters.

**Objective parameter:-** Pulse rate, Respiratory rate.

**Subjective parameter:-** Bowel habit and Bladder habit .

#### GUIDELINE FOR MEASUREMENT - OF PULSE RATE<sup>12A</sup> AND RESPIRATORY RATE<sup>12B</sup>

For measurement of Pulse rate, Respiratory rate standard method was used.

**A) Bowel habit: -** Bowel habit of patient was studied for its three features

- a) Frequency
- b) Consistency (hard or loose stool)
- c) Amount

Each of these 3 features were divided into 2 category increased or decreased.

**(a) I) Gradation for increased frequency:-**

- a) 0 = Normal frequency (1-2 times/day)
- b) 1 = 3-4 times/day
- c) 2 = > 4 times/ day

**II) Gradation for decreased frequency:-**

- a) 0 = Normal frequency
- b) 1 = Stool passing alternate day's
- c) 2 = Stool passing after 2-3 day's



- (b) I) Gradation of increased consistency
- O = Normal consistency
  - 1 = Hard stool with out difficulty in defecation
  - 2 = Hard stool with difficulty in defecation.

II) Gradation for Decreased Consistency

- O = Normal stool
- 1 = Watery but formed stool
- 2 = Watery stool unformed

(c) I) Gradation for increased amount

- O = Normal amount
- 1 = Increased up to 20% of normal
- 2 = Increased > 20% of normal

II) Gradation for decreased amount

- O = Normal amount
- 1 = Decreased up to 20% of Normal
- 2 = Decreased > 20% of Normal

**B) Bladder habit: -**

Bladder habit of patient was studied for its two features viz frequency and amount.

(a) I) Gradation for increased Amount

- O = Normal amount
- 1 = Increased up to 20% of normal
- 2 = Increased > 20% normal

II) Gradation for decreased amount

- O = Normal amount
- 1 = Decreased up to 20% of normal
- 2 = Decreased > 20% of normal

(b) I) Gradation of increased frequency

- O = Normal frequency  
(5-7 times/24 hr.)
- 1 = 8-10 times/24 hr.
- 2 = >11 times/24 hr.

II) Gradation of decreased frequency

- O = Normal frequency  
(5-7 times/24 hr.)
- 1 = 3-4 times/24 hr.
- 2 = >2 times/24 hr.

**OBSERVATION AND RESULTS:-**

**OBSERVATIONS IN OBJECTIVE PARAMETERS –**

**Table 1 :-** Showing statistical significance in pulse rate in patients of nanatmaja vikara after using established treatment of modern medicine.

Group	Pulse rate (mean±SD)		Within the gr comparison BT-AT (paired t Test)
	BT	AT	
Gr I n = 20	95.60 ± 10.61	86.90 ± 8.84	8.70 ± 8.78 HS T = 4.43 and P<0.001
Gr II n = 20	89.50 ± 12.41	82.90 ± 6.63	6.60 ± 11.77 S<0.05 T = 2.50 and P<0.21
Gr III n=20	97.40 ± 8.46	84.70 ± 6.84	12.70 ± 3.69 NS T = 15.40 and P<0.00

**Comments: -** we find that decrease in mean pulse rate was 8.70, 6.60 and 12.70 respectively in Group I, Group II and Group III. So results are highly significant in Group I and Group III while only significant in group II.

**Table2:-** Showing Statistical Significance in Respiratory rate in patients of Nanatmaja vikara after using established Treatment of modern medicine.

Group	Respiratory Rate (mean±SD)		Within the gr. comparison BT-AT (paired t Test)
	BT	AT	
Gr I n = 20	20.15 ± 3.51	18.15 ± 1.84	2.00 ± 3.16 S P<0.02 T = 2.83 and P<0.11
Gr II n = 20	23.80 ± 2.78	20.25 ± 1.97	3.55 ± 2.28 HS T = 6.96 and P<0.01
Gr III n=20	25.30 ± 3.61	21.25 ± 2.05	4.05 ± 3.33 HS T = 5.44 and P<0.01

**Comment: -** We find that Decrease in mean respiratory rate was 2.00, 3.55 and 4.05 respectively in Group I, Group II, and Group III. So results were highly significant in group II and Group III while significant only in Group I.

**OBSERVATION IN SUBJECTIVE PARAMETER –** For subjective parameters chi-square test was done. These parameters was bowel habit and bladder habit.



**1) Bowel habit (Frequency):-** In Group I, 7 patients were in increased frequency group and after treatment 2 patients were recorded. The chi-square value (BT vs AT) was 3.58 which is non significant. In Group III in place of 12 patients, 1 patient was recorded for increased bowel frequency. Chi-square value was 13.88 which is significant.

In Group I, 7 patients were recorded in decreased bowel frequency group and after treatment no patient was in this group value of chi-square was 8.45 which is significant.

Due to sum of expected frequencies were less than 5, so increased bowel frequency in Group II and decreased bowel frequency in Group II and Group III was not applicable for chi-square test.

**2) Bowel habit amount:-** In Group I, 15 patients were in decreased frequency category and after treatment 2 patients were recorded the chi-square (BT vs AT) value was 17.29 which is highly significant. In group II and Group II, 9 and 12 patients were in decreased frequency group respectively and after treatment 2 patients were in group I and 2 patients in group III for decreased frequency category respectively. Both results were significant.

Due to sum of expected frequencies were less than 5, so increased bowel frequency in all the three groups was not applicable chi-square.

**3) Bowel habit (Consistency) :-** In group I, II, III initially 14, 985 patients were in hard stool category and after treatment only 1 patient recorded in group I passing hard stool. Chi-square value (BT vs AT) was 18.20, 11.61 and 5.71 respectively for Group I, Group II and Group III. So data highly significant in Group I and Group II and only significant in Group III.

In group I, II and III initially 5, 6 and 10 patients were respectively in loose stool category, and after treatment no patient recorded passing loose stool. Chi-square value (BT vs AT)

was 5.71, 7.06 and 13.35 respectively for Group I, Group II and Group III. So data are highly significant in Group II and Group III and only significant in Group I.

## **BLADDER HABIT**

### **I) Bladder habit (frequency):-**

In group I, II and III initially 10, 2 and 13 patients were in increased frequency of bladder habit category and after treatment only 1 patient recorded in group I having increased frequency of bladder. Chi-square value (BT vs AT) was 10.24, 2.10 and 16.41 respectively of Group I, Group II and Group III. It is highly significant for group I and III and non significant for group II.

Due to sum of expected frequencies were less than 5 so data was not applicable for chi-square value in all the three groups.

### **II) Bladder habit (Amount):-**

Due to sum expected frequencies were less than 5 so data was not applicable for chi-square in all the three groups for bladder habit amount category.

As mentioned earlier that bowel habit, bladder habit were assessed subjectively. So for these CHI-SQUARE test was done.

## **Discussion: -**

*Tridosha* in normal state support the body like the pillars of a house, this is why *Tridosha* is known as *Tristhoon*. Just as they support the body, they will also damage its functions, when they themselves become vitiated by any cause.

### **Qualities of Vata<sup>13</sup>:-**

*Vata* is *amurta* (formless), *asamghata* (diffuse, all pervasive), *Adrista* (invisible the naked eye), *dristakarma* (initiates functions being perceivable), *karmanumeya* (its presence to be understood by its functions), it possesses qualities such as *Ruksha* (dryness), *sita* (cold), *khara*



# CONTRACEPTIVES IN AYURVEDA

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The methods or the measures which prevent unwanted conception are contraception. In modern science several types of contraceptive methods have been explained which specifically acts on Sperm, Ovum and at Hormonal level. Some of the methods are for female and some others for male. Among these, few are safer methods while few others may sometimes cause complications. Proper awareness and administration of the methodology will ensure the exact benefit without any complications.

Conception of healthy offspring, avoiding unwanted pregnancy, maintaining intervals between two pregnancies and controlling population in the family as well as society are the benefits of contraception and planned pregnancy.

So many principles are explained and followed since ancient time like following *Brahamcharya*, marriage after attaining desired age, observing contraindicated days and safe period for sex, measures to control coitus and chanting mantras for destroying *veerya* of *sukra* & *arthava* to prevent conception.

Some preparations compiled from classics are noted here for further research and studies in this area.

## CONTRACEPTIVE PREPARATIONS FOR ORAL CONSUMPTION

- ♦ Oral administration of *Pippali*, *Vidanga* and *shuddha Tankana* equal quantity in powder form with milk during menstrual cycle.
- ♦ Oral consumption of *kanji* with *Japakusuma* and *purana guda* with chanting *matra* during menstrual cycle.
- ♦ *Tanduliya mula mixed* with *Tanduliya jala* during the last 3days menstrual cycle.

*Taleesapatra* and *Gairika* in equal quantity at the dose of 10grams along with *sheetajala* from the 4<sup>th</sup> day of menstrual cycle.

- ♦ *Patha patra mardana* with *jala* after *rutukla snana*.
- ♦ *Sarshapabeeja* along with *tanduliyakjala* in *rutukala* for the the duration of 7days.
- ♦ *Sarshapa*, *Shali* and *Sharkara* in equal quantity with *tanduliyaka*.
- ♦ *Sharshapa* dipped in *Tila taila* for 3days and consumed for 3days during menstrual cycle
- ♦ *Chitrakamula* purified in *tanduliyakajala* is taken internally after *rutukala* for the duration of 3days.
- ♦ *Shalmalipushpa*, *Ksheeriruksha* along with *palashabeeja* and *madhya* for 15days.

## PREPARATIONS FOR EXTERNAL APPLICATION

- ♦ *Yoni pichu dharana* of *Saindavalavana* dipped in *Tilataila* before coitus and follow the *gamana*.
- ♦ *Dharana* of *datthura churna* in *yoni*.
- ♦ Tying the root of *Datthura* on the waist during *krishnapaksha chaturdashi* at the time of intercourse
- ♦ Applying *Palashbeeja churna* mixed with honey to the *garbhashayamukha*
- ♦ Applying the powder of *Jatamamsimula*, *Langalimula*, *Kiratatikta*, *Devadali* and *Koshataki* over the *nabhipradesha*
- ♦ Applying paste of *Kushumbha* and *Punarnava* over *pada*
- ♦ Applying paste of *Chatakaanda*, *Ksheera*, *Sahadevi*, *Tilataila Swetakamala* and honey in equal quantity over *nabhi* of the *purusha*.

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Botanical name : *Abrus precatorius* Linn.

English : Jequirity, Indian liquorice, Wild liquorice

Hindi : *Gunchi, Ratti*

Malayalam : *Kunni*

Sanskrit Synonyms: *Gunja, Kakanantika, Kakapilu, Raktika, Kakadani*

Family : Fabaceae

#### Ayurvedic Properties

*Rasa* : *Tikta, Kashaya*

*Guna* : *Guru, Teekshna, Rooksha*

*Virya* : *Ushna*

**Distribution** : Throughout India, growing wild on bushes and hedges.

**Plant Description** : A deciduous climber with tough branches. Leaves pinnately compound with many pairs of leaflets, leaflets oblong; flowers pink, found in clusters arranged on one side of racemose inflorescence; fruits pods; seeds usually scarlet with black spot or pure white colored.

**Medicinal Properties** : Plant pacifies vitiated *pitta, vata*, inflammation, vitiligo, skin disease, wounds, alopecia, asthma, stomatitis and fever.

**Useful Parts** : Root, Leaves, Seeds.

Contraceptives from Page 11

- ◆ *Prakshalana* of *garbhashaya* with *Saindavalavana, Spatika, Nimbukarasa* and *shudhajala* after coitus.
- ◆ Carrying *Varthi* in *garbhashaya* made from the fine powder of *Puranaguda, Madanaphala,*

*Yavakshara, Dronapushpibeeja* dipped in *mandugalliksheera* for several hour and dried.

- ◆ *Dhoopana* of *Nimbhatwak churna* to the *yonimukha* prior to inter-course.
- ◆ *Atharvaveda* describes chanting of *mantra* before coitus to avoids the *garbha*.

#### References:

*Yogaratanakara; Bhavaprakasha; Chakradatta; Vangasan; Bhaishajya Ratnavali*



# CYTOTOXICITY AGAINST CANCER CELLS AND IN VITRO ANTIOXIDANT ACTIVITY OF SOLANUM NIGRUM, COLEUS AROMATICUS AND IPOMEA PES-TIGRIDIS.

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## Abstract

Five extracts from three medicinal plants with cancer-related ethno botanical uses have been subjected to a bio screening study to detect cytotoxic activity and antioxidant activity. The plants studied were: *Solanum nigrum*, *Coleus aromaticus* and *Ipomea pes-tigridis*. Cytotoxicity towards Ehrlich Ascites Carcinoma (EAC) cells and free radical scavenging activity were assessed. The results obtained indicate that *Solanum nigrum*, *Coleus aromaticus* and *Ipomea pes-tigridis* contained cytotoxic compounds against EAC cells. *Solanum nigrum* ethanol extract have more activity against EAC cells than the other plant extracts. *S. nigrum* ethanol extract 10mg and 5mg/ml were showing 100% death in EAC cells. All of the plants were also studied for their free radical scavenging activity and total polyphenolic content. We found that free radical scavenging activity is more in *I. pes-tigridis*. So we came to the conclusion that *I. tigris* is a good anti oxidant and free radical scavenger while cytotoxicity against cancer cells is very less. *Solanum nigrum* on the contrary is having very strong cytotoxicity against cancer cells but poor anti oxidant property. A rational combination of both these herbs might give a new phyto medicine in cancer therapy.

**Key words:** Cytotoxicity, EAC cells, Anti oxidant, Polyphenol

## 1.0. Introduction

Traditional and indigenous systems of medicines have persisted for many centuries even where modern health care is readily available. A considerable proportion of people in developing countries depend on traditional medicines for their primary health needs. The world health organization has called the attention of many countries to the ever increasing interest of the public in the use of herbal medicines and encourages them to identify and exploit those aspects of traditional medicine that provide safe and effective remedies (Akah *et al.*, 1997).

The acquisition of new agents with chemotherapeutic value in the fight against cancer is obviously a medical problem of high importance, but the development of new drugs in the cancer field is a difficult task given that anticancer agents must be lethal to be able to incapacitate tumor cells without doing excessive damage to normal cells (Potter, 1983). Plants have been demonstrated to be a very viable source of clinically relevant anticancer compounds. However, ethno pharmacologic information has been poorly utilized in the past in the search for new principles against cancer (Mongelli *et al.*, 2000). In many ethno

medical systems, reports of specific uses of plants against tumor are rarely found, mainly because cancer is a disease that involves a complex set of signs and symptoms (Souza Brito and Souza Brito, 1993).

The present study is aimed to determine the cytotoxic activity in Ehrlich Ascites Carcinoma (EAC) cells and free radical scavenging activity of certain medicinal plants such as *Solanum nigrum*, *Coleus aromaticus* and *Ipomea pes-tigridis*.

## 2. Materials and methods

### 2.1. Plant materials

*Solanum nigrum*, *Coleus aromaticus* and *Ipomea pes-tigridis* were collected from Idukki, Kerala and the botanical identification was performed by botanists from the department of Pharmacognosy, Nagarjuna Herbal Concentrates Ltd, Thodupuzha, Idukki, Kerala. These plant materials (whole plant) were dried under shade and powdered and used for different extraction. The powder was suspended with hexane and stirred for 4hrs in a magnetic stirrer. Then it was filtered and the residue was dried well and added with chloroform, ethyl acetate, butanol and water in a raw and repeated as above. The filtrate was dried using rotary vacuum evaporator at below

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40°C. The yield of extracts is given in the Table I. For cytotoxicity study, the dried extracts were dissolved with minimum quantity of dimethyl sulphoxide (2% DMSO), then diluted 10-fold with phosphate buffered saline (PBS). For antioxidant activity the ethanol extract was dissolved in 80% methanol.

### 2.2. Ehrlich Ascites Carcinoma cells (EAC)

Ehrlich Ascites Carcinoma (EAC) cells were purchased from Amala Cancer Research Institute, Thrissur, Kerala, and were maintained in the mice, inside the peritoneal cavity by weekly intra peritoneal inoculation.

### 2.3. Determination of the *in vitro* cytotoxic activity.

EAC cells were separated from peritoneal cavity of mice and then three times washed with ice and cold phosphate buffered saline (PBS, pH 7.4). Cells were diluted as 0.1 ml containing one million cells. 0.1 ml of cells and various concentrations of the different extracts of various plants were made up to 1 ml with PBS. This was incubated for 3 hours at 37°C. The viability of the cells was determined by Trypan Blue Exclusion method (Subramoniam et al., 2005).

### 2.4. In-vitro antioxidant activity

Total poly phenol content was estimated by Yu et al (2002), free radical scavenging activity by 1,1-Diphenyl-2-picrylhydrazyl (DPPH) was assayed by Burits and Bucar (2000) and ,2'-azinobis-(3-ethyl-benzothiazoline-6-sulfonic acid) (ABTS) was assayed by Re et al (1999).

## 3.0. Results

### 3.1. Effects of the *in vitro* cytotoxic activity.

Cytotoxicity study was performed with EAC cells to determine the cytotoxic effect of different extracts of *S. nigrum*, *C. aromaticus* and *I. pes-tigridis*. The cell viability assay was performed by trypan blue exclusion method of *S. nigrum*, *C. aromaticus* and *I. pes-tigridis* on EAC cells is shown in Table II. In our results three concentrations of ethanolic extract of *S. nigrum* have obtained 100% EAC cell death when compared to hexane, chloroform, ethyl acetate and water extracts. Ethanol and water extracts of *C. aromatics* have equal cytotoxicity activity > 87% cell death, but 100% cell death was never achieved even at 10 mg/ml. The plant *I. pes-tigridis* hexane extract have obtained high percentage of cytotoxicity (>

90%) compared to other extracts.

### 3.2. Effect of the antioxidant activity of *S. nigrum*, *C. aromaticus* and *I. pes-tigridis*.

In vitro antioxidant and total polyphenolic content of *S. nigrum*, *C. aromaticus* and *I. pes-tigridis* were shown in table III. The IC<sub>50</sub> values of DPPH radical scavenging activity of these three plants are very high. *S. nigrum*, *C. aromaticus* and *I. pes-tigridis* have the IC<sub>50</sub> value of 656.5, 275.3 and 141.8 µg /ml respectively. The *S. nigrum* had very high IC<sub>50</sub> value compared to other plants. The same pattern was observed in ABTS method. The IC<sub>50</sub> values of *S. nigrum*, *C. aromaticus* and *I. pes-tigridis* were 234.1, 166.3 and 122.7 µg /ml respectively. The total polyphenolic content of *S. nigrum*, *C. aromaticus* and *I. pes-tigridis* were 8.2, 10.3 and 20.6 mg/g Gallic acid equivalents extract.

## 4.0. Discussion

Prevention and, possibly, cure of cancer with traditional herbal drugs and/or its active constituents is very much needed to get relief from the dreaded disease cancer, which is on the raise, among other things, due to exposure to carcinogenic agents and change of life style (Subramoniam, 2005). In this study, the cytotoxic activity on EAC cells and antioxidant activity of *S. nigrum*, *C. aromaticus*, *I. pes-tigridis* was studied. Plant and its active constituents such as flavonoids, terpenes, alkaloids (Osawa et al., 1990; Keith et al., 1990; Di Carlo et al., 1999), and so on have received considerable attention in recent years due to their diverse pharmacological properties including cytotoxic and cancer chemo preventive effects (Roja and Heble, 1994). Only a few of them have been scientifically explored. Scientific studies of plants used in ethno medicine led to the discovery of many valuable drugs. Cancer cells can develop resistance to apoptosis. It results from the defects in one or more key molecules in the apoptotic pathways or over activity of anti apoptotic factors that lead to the proliferation of cancer cells (Hanahan and Weinberg, 2000). The trypan blue exclusion method is most common and reliable method to assess the cytotoxicity / anticancer activity of natural products and synthetic agents. In our study, we analyzed different extracts of *S. nigrum*, *C. aromaticus* and *I. pes-tigridis* in various



# ROLE OF RASA OUSHADHIS IN PREVENTION AND MANAGEMENT OF AGEING

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## Abstract:

*Rasashastra*, the chemistry of Ayurveda is being practiced since centuries by human race to maintain their health and body, which helps them to reach the salvation (*Moksha*). *Rasa* scholars were firm in their belief that a healthy physical body (*DehaSiddhi*) is the key to achieve the above and the work done by various *Acharya* also reflects the same i.e. priority is given to develop a healthy body by using various *Rasa* drugs. *Jara* is being the natural phenomenon in this incarnation by the supreme, a healthy, disease Free State can be achieved with the use of *Rasa Rasayana* drugs in that particular stage of the human life. The minimal dose (*Alpamatra*) of *Rasa* drugs makes an added advantage to treat the sick as well as healthy. "*Rasa*" Oushadhis, the drugs of mercurial origin by name but in practice it means all the medicines of mercurial kingdom (*minerals*) having their better effect in the management of *Jara*. Although every drug of *Rasashastra* possess both therapeutic and *Rasayana* properties an attempt is made to highlight precisely the *Rasayana* property of the *Rasa* drugs in the present context.

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## Introduction

*Rasa Rasayana* drugs, the *Rasa* drugs that are used for *Rasayana* purpose are very much established in usage with the mankind for longevity of their lives. *Jara* in common practice called as Ageing is the natural degenerative process in the human life cycle. The *Rasa* preparations are confidently practiced in this particular stage as the dosage, tastelessness of almost all the *Rasa* preparations making their usage convenient. One more important thing is to be remembered its immortal potency, nature and palatability i.e. tastelessness of these drugs assure one to prescribe these in the elderly.

Ageing being common in this world in due course cannot be denied. This particular stage of the human kind can get through successfully if the person is healthy. In the present world, because of the lifestyle, occupation and demanding schedules the man acquire ageing process early along with so many life style disorders i.e. *Diabetes (Prameha)*, *IBS*, *Acid peptic disorders*, *Chronic Bronchitis etc.*, making to man kind experience a lot and forcing them to reach to this stage untimely. By using certain drugs of *Rasa* kingdom like *Rasa*, *Abhraka*, *Vanga*, *Naga*,

*Silajatu etc.*, man kind can safely and effectively post pone/ pass this stage of life i.e. ageing.

The usage of *Silajatu* as a *Rasayana*, adding the *Swarna*, *Rajata*, *Tamra*, *Pravala* & *Loha* in *Brahmi Rasayana*, the simple combination of *Dhatri* and *Loha*, *Swarnaprasana* along with ghee in new born baby, usage of *muktyadi churna* in *kasa*, *Swarna* as an antidote for poison in *visha chikista*, *Ayaskriti* (by name) by *Susruta* etc., by our ancient scientists can elicit the importance of *Rasa* drugs in therapeutics.

Here are the few important *Rasa* drugs, which usually come across in combination with the other drugs of mercurial kingdom and are very commonly used.

***Rasa (Mercury)***, an interior drug for the whole mercurial kingdom in *Rasashastra*. Mythologically, it is considered as *bija* (semen) of *Lord Siva* attributed with very pious qualities and a very commonly used ingredient in many compound drugs. *Rasa* makes the human kind free from *Jara* and *vyadhi*<sup>1</sup>.

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As it is available in the deep layers of earth crust it is mixed with the impurities. So, it is subjected to purifactory methods (*sodhana*) followed by incineration (*marana*) it makes competent to use in therapeutics. Our Acharyas clearly mentioned that, when mercury used in native form i.e. without subjecting it to *sodhana* and *marana* will acts as a poison where as after these procedures it is a nectar<sup>2</sup>.

Various *Rasa yoga* i.e. preparations exclusively of Mercury are indicated to use in the *Jara vyadhis* and also to those keep them healthy in that stage of the life. The very important drug of the *Rasashastra Purnachandrodaya rasa*, uttered with different names by different scholars is a drug of choice to the Ayurvedic Physicians of the present society for so many chronic cases like Bronchitis, Tuberculosis and Oligo-spermia etc.

It is commonly practiced (heard) by elders of Andhra region that, those who wish to act sexually vigorously they opt for this *Rasa* drug. It's a wrong concept that it acts only to increase libido. Usually the libido will be lost /lessened in elderly so the same as the other *dhatu*s.

Particularly in this context the role of *Purnachandrodaya Rasa* in *Dhatu kshinata* or in physiological decaying of the body can be attributed. Mercury being the main drug in compound drugs like *Siddha Makara Dvaja*, *Rasasindhura*, *Shadguna Sindhura* etc., and their usage in senile disorders can easily attributed to the drug Mercury.

The *yogavahi* nature of the mercury is the main feature for its usage in almost all diseases. *Rasa* (*Parada*) can be administered in incurable diseases also<sup>3</sup>.

*Gandhaka* (*Sulphur*), a very close alchemy friend of mercury routinely come across almost in all *Rasa* compounds except some. *Parada* when combined with *Gandhaka* the toxicity as well as the efficacy of *Rasa* will get effected. Different proportions of

*Rasa* and *Gandhaka* in the preparation of *Rasa Sindhura* and their different therapeutic indications can support the above. *Gandhaka* was supposed to be one of the most important substance, which was used along with *Parada* to form basic material i.e. *Kajjali* for scores of Herbo- mineral preparations. It has very important place in Therapeutics.

*Abhraka* (*Mica*), another important drug in mercurial kingdom, is a very common ingredient of *Rasa yoga*. Myth logically, the qualities are equated with *tejas* of Goddess *Parvathi*. Its boon to all *vata pitta* disorders. It was proved by the practicing *Rasa* scholars that, when it used in incinerated form (*Sataputi*), builds the immunity so that defend the secondary infections like chronic bronchitis etc., Almost all the drugs which act on respiratory system contain *Abhraka* along with other drugs. In General also *Abhraka* was highlighted in classics as. It was quoted as best *Rasayana* as well as Aphrodisiac<sup>4</sup>.

*Vanga* (*Tin*), is another drug in *Rasashastra* use in various ailments like *Prameha*, Genitor-urinary disorders etc, Indians are conscious about *Vanga* since centuries, but there is not much information can be gathered in *Samhitas*. *Vanga* is main ingredient in so many *Pramehahara Dravya* and for Genito uinary disorders like *Trivanga Bhasma*, *Vasanta Kusumakara Rasa*, *Vanga Bhasma*, *Pushpa dhanwa Rasa* etc.

Here it is to be recollected that, one of the properties of *Vanga* is "*Lavanyakara*". The word usually implies in developing the physical beauty. At the same time it can be tried in ladies who have masculine features like developing unwanted hair, Coarseness of the skin etc. Even now it is approved drug of choice for the nulliparous couple. *Vanga* and *Naga* are not used individually for *Rasayana* therapy. They are used along with *Swarna*, *Rajata* etc metals for this purpose<sup>5</sup>.



# MEDICINAL PLANTS USED AS ANTI-CANCER DRUGS

\* Baby Joseph, \* Sophy Paul, \*\* Dr. Nishanth Gopinath, \*\* Dr. S.J.Rekha

Cancer is an insidious disease affecting mankind in every country of the world. It is the second most common cause of death after cardiovascular diseases. Cancer is notorious in the sense that the disease can affect almost anyone, irrespective of age, sex, social or financial status. Also, cancer can attack almost any tissue in any part of the body. The battle to conquer cancer is an international effort. It has been estimated that over 40000 cancer patients in the USA are now cured annually by chemotherapy. Cancer in our country is thought to be a deadly disease with no hope of cure. This, however, is not true. For the treatment of cancer currently we have about thirty chemotherapeutic agents and out of these nearly one third are natural products. Recent research reveals that the natural products include antitumour antibiotics coming from some medicinal plants. Many medicinal plants having management of anticancer properties. Present study make an attempt to introduce few anticancer medicinal plants.

**Some plants are mentioned below :**

## **Allium sativum.Linn**

Family	- Alliaceae
English name	- Garlic
Sanskrit name	- <i>Lasuna</i>
Hindi name	- <i>Lahsan</i>
Malayalam name	- <i>Veluthulli</i>

## **Ayurvedic Properties :**

Rasa	- <i>Katu, madhura, lavana, tikta, kashaya</i>
Guna	- <i>Snigdha, Tikсна</i>
Virya	- <i>Usna</i>
Vipaka	- <i>Katu</i>
Actions	- <i>Vathakaphahara, rasayana, vrsya, balya, medhya, varnakara</i>

## **Habit & Habitat**

A hardy perennial herb, cultivated all over India.

## **Description**

A perennial herb with underground compound bulbs covered over by outer white thin scales and with simple, smooth, round stem, surrounded at the bottom by tubular leaf sheath. Leaves simple, long, flat, linear, flowers small, white in rounded umbels mixed with small bulbils, the entire umbel enclosed in a tear drop shaped membranous spathe, flowers usually sterile.

## **Parts used : Bulbs**

## **Chemical constituents**

Allicin, allinase, alliin, diallyl sulphide etc

## **Properties & Uses**

The bulb is used as a vermifuge, diuretic, carminative, expectorant and stimulant. The oil is used for skin rashes, as ear drops, flatulence and colic. It is used as anthelmintic and emmenagogue. The juice of garlic is used for various ailments of the stomach including amoebic dysentery. It is used as antitubercular drug and in the treatment of epilepsy. Garlic is commonly used as a condiment and for flavouring and seasoning of food products. The oil from the bulb is used as a tonic, stimulant and vermifuge.

## **Anticancer activity**

The chemoprotective action of garlic extract on 7,12-dimethylbenz anthracene (DMBA)- induced complete skin carcinogenesis system was studied in random bred 6-7 wk old, male Swiss albino mice. When garlic extract was topically applied twice daily for 3d every week, the incidences of tumours were reduced to 31.8 percentage(Rao et al 1990). Tumour reducing activity of extracts of eight commonly used

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spices in India were studied in mice transplanted intraperitoneally with Ehrlich ascites tumour. Oral administration of aqueous extract of garlic increased the percentage of life span of mice by 41.1 percent. Diallylsulphide, the major flavour component of garlic had a protective role in polycyclic aromatic hydrocarbon- induced mouse skin carcinogenesis induced by DMBA or BaP.

### **Abrus precatorius. Linn**

Family	- Fabaceae
English name	- Crab's eye
Sanskrit name	- <i>Gunja</i>
Hindi name	- <i>Gunchi</i>
Malayalam name	- <i>Kunni</i>

#### **Ayurvedic Properties:**

<i>Rasa</i>	- <i>Tikta, kashaya, madhura</i>
<i>Guna</i>	- <i>Ruksha, Tikshna</i>
<i>Virya</i>	- <i>Usna</i>
<i>Vipaka</i>	- <i>Katu, madhura</i>
<i>Actions</i>	- <i>Kaphavathahara, vedanasthapana, kesya, vrsya</i>

#### **Habit & Habitat**

A climber found throughout India, upto an altitude of 1050 m in the outer Himalayas.

#### **Description**

A deciduous wiry climber with tough branches, leaves pinnate with many pairs of leaflets, the rachis ending in a spine, the leaflets oblong, rounded at both ends, thinly membranous, flowers pink, fruits pods, seeds scarlet with a black spot or sometimes pure white.

**Parts used:** Roots, leaves, seeds

#### **Chemical constituents**

Abrine, Abraline, stigmaterol, precatorine, abrectorin, premotorin etc

#### **Properties & Uses**

The root and leaves possess diuretic, emetic and tonic properties and are used for gonorrhoea and jaundice. A decoction of the leaves is widely used for cough, cold and colic. The leaf juice is employed as a cure for hoarseness and mixed with oil it is applied to painful swellings. Seeds are purgative, tonic and aphrodisiac. The seeds are administered internally in the affections of the nervous system and their paste

is applied locally in stiffness of shoulder joint and paralysis. It is also useful in diarrhoea, dysentery and possess anthelmintic activity.

#### **Anticancer activity**

A protein extract isolated from the seeds showed anti tumour activity on Yoshida sarcoma in rats and a fibrosarcoma in mice. The intraperitoneal route of administration was more effective than the subcutaneous injections. The extract had a direct cytotoxic effect on the tumour cells. Vacuolation and disruption of cytoplasm accompanied by karyolysis and chromosomal abnormalities were seen in ascites tumour cells treated with the protein in vivo. This was also confirmed by in vitro studies. The tumour cell incubated with the extract showed cellular pathology, decreased viable cell counts and prolongation of survival period of the tumour transplanted animals (Subba Reddy and Sirsi, 1969). The aqueous extract of the seeds when tested against Ehrlich's ascites carcinoma in transplanted mouse tumours for anticancer activity was toxic and all the experimental animals died before the experiment was completed at the test doses of 3 and 12 mg/kg I.p (Pal et al, 1968)

Out of the various fractions of purified proteins of the seeds studied for their haemaagglutinating properties, toxicity to rats and antitumour activity against Yoshida ascites sarcoma in rats, only fraction (A5b) possessed antitumour activity (Lalithakumari et al, 1971)

### **Acacia catechu. Linn**

Family	- Mimosaceae
English name	- Cutch tree
Sanskrit name	- <i>Khadira</i>
Hindi name	- <i>Kattha</i>
Malayalam name	- <i>Karingali</i>

#### **Ayurvedic Properties:**

<i>Rasa</i>	- <i>Kashaya, Tikta</i>
<i>Guna</i>	- <i>Laghu, Ruksha</i>
<i>Virya</i>	- <i>Sita</i>
<i>Vipaka</i>	- <i>Katu</i>
<i>Actions</i>	- <i>Kaphapithahara</i>



# PHARMACOLOGY OF RESULT ORIENTED RASAUSHADHIS

Dr.M.C.Patil\* Dr.G.N.Danappagoudar\*\* Dr.R.C.Satish kumar\*\*\*

## INTRODUCTION:

- *Rasavaidya Paddhati* is a unique system of treating the vyadhis as it adopts a novel approach to the management of vyadhis.
- *Rasousadhis* plays an important role in the medicine. As it has been stated in many *Rasashastra* treatise that mercury kills the diseases and death when it is in the state of *Murchhitavastha*.
- “*Uttamo Rasavaidyastu Madhyamo Mulikadhibhi | Adhamaha Shastra Dahabhyamithan Vaidyam Tridha Mathohi*”||
- The *Rasoushadhis* are administered in a smaller dose and provide quicker relief.
- Here the result oriented *rasaoushadhis* such as *Rasamanikya* in *Ekakusta*, *Kamadudha rasa* in *Amlapitta* are discussed.

## RASAMANIKYA IN EKAKUSTA:

- INGREDIENTS : *Shuddha Haritala*.(R.T)
- INDICATIONS : Chronic skin infections  
*Vatasleshma jwara.*  
*Swasa etc.*
- MATRA : ¼ to ½ Ratti
- ANUPANA : *Ghrta or Madhu.*

## RASAMANIKYA (ARSENIC) AND ANGIOGENESIS:

*Rasamanikya* strengthens the blood vessels and Arsenic is one of the micro-nutrient of the human beings (10 to 25 micrograms/day diet intake is necessary).

The new research work done by Barchowsky and colleagues after thorough examination and several observations proves that arsenic has good effect in living systems.

The group has found that the growth factors stimulated by low levels of arsenic promote the formation of new micro vessels, a process called angiogenesis.

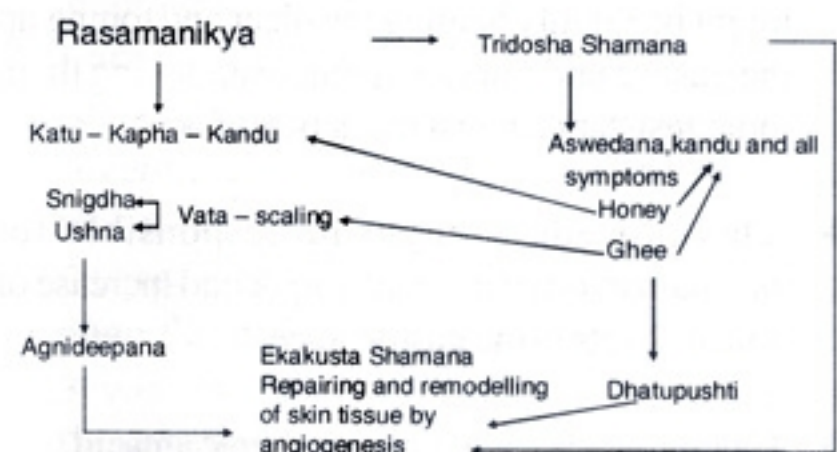
New blood vessels are essential in providing nutrients for rebuilding or repairing the damaged tissue, a process called tissue remodeling.

In *Ekakusta* (Psoriasis), there is a need of repair and remodeling the affected skin tissue that will be done by *Rasamanikya*.

The arsenic mainly absorbs in skin, Hairs, and Nails similarly their the disease Psoriasis occurs in skin, Hairs and Nails, thus the *rasamanikya* targets the diseased area and remodelling the skin tissue thus it cures the *Ekakusta* (psoriasis).

*Rasamanikya* induces apoptosis (*Am. J. Hematol.* 78:113-116, 2005.) of death skin tissue after that by angiogenesis repairing and remodelling of the skin tissue occurs.

## Probable Mode of Action of Rasamanikya - Ayurveda



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## KAMADUDHA RASA IN AMLAPITTA

### INGREDIENTS:

*Mukta Pisti.*  
*Pravala Pisti.*  
*Mukta Shukti Pisti.*  
*Kapardika bhasma.*  
*Shankha bhasma.*  
*Swarna Gairika.*  
*Guduchi satva. (R.Y.S)*

### INDICATIONS :

*Pitta vikara*  
*Amla pitta.*  
*Bhrama.*  
*Mutra vikara.*

DOSE : 1 to 3 ratti.

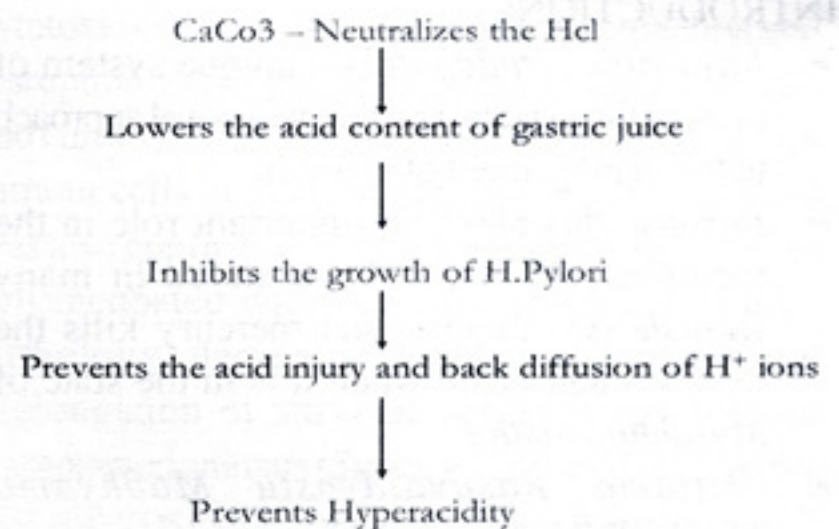
### ANUPANA :

*Jeeraka churna* with  
*sharkara, Dadima avaleha.*

### PROBABLE MODE OF ACTION:

- Most of the drugs in this yoga are calcium compounds having *deepana, pachana* properties, *sheeta virya, madhura* and *kashaya rasa, madhura vipaka*.
- *Kashaya rasa* tones up the tissue and fastens healing of ulcers.
- *Sudha vargeeya dravyas* being of *kashaya rasa* might be rapidly healing the ulcer and toning up the gastric and duodenal mucosa, making them more resistant against the action of acid.
- This procedure might be responsible for normalization of the acid output and increase of mucin levels in the gastric juice.
- Calcium carbonate is non systemic antacid.
- Gastric antacids are substance which on ingest react chemically with gastric acid and lower the acidity of gastric contents.

- They produce symptomatic relief from pain.
- Reduction of acidity inhibits the action of pepsin.
- It also increases the tone of the esophagastic sphincter and reduces by the reflex of acid and  $\text{CaCO}_3$  is potent rapidly acting acid neutralizer.



### CONCLUSION:

- *Rasa Shastra* is a boon of the medieval period in the field of medicine.
- Small doses, easy administration, quicker effectiveness, wide range therapeutic efficacy and long shelf life are the superior qualities of *Rasa oushadhis*, which made them to occupy a prestigious and important place in main stream of Ayurvedic therapeutics.
- Thus, the *Rasoushadhis* are considered as the backbone of Ayurvedic medicine.
- *Rasa ousadhis* have longer durability and enhanced properties of main drug.
- Indian philosophers say that *Kastoushadhis* are used in curable disease but *Rasa oushadhis* are used in curable as well as incurable diseases also.
- That is why *Rasoushadhis* are considered as most potent among the *Bhaishajya*.



# HAITI AFTER EARTHQUAKE.....

According to official statistics from Haiti's Civil Protection, the 12 January earthquake killed more than 200,000 people, caused approximately 300,000 injuries and displaced more than one million Haitians.

At one point, more than 600 organizations were providing humanitarian aid to Haiti, and currently, 274 organizations are conducting health activities in at least 15 communities. Immediately following the quake, the most pressing need was to rescue people buried in the rubble and provide immediate emergency care for trauma patients. Needs have now changed and focus is on post-operative care and follow-up of patients who have already had surgery as well as basic primary health care services, such as maternal child health, rehabilitation services, and chronic diseases including diabetes, heart disease, HIV, and tuberculosis, among others.

The Health Cluster liaises with other clusters, as many specialties have implications on the health of the population. Some of the major issues are as follows:

- The World Food Programme (WFP) reports that 16 food distribution sites have been activated across metropolitan Port reached 2 million people in and around Port-au-Prince since the earthquake struck. In a surge operation that began on 31 January, 1.4 million people received two weeks work of rice. The target population is two million.
- According to the CCCM Cluster, there are now ten organized settlements that are being managed by cluster partners with a total of 42,569 people. A list of all spontaneous temporary settlements contains 315 sites occupied by 468,075 people (91,112 families). Sanitation is becoming a major concern at many of the temporary sites
- The WASH Cluster continues to provide safe drinking water (5 litres per person per day) to over 780,000 people through 300 sites across Port au Prince, Leogane, and Jacmel. In Jacmel, over 260 temporary settlement sites are receiving water through the distribution efforts of cluster partners. The highest priority for the cluster remains sanitation and the strengthening of monitoring systems for sanitation activities.
- IOM is working with some 40 partners to provide mental health and psychosocial support to tens of thousands of earthquake survivors living in spontaneous settlements in Haiti; = provide comprehensive psychosocial first aid to some 150,000 individuals and follow-up counselling for up to 10,000 distressed individuals over the coming months. Six psychosocial mobile teams consisting of Haitian psychologists, social workers, educators, art therapists and cultural animators will deploy in settlements where needs have been identified
- Some 87 community outpatient care centers/mobile units for the treatment of severely acute malnutrition are open or have re-opened throughout Haiti. Nutrition Cluster partners have indicated plans to open 52 additional sites within the next 2-3 weeks. Within the 2 most affected Departments, OUEST and UD'EST, there are an estimated 577,246 infants, children and pregnant and lactating women have been affected. Women in the informal settlements

To Page 32



2. *Astanga Hridaya* states that at night, *Tamas* being powerful and the higher psychic centers being overpowered by it, then the living organism goes to sleep (A.H.Su. 9/28).
3. According to *Kashyapa* the *Satvaguna* is *Prakashaka* (brightening), *Raja guna* is *Pravartaka* (promoter) and *Tama guna* is *Niyamaka* (controller). So predominance of *Tamoguna* than *Satva* and *Raja* is the prime cause for sleep (Ka.Sa.Su.28).
4. *Harita* has stated that the center of sleep is in the upper half part of nose, between the two eye brows in the cranium. When the *Tamas* reaches the sleep center the knowledge and the activity get diminished and sleep occurs. (H.S.Sha. 1<sup>st</sup> Chp.).

#### b) *Kapha Dosa Theory*

- 1) *Sushruta* mentions that when the *Sanjavaha srotas* are filled with *Kapha* and *Indriyas* are deprived from their respective objects of senses, the person goes to sleep. He also clearly mentions the role of *Kapha* and *Tama* for *Nidra Utpatti* (Su.Sha.4/6, 33).
- 2) *Bhela* explains that *Kapha* situated in *Hridaya* is augmented during the process of digestion of food, during day time and when covers the *Chakshu vaha* and *Shrotra vaha Srotas*, it leads to sleep (B.S.Chi. 21/1-6).
- 3) *Astanga Sangraha* states that due to *Avarana* by *Shlesma* of the *Srotas* and *Shrama* of both types of the *Indriyas* occur which dissociates from their respective senses then *Nidra* occurs (A.S.Su.9/7).
- 4) *Astanga Hridaya* describes that whenever the sensation conveying channels of the body are blocked or filled up by the *Shleshma* and when this *Shleshma* is over saturated with the *Tamasika* quality the living being gets sleep. (A.H.Su. 8/28).

#### c) *Fatigue theory*

This theory is mainly stated by *Aatreya* school of *Ayurveda* and both *Astanga Sangraha* and *Astanga Hridaya* followed this view.

- 1) *Charaka* states that when the mind including *Jnanendriya* and *Karmendriya* are exhausted they

dissociate themselves from their objects, and then the individual sleeps (Ch. Su. 21/35).

- 2) *Vagbhata* gives importance to the *Kapha Dosha* and *Shrama* of the *Indriya* and *Manas* in the normal onset of sleep (A.S.Su. 9/7).
- 3) Due to exertion, *Jnanendriya* and *Karmendriya* cannot cognise their respective objects, then sleep is said to occur according to *Bhavaprakash* (B.P. Chi. 21/1-6).

This opinion suggests that sleep is a phenomenon resulting out of mental tiredness.

#### d) *Svabhava*

*Ayurveda* always gives emphasis on nature or *Svabhava*. According to this description even though we considered various theories still the natural instinct appears to be more powerful cause than others.

*Charaka* and *Sushruta* have mentioned by nature, the night serves as a causative factor for sleep (Ch. Su. 21/35, Su. Sha. 4/33).

#### Types of Sleep:

Various *Acharyas* have given various opinions regarding the types of sleep. But broadly it can classify into 2 types.

- 1) *Svabhavika Nidra* – which comes regularly and naturally at night.
- 2) *Asvabhavika Nidra* – which comes due to some other causes.

Other types of *Nidra* according to different *Acharyas* are as follows:

- 1) According to *Acharya Charaka* –
  - a) *Tamobhava*
  - b) *Shleshmasamudbhava*
  - c) & (d) *Manashareera Shrama Sambhava*
  - e) *Agantuki*
  - f) *Vyadhyanuvaritini*
  - g) *Ratri svabhava*  
(Ch.Su. 21/58)
- 2) *Acharya Sushruta* classifies as follows:
  - A) *Tamasi*
  - b) *Svabhavika / Vaishnavi*
  - c) *Vaikarika*  
(Su.Sha. 4/43)



3) *Vagbhata's* classification of sleep is similar with *Charak's* classification but the names differ.

- Tamobhava*
- Kaphabhava*
- Chittakhedaja*
- Dehakhedaja*
- Agantuki*
- Kalasvabhava*
- Amayaja*

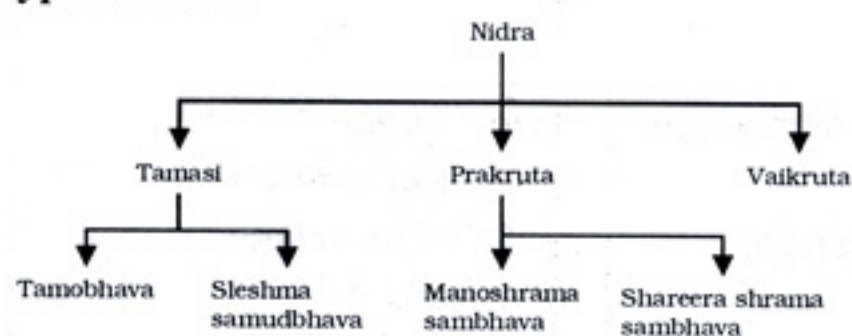
• ***Vyadhyanuvaritini***

In some diseases due to severe weakness the patient falls asleep called *Vyadhyanuvaritini*. Example *Sannipataja Jvara*.

• ***Agantuki***

Sometimes the cause of sleep remains unexplainable. *Chakrapani* and *Gangadhar* commented as *Agantuki Nidra* is indicative of bad prognosis which leading to definite death (*Arista lakshana*) (*Chakrapani & Gangadhar on Ch. Su 21/58*).

**Schematic diagram of interpretation of all the types of *nidra***



**References:**

1. *Charaka Samhita*; 2. *Sushruta Samhita*; 3. *Astanga Samgrha*; 4. *Astanga Hridaya*; 5. *Kasyapa Samhita* 6. *Harita Samhita*; 7. *Bhela Samhita*; 8. *Sarangadhara Samhita*; 9. *Bhavaprakash*; 10. *Yogaratanakara* 11. *Vachaspathyam*; 12. *Sabdistoma Mahanidhi*; 13. *Sabda kalpadruma*; 14. *Patanjali Yogasutra* 15. *Chandogya Upanishada*; 16. *Manduka Upanishada*; 17. *Br. Aranyaka Upanishada*

**Benefits of Sleep:**

- 1) Properly and timely taking sleep brings the happiness, nourishment, strength, virility, knowledge and maintains the life (*Ch.Su. 21/36*).
- 2) As the real knowledge brings about siddhi in a yogi similarly properly intake of sleep brings about happiness and longevity in human beings (*Ch.Su. 21/38*).
- 3) Proper sleeping at the night time makes the balance of the body constituents (*Dhatusamyata*) and provides alertness, good vision, good complexion, good strength and good digestive power (*Y.R. & B.P. Pu. Kh.*)
- 4) Persons who intake proper sleep in proper time will not suffer from diseases, their mind will be peaceful, they will gain strength, good complexion, good virility, attractive body and they will not be too lean or too fatty and they live good 100 years (*Su.Sha. 4/40 and Su.Chi. 14/88*).

**Conclusion:**

1. Ayurveda has given more importance to *Nidra* (Sleep) by considering it one among *Trayopastambha*.
2. Detailed descriptions regarding *Nidra utpatti* (Physiology of Sleep) are available in Ayurveda and *Upanishadas*.
3. Proper intake of Sleep leads to a Peaceful and Healthy life.

**WORLD WATER DAY 22 MARCH 2010**

This year World Water Day is dedicated to the theme of water quality:

- to raise awareness about water quality challenges in water management; and
- to raise the profile of water quality by encouraging governments, organizations, communities, and individuals to engage in addressing water quality (e.g. pollution prevention, clean up and restoration).

The United Nations Environment Programme is coordinating this year's World Water Day activities globally. WHO will be highlighting the importance of water quality and health in three main areas:

1. drinking-water quality;
2. safe use of wastewater in agriculture and aquaculture;
3. safe recreational waters.

(Courtesy: WHO website)



*Shatkriyakala* are explained, each of them is considered as an opportunity for treatment, rather the first 4 *Kriyakala* can be considered as an opportunity for preventing the disease manifestation. It can be considered as secondary prevention and if 5<sup>th</sup> & 6<sup>th</sup> if considered as tertiary prevention will not be wrong. *Patyapathya*, *Padanvshika krama*, *Upavasa*, *Upashaya*, *Nidan Parivarjana* can also be considered under Secondary & Tertiary prevention.

and helps us in prevention of *Nija – Agantuja Vyadhi*.

### Conclusion :

Concept of prevention is well explained in *Ayurveda*. Importance is not only given to physical health but also mental, spiritual and social health too.

<p><b>Matruja, Pitruja</b></p> <ul style="list-style-type: none"> <li>▪ Proper age of marriage.</li> <li>▪ <i>Atulya Gotra Vivaha</i>.</li> <li>▪ <i>Garbhadhana Yogya Stri - Purusha Laxana</i>.</li> <li>▪ <i>Grbhadhana Yogya Kala &amp; Vidhi</i>.</li> </ul>	<p><b>Rasakruta, Douhrudakruta</b></p> <ul style="list-style-type: none"> <li>▪ <i>Garbhini paricharya :- Samanya &amp; Masanumasika</i></li> <li>▪ Special care during <i>Douhrudavastha: Douhrudapurthi</i> which is <i>Priya &amp; Hita</i>.</li> <li>▪ Following <i>Pathya-Apathya</i>.</li> </ul>	<p><b>Vikruta , Avikruta Ritu</b></p> <ul style="list-style-type: none"> <li>▪ <i>Rutucharya</i></li> <li>▪ <i>Sanchita dosha nirhara</i></li> <li>▪ <i>Aoushadhi sangraha</i></li> <li>▪ <i>Rakshkarma</i></li> </ul>
<p><b>Sharirika &amp; Manasika Sanghata</b></p> <ul style="list-style-type: none"> <li>▪ <i>Swasthavritta Palana</i></li> <li>▪ <i>Sadvritta Palan</i></li> </ul>	<p><b>Vidyuta , PishachaSamsargaja , Aakasmika:</b></p> <ul style="list-style-type: none"> <li>▪ <i>Dinachrya &amp; Sadvrutta</i></li> <li>▪ <i>Rasayana</i></li> <li>▪ <i>Rakshakarma</i></li> <li>▪ <i>Jala shuddhi</i></li> <li>▪ <i>Vayushuddhi</i></li> <li>▪ Care taken in <i>Graha, Sutikagara &amp; Rugnagara</i>.</li> </ul>	<p><b>Kala , Akala</b></p> <ul style="list-style-type: none"> <li>▪ <i>Rutunusarashodhana</i></li> <li>▪ <i>Bhoomi,jala shuddhi</i></li> <li>▪ <i>Rasayana</i></li> <li>▪ <i>Sadvritta Palan</i></li> </ul>

Sushruta has beautifully classified all the diseases under 7 types. All the measures mentioned for each will help in preventing different diseases in different condition. This will fulfill the purpose of being healthy

One who desires to be healthy & happy must prevent the disease before its manifestation and to achieve this goal the “*Swasthavritta – A way of living*” is the best way.

### References :

1. Charaka Nidana 6 / 7; 2. Charaka Sutra 30 / 26; 3. Charaka Sutra 28 / 34 , 2 / 43; 4. Charaka Sharira 1 / 91
5. Charaka Sutra 7 / 55; 6. Charaka Sutra 28 / 34; 7. Charaka Sutra 7 / 45 ; 8. Charaka Sutra 7 / 41



(Roughness), *Suksma* (subtleness, capacity of entering minutely), *laghu* (light in weight), *chala* (self mobile, unsteady), and *visada* (Nonsticky).

*Asu* and *Chala*, guna(qualities) of *Vata* can precipitate its specific pathogenesis *Chesta*<sup>14</sup> (motivation). In *Nanatmaja vata vikara*, *Aswapana* may be due to *Chesta* (motivation) in midbrain ascending reticular formation (which maintains wakefulness) and limbic system (responsible for emotions and thinking). Benzodiazepines (drugs) act preferentially on midbrain ascending reticular formation and on limbic system. They act by enhancing pre synaptic/ post synaptic inhibition through a specific BZD receptor which is an integral part of GABA<sub>A</sub> receptor cl<sup>-</sup> channel complex<sup>15A</sup>. So action of anti-anxiety drugs, suppress *Chesta* (motivation) and alleviates *Vata*. Further, during slow wave sleep, sympathetic activity decreases while parasympathetic activity increases. There fore a restful" sleep" ensues-arterial blood pressure fall, pulse rate decreases, skin vessels dilates, and over all basal metabolic rate of the body falls by 10 to 30 percent.<sup>15B</sup> So increase in respiratory rate and pulse rate in *Aswapana Nanatmaja vikara*, explains increased sympathetic activity in *Vata vikaras*.

For all forty types of *Paittika vikaras*, qualities and *swaroop* of *Pitta* is only responsible<sup>16</sup>. It signifies importance of qualities and disturbed functions of *Pitta* in pathogenesis of *Paittika vikara*.

#### Qualities of *Pitta*: -

*Pitta* is *Drava* (liquid), *pita* (yellow in color) and possesses qualities such as *sasneha* (slight unctousness), *Tikshana* (penetrating deep). *Usna* (hot, heat producing), *laghu* (light in wt), *visra* (fetid odors) *Sara* (mobile, fluid)<sup>17</sup>. *Pitta* causes *Haridratwa* by its some specific disease causing actions viz: capacity of producing all colours except red and white etc. Bilirubin is a pigment formed by Heme after dissociation of Haemoglobin. When bilirubin metabolism disturbed, yellowish dis-

colouration of mucous membrane, urine and sclera occurs known as jaundice. It has been found that lactulose decrease intestinal transit of bile<sup>18</sup>. Metabolism of bilirubin still not fully understood but it seems that intestinal phase where lactulose works is cause behind decrease in serum bilirubin, after administration of lactulose. Its has been mentioned in Ayurvedic literature that, *Virechan* (purgation) is best method of treatment in *Kamla* (a condition in which serum bilirubin increases). Probably *Virechan* interferes in intestinal phase of bilirubin metabolism.

#### Quality of *Kapha*: -

It is *sthira* (static, stable), *mrtsna* (slimy), *slaksana* (smooth), *guru* (heavy), material, possessing qualities such as *sita* (cold), *snigdha* (moist, unctous), *manda* (slow, sluggish), *sweta* (white colour) etc<sup>19</sup>. The *guru* (heavy) and *manda* (sluggish), guna (quality) of *Kapha* can precipitate *Bandhana* (integrity) a specific pathogenesis of *Kapha*.<sup>20</sup> *Balasak* is considered as *Kapha kshaya avastha*. So in this *Nanatmaja kapha vikara* integrity of *dhatu* decreases. With advancement of age, *Kapha* regularly decreases in body and *Vata* increase. So there is steady loss in muscle mass occurs from middle age onwards. This results in a progressive and substantial loss of strength, even in the absence of symptomatic or diagnosed disease. People aged 65-89 year show difference in strength consistent with loss of strength at some 1-2 percent per year.<sup>21</sup> In pathological condition decrease in strength (General debility), results in steady loss of muscle mass, can be under stood as *Balasak*. Anabolic steroids, are synthetic androgens with supposedly higher anabolic and lower androgenic activity. Its mechanism of action is similar to testosterone. Testosterone can largely be regarded as the circulating pro-hormone. In most target cells, the 4-5 double bond is reduced-dihydrotestosterone-which binds more avidly with the cytoplasmic receptor and this complex is more active than testosterone receptor complex in combining with DNA. After such combination DNA transcription is enhanced and effects are expressed through modification of protein synthesis.<sup>22</sup>



In this way, *guru* (heavy) or high molecular weight compounds (protein) synthesized, which increase *Kapha* due to similar properties. Protein also repairs body tissues and augment growth in body.

Debility is defined as weakness of tonicity in function or organs of the body. Which is probable explanation for results in present study.

#### SUMMARY AND CONCLUSION: ( AFTER TRETMENT)

1. Decreased frequency of bowel habit in patients of group I.
2. Increased frequency of bowel habit in patients of group III.
3. Decreased amount of stool in patients of *all the three groups*.

4. Increased consistency of stool in patients of *all the three groups*.
5. Decreased consistency of stool in patients of *all the three groups*.
6. Increased frequency of bladder habit in patients of group I and group III.

#### Improvement in objective parameters included

1. Decrease in pulse rate (mean decrease in group I 8.70, in group II 6.60, in group III 12.70) in patients of *all the three groups*.
2. Decrease in respiratory rate (mean decrease in group I 2.00, in group II 3.55, in group III 4.05) in patients of *all the three groups*.

#### Acknowledgement:-


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## AYURVEDIC RENAISSANCE

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concentrations. The results show that *S. nigrum* ethanol extract reduced the viability of EAC cells in a concentration dependent manner, which indicates the cytotoxic effects of *S. nigrum*. But in case of *C. aromaticus* and *I. pes-tigridis* both were having less cytotoxic effect on EAC cells. Among the three plants *S. nigrum* have more cytotoxic activity. Both 5 and 10 mg/ml have 100% cell death when studied using Trypan Blue Exclusion cytotoxicity activity in EAC cells.

Free radicals may be important in carcinogenesis at multiple tumor sites (Sies, 1997). Phytochemical and dietary antioxidants are known to decrease the risk of chronic diseases such as cancer and cardiovascular disorders. The antioxidant activity may be a result of one of the following specific scavenging of reactive free radicals, scavenging of oxygen-containing compounds such as hydrogen peroxide, or chelation to metals (Priyadarsini, 1997). It is well documented

that certain plant compounds, particularly; polyphenolic component like flavonoids has the capability to induce apoptosis as well as reversal of resistance to apoptosis (Cardile *et al.*, 2003; Leone *et al.*, 2003; Lee *et al.*, 2003). Our study clearly proved that *I. pes-tigridis* is the most efficient free radical scavenger among these three herbs.

We could also conclude that *S. nigrum* affects the viability of EAC cells due to the presence of active constituents like biflavonoids and other polyphenolic compounds (Vjayalaksmi *et al.*, 1996), which may be responsible for the anticancer activity of *S. nigrum*. In our conclusion *S. nigrum* ethanol extract has strong evidence to have cytotoxicity activity in EAC cells.

We have a strong notion that the combination of *S. nigrum* and *I. pes-tigridis* may prove to be a very effective phyto medicine against cancer. We recommend for further studies in *S. nigrum* and *I. pes-tigridis* jointly and separately in animal models and for efficacy, toxicity and optimum dosage.

**Table-1. Yield of Extracts of *S. nigrum*, *C. aromaticus* and *I. Pes-tigridis***

Plants	Hexane	Chloroform	Ethyl acetate	Ethanol	Water
<i>S. nigrum</i>	1.4	1.8	2.7	8	10.12
<i>C. aromaticus</i>	1.28	2.35	5.24	12.54	23.13
<i>I. Pes-tigridis</i>	1.29	1.12	2.15	2.29	5.06

**Table 2. Cytotoxicity activity of *S. nigrum*, *C. aromaticus* and *I. pes-tigridis* on EAC cells**

Extracts	Concentration	<i>S. nigrum</i>	<i>C. aromaticus</i>	<i>I. pes-tigridis</i>
Hexane	10mg/ml	100.00%	90.80%	99.20%
	5mg/ml	100.00%	83.28%	98.63%
	1mg/ml	98.40%	71.11%	92.14%
Chloroform	10mg/ml	100.00%	95.85%	94.73%
	5mg/ml	100.00%	93.29%	93.64%
	1mg/ml	95.20%	82.64%	85.14%
Ethyl acetate	10mg/ml	100.00%	95.58%	93.50%
	5mg/ml	97.50%	87.59%	92.83%
	1mg/ml	93.20%	65.46%	86.24%
Ethanol	10mg/ml	100.00%	94.36%	90.14%
	5mg/ml	100.00%	92.34%	89.08%
	1mg/ml	100.00%	87.25%	78.22%
Water	10mg/ml	100.00%	95.75%	90.85%
	5mg/ml	100.00%	94.73%	88.82%
	1mg/ml	92.12%	87.12%	77.58%

All the concentration were prepared 10, 5 and 1 mg of raw powder equivalent corresponding extract. The extracts were dissolved in DMSO.



**Table-3. Total polyphenolic content, DPPH and ABTS assay of *S. nigrum*, *C. aromaticus* and *I. pes-tigridis* ethanol extract**

Plant name	DPPH radical scavenging assay (IC 50)( $\mu\text{g/ml}$ )	ABTS radical scavenging assay (IC 50)( $\mu\text{g/ml}$ )	Total phenol mg gallic acid ( equivalents/g dry weight extract)
<i>Coleus aromaticus</i>	275.3 $\pm$ 3.5	166.3 $\pm$ 2.4	10.3 $\pm$ 2.4
<i>Ipomea pes-tigridis</i>	141.8 $\pm$ 2.7	122.7 $\pm$ 1.9	20.6 $\pm$ 1.3
<i>Solanum nigrum</i>	656.2 $\pm$ 5.2	234.1 $\pm$ 3.4	8.2 $\pm$ 0.6

Values are mean  $\pm$  SD. The values were obtained from three different experiments performed in duplication.

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**Silajatu**, is a drug since *Samhita* period is good for *Rasayana* purpose and is another pearl in *Rasa* Ocean. It also quoted in various diseases as a drug of choice for so many diseases and it is one of the main ingredients in *Arogyavardhini vati* and *chandraprabha vati* which are considered as *sankha* and *chakra* of Lord *Narayana*. Both *Arogyavardhini vati* and *Chandraprabha vati* plays an important role in Ayurvedic therapeutics.

There is no curable disease on earth, which could not be destroyed by *silajatu*. If it is consumed in proper combination, proper way and in a proper time can bestow with plenty of energy<sup>6</sup>.

While describing its properties in *Rasa Ratna Samucchaya* it is said that, it possesses all the properties of *Rasa*, *Uparasa*, *Suta (parada)*, *Ratna* and *Loha*<sup>7</sup>. Hence it can ultimately conquer senile diseases<sup>7</sup>. It conquers senility diseases, helps in strengthening of the body, and improves the intellect and memory. Though most of the diseases were claimed to be cured by *Silajatu*, it seems it acts more effectively in *Medovaha srotas* and *mutravaha srotas* disorders<sup>8</sup>.

### Dosage as per *Charaka*

*Pravara* (large dose): - 4 tola (46gms) - 49 days/ 7weeks

*Madhyama* (medium dose): - 2 tola (23gms) - 21 days/3weeks

*Avara* (small dose): - 1 tola (12gms) - 7 days/1 week

The above dose is comparatively very high in present context. The more practical dose can be adoptable which may be from 2 Ratti to 8 Ratti (250mg to 1gm).

### *Anupana*

It is administered along with any of the liquids like cows milk, butter milk, meat soup, porridge prepared by mudga, plain water, cow's urine and fruit juice and other herbal juice or decoctions.

The food which is *vidahi* and *guru* should be avoided, especially *kulattha* not be consumed in any

form. Apart from this rigorous exercise, hot sunshine, sweeping wind and meat of pigeons and *kakamachi* are also avoided.

### Safety of medicines

It is a false belief developed about *Rasa* compounds that these are not safe and not to be used in old Age. It may be true if they are used in crude form because all the *Rasa* drugs originate from the layers of the earth and these are associated with the toxins of the earth. None of the *Rasa* drugs are used in crude form except *AgniJara* and *Samudraphena*. *Rasa* scholars are so wise and so scientific. They have explained each and every step of purifications and Incinerations of different kinds to each and every drug of *Rasashastra* (excepting a few).

In purifactory methods the particular *Rasa* drug is subjected to various processes with various herbal decoctions commonly being used are *Triphala*, *Bhringaraja* decoction, *Guduchi* decoction, *Gomutra*, *Kanji* (A special recipe of *Rasa Shastra* exclusive for the *Samskara* of *parada*), Lemon juice etc. A point to be noted here is there is no single herbal drug with which all the *Rasa* compounds are subjected to purification process.

Each every drug in this world possesses a definite action. Action of the drug on the human body as it does good / bad on it will make the drug to use further and can be considered safe. Before prescribing the drug to the patient a preview of the status of bio chemical parameters of the body is important. A drug ingested when the excretory functions of the body is not in a proper status will definitely impacts negatively in the form of adverse reactions.

For each and every drug of *Rasa Shastra* a clear dosage schedule, *Anupana*, *pathya*, *Apathya*,



symptoms develop after ingestion of improperly/ misused *Rasa* preparations and their treatment are mentioned in detail.

### Conclusion:

Although *Rasa* drugs established since from the *Samhita* period, their usage reached its peak in the medieval period only. A very common utterance of *Rasa* scholars with a very great confidence "*Siddhe rase karishyami nirdaridramidam jagat*" can give an idea about the development of *Rasashastra*. To get rid the severely effected illness physically and socially the *Rasa* scholars might developed various *Rasa* compounds. They made the pre-clinical studies before the usage it in therapeutics.

A trail with the conversion of lower metals into higher metals (*Loha siddhi*) before the usage on human body (*DehaSiddhi*) is the ultimate for *Rasa* scholars to make the human body as like that of Higher metals which are immortal. The physicians are prescribing the *Rasa* drugs since centuries and succeeded. *Jara* is being common to body and there is degeneration of *dhatu*s in this particular stage there is strict necessary to use the *Rasa* drugs, which are immortal. A common prescription from so many Ayurvedic physicians *Purna chandrodaya rasa* is in practice since centuries. The usage of *Swarna* compounds for certain chronic conditions like arthritis, *yakshma* etc is proven and is very much established in therapeutics. *Rajata Bhasma*, *chandra prabha vati* are usual drugs of choice for the common symptom of the old age, ie. *Bhrama* (Vertigo). *Chyavan prasa*

is being used from the *Samhita* period also contains some of the *Rasa* compounds among the other ingredients.

A short-term usage of *Abhraka Bhasma*, *Silajatu*, *Vanga Bhasma* and other mercurial compounds for the diseased who are suffering with *Madhumeha*, *kasa* (Chronic bronchitis) will definitely help the human kind to lead their life healthy.

Benign prostrate hypertrophy (BPH) is being common occurrence for the elderly male is taken care easily with *Vanga Bhasma*. Cystocele is also being commonly observed in gravid elderly women also taken care with *Vanga Bhasma* with little pelvic exercises. A part of ageing every woman attends menopause in her life cycle. This stage usually associated with so many gynecological conditions like fibroid uterus, ovarian cysts etc symptoms being menorrhagia can be taken care with *Rasa* compounds like *Vaikranta* and *Silajatu*. Any drugs to act upon the body the normal levels of the Bio chemical parameters are very important. Likewise *Rasa* drugs also safely and confidently practiced provided the human body fulfills the above criteria. In the present society physicians are completely dependent upon the pharmaceutical companies for their drug supply. So, a humble request with the pharmaceutical companies from the author side is provide the drug genuinely so that false belief upon the usage of *Rasa* compounds can be explained by showing their therapeutic efficacy and safety profile of the *Rasa* compounds.

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### Habit & Habitat

A moderate-sized deciduous tree with a light feathery crown occurring throughout India.

### Description

A moderate sized deciduous tree with dark greyish or brown rough bark and hooked short spines, leaves bipinnately compound, leaflets 30-50 pairs, flowers pale yellow, sessile in peduncled axillary spikes, fruits flat brown pods, shiny and with a triangular beak at the apex and narrowed at the base, seeds 3-10 per pod.

**Parts used:** Bark, Heartwood.

### Chemical constituents

Tannins, gum resin mucilage, catechin, epicatechin, saponins etc.

### Properties & Uses

*Kattha*, a resinous extract is regarded as astringent, cooling and digestive, used for relaxed conditions of throat, toothache, mouth and gums, also in cough and diarrhoea. Externally it is employed as an astringent and as a cooling application to ulcers, boils and eruptions of the skin. It is reported to be an antileprotic drug.

### Anticancer activity

Catechin, the main phenolic constituents found in the plant was found as chemopreventive agent in benzo[a]pyrene-induced forestomach tumours in Swiss mice and methyl (acetoxymethyl) nitrosamine-induced oral mucosal tumours in Syrian golden hamsters. Catechin in drinking water significantly inhibited the tumour burden and tumour incidence in both the tumour models. The induction of oral tumours in golden hamsters was delayed by catechin. Adjuvant chemoprevention utilizing catechin inhibited both the gross tumour yield and burden more effectively than when compared to individual components in both the models. It was also found that a single injection of catechin to male swiss mice induced increased forestomach and hepatic glutathione S- transferase activity when compared to the controls (Azuine and Bhide, 1994)

## Albizia lebbeck. Linn

Family	- Mimosaceae
English name	- East Indian Walnut
Sanskrit name	- <i>Sirisa</i>
Hindi name	- <i>Siris</i>
Malayalam name	- <i>Nenmenivaka</i>
<b>Ayurvedic Properties:</b>	
<i>Rasa</i>	- <i>Madhura, Tikta, Kashaya</i>
<i>Guna</i>	- <i>Laghu, Ruksha, Tikshna</i>
<i>Virya</i>	- <i>Sita</i>
<i>Vipaka</i>	- <i>Katu</i>
Actions	- <i>Visanasana, vedanasthapana, sirovirechana</i>

### Habit & Habitat

A large, erect, unarmed, deciduous, spreading tree, common all over India..

### Description

A medium to large sized unarmed deciduous tree with an umbrella shaped crown and grey to dark brown rough irregularly cracked bark, leaves bipinnate, pinnae 2-4 pairs, leaflets 5-9 pairs with glands, flowers white, fragrant, in globose umbellate heads, fruits long, characteristic pods, thin, pale yellow, smooth, shiny, reticulately veined above the seed, seeds 4-12, pale brown, ellipsoid, compressed.

**Parts used:** Bark, flowers, seeds

### Chemical constituents

Saponins, Sapogenins, Acacic acid etc.

### Properties & Uses

The bark has acrid taste. It is recommended for bronchitis, leprosy, paralysis and helminth infections. Both bark and seeds are astringent, useful in piles and diarrhoea and act as tonic. The root bark and gum are used as dental powder for strengthening the gums. The leaves are used in night blindness.

### Anticancer activity

The 50 percent ethanolic extracts of the root in a preliminary screening showed anticancer activity against sarcoma 180 in mice, effect on CVS in dog/cat. Anticancer activity in human epidermoid carcinoma of the nasopharynx in tissue culture.



## **Alstonia scholaris. Linn**

Family	- Apocyanaceae
English name	- Match stick tree
Sanskrit name	- <i>Sapthaparna</i>
Hindi name	- <i>Saitan-Kajhad</i>
Malayalam name	- <i>Ezhilampala</i>

### **Ayurvedic Properties:**

Rasa	- <i>Tiktha, Kashaya</i>
Guna	- <i>Laghu, Snigdha, Sara</i>
Virya	- <i>Usna</i>
Vipaka	- <i>Katu</i>
Actions:	- <i>Kaphavathahara, Hradya, Dipana</i>

### **Habit & Habitat**

It is a large evergreen tree found almost throughout India upto an altitude of 600 m.

### **Description**

A large evergreen tree with a straight often fluted and buttressed bole, bark greyish brown, rough, milky latex, leaves 4-7 in a whorl, coriaceous, flowers small, greenish white, numerous in umbellate panicles, very shortly scented, fruits follicles, seeds papillose with brown hair at each end.

**Parts used:** Bark, leaves, milky exudate

### **Chemical constituents**

Villastonine, Echitamine, Picralinal, Scholarine, Nareline etc

### **Properties and uses**

The bark of *Alstonia scholaris* regarded as a bitter tonic possesses astringent, anthelmintic and galactagogue properties. It is useful in heart diseases, asthma, chronic diarrhoea and to stop bleeding from wounds. The drug is having good action in cancer like conditions.

### **Anticancer activity**

Echitamine chloride from the bark dissolved in saline (10 mg/kg bw) and injected subcutaneously for 20 d in methylcholanthrene – induced fibrosarcoma rats exhibited significant regression in tumour growths. Recent research works in cancer management show that cancer is not hopeless. The disease has to be fought on all fronts with sustained vigour, for then only it is possible to bring hope to the hearts of the patients and their near and dear ones. Herbal drugs are very useful for the treatment of these disease and more studies are needful.

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Haiti.... from Page 21

are also being trained as breastfeeding counselors.

- UNICEF says some 23 large-sized tents have been installed in Port-au-Prince to give children a place to seek refuge and play. Families are wary of sending children to school because they fear that another earthquake could strike. UNICEF is working

with the Government to distribute messages to Haitians encouraging them to send their children back to school. Schools in unaffected regions opened on 1 February, while the Government of Haiti says the remaining will open by 1 March. Forty-percent of the population of Haiti is under 14 years of age and child protection is also an area of grave concern.

(Courtesy : WHO Website)





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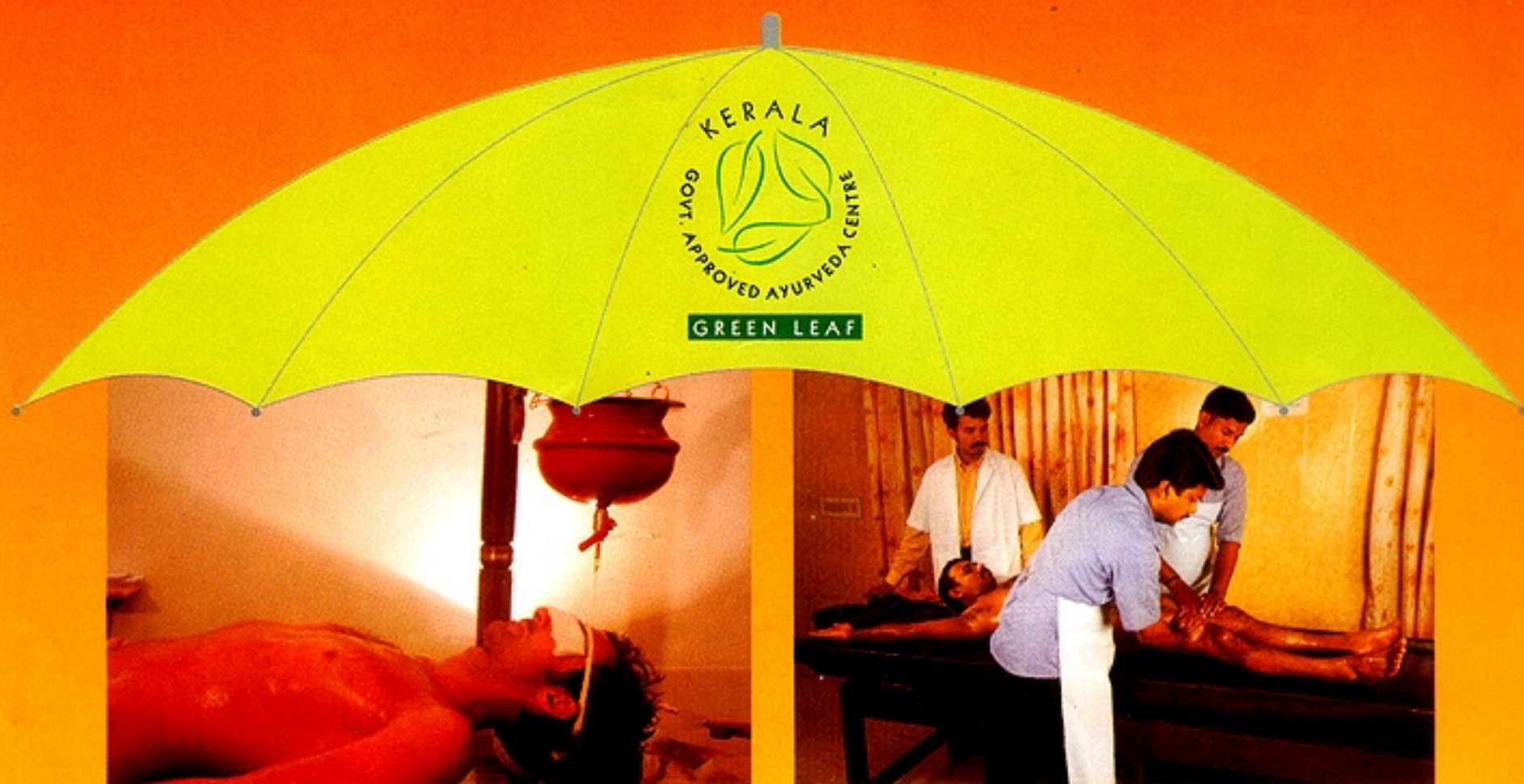
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